An analysis of English verb-particle combinations: A corpus-informed study applied to English language teaching

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Chapter 1 Introduction

English verb-particle combinations such as phrasal verbs and prepositional verbs figure prominently in the speech of native speakers, but they pose problems for many learners of English, and teachers of English as a foreign language need strategies to help learners master these difficult forms. In this study, I closely examine English verb-particle combinations from a range of corpora, using corpus-based linguistic analysis to provide pedagogical insights on how these combinations may be taught to Japanese learners of English. Because these constructions employ both adverbs and prepositions as particles, the discussion also focuses in part on the problems of linguistic categorization surrounding verb-particle combinations.

Various researchers (e.g., Fukui, 2006) have argued that phrasal verbs are semantically gradient but fall into three distinct categories: literal, aspectual, and idiomatic. In this paper, the appropriateness of the syntactic and semantic gradience of this kind of construction is analyzed, using corpus techniques. The evidence here reveals that the borders between these categories (e.g., adverbial vs. prepositional, aspectual vs. nonaspectual, literal vs. figurative) are not always clear and that we need to examine them carefully, combining cognitive approaches with corpus research and other methods. In this thesis, the author proposes that prepositional verbs belong semantically to the same scale class as idiomatic phrasal verbs, even though they are syntactically different in many ways. It is further suggested that this gradient analysis is applicable even to the meanings of words through an expansion of their metaphorical connotations from concrete to abstract or idiomatic.

Finally, the author points out the importance of elicitation test techniques for Japanese EFL (English as foreign language) learners in terms of this realm of learning. Using an approach that combines cognitive and corpus-based methods, this study also compares the uses of verb-particle combinations in Japanese learners' corpora, such as the Japanese EFL learners' (JEFLL) corpus, and in native speakers' corpora, such as the Louvain Corpus of Native English Essays (LOCNESS). The results show why Japanese learners of English tend to use fewer verb-particle combinations than

native speakers do.

In this study, I investigate the following three research questions:

Research Question 1: Do Japanese learners of English tend to use less English phrasal verbs both in number and kind than native speakers of English?

Research Question 2: Do differences in the semantic nature of phrasal verb types (figurative vs. literal) affect the uses of phrasal verbs by Japanese learners?

Research Question 3: Are the developmental stages of the Japanese EFL learners related with the uses of phrasal verbs on the basis of the ways the learners' performance is measured?

The structure of the thesis is as follows.

Chapter 2 offers a definition for English verb-particle combinations and deals with some of the linguistic properties of both prepositional and phrasal verbs. Chapter 3 surveys some of the educational problems related to English verb-particle combinations, focusing on evidence from questionnaires administered to Japanese high school EFL teachers and from a corpus-based examination of high school-level Japanese EFL textbooks.

Chapter 4 addresses elicitation research combined with corpus-based methodology. It lays the groundwork for original elicitation test research comparing how native English speakers and Japanese EFL learners tend to use these kinds of constructions. The findings are presented and discussed in Chapters 5 and 6, respectively. Chapter 7 describes some pedagogical implications for EFL classrooms. Finally, Chapter 8 provides the conclusion.

Chapter 2 Literature Review

In this Chapter, the author defines phrasal verbs, citing a number of linguistic studies, and presents a detailed description of their syntactic and phonological characteristics. The author also explores the semantic nature of phrasal verbs, to reveal differences in the phrasal verb types in order to answer Research Question 2.

2.1 Definition and some questions

Phrasal verbs are, in one sense, "verbal phrases," a term first introduced by Smith (1925). Later Palmer (1965) called them "verbal combinations," while Fraser (1974) named them as "verb-particle combinations," and Yasui (1996, p.388) cites them from Sweet (1891-98) as "group verbs." Dehē (2002) and Geld (2009) use the term "particle verbs" instead of phrasal verbs, focusing their attention mainly on particles rather than verbs.

Palmer (1965) gives us four types of verbal combination patterns as shown below:

(1) a. He *ran into* an old friend. (Prepositional verbs)

b. The enemy finally *gave in*. (Phrasal verbs without object)

c. I *put up* a candidate. (Phrasal verbs with object)

d. I can't *put up with* that man. (Phrasal prepositional verbs)

A phrasal verb is qualified to be a word which is functionally modified from a phrase into a word comprising a verb and an adverbial particle (Nishikawa, 2003). Hence, this turns out to be a phrase syntactically but semantically or cognitively, a word.

Idiomatic phrasal verbs are usually highly frozen fixed expressions composed of two or more words, and semantically they are often thought to be almost the same as one word, or one lexical item which has one meaning. However, it is to be noted that not a few phrasal verbs (e.g. *make out*) have more than one meaning and that they are not necessarily syntactically frozen, that is, some of the idiomatic expressions can also receive several kinds of syntactic operations such as

passivization, modification, pronominalization, and deletion or ellipses.

As for the term, Bolinger (1971, p.3) lists the following additional examples: “two-word verb,” “discontinuous verb,” “compound verb,” and “verb-adverb compound.” He himself uses the popular term “phrasal verb.” Thus, Bannard (2002) has chosen to use “verb-particle construction” (henceforth VPC) in his paper because it seems to be the most explicitly descriptive and straightforward term available. Along this line, Ando (2005, p.737) adds other examples, such as "verb-adverb combination" originated from Kennedy (1920), and "complex verb." Siyanova and Schmitt (2007) and Uchida (2012), on the other hand, use the term multi-word verbs instead of VPCs to compare them with one-word verb equivalents.

Takagi (2004) shows an overview of the definition of phrasal verbs and illustrates a certain number of *get* and *go* verbal patterns. He cites Bolinger’s (1971, p.145) comment as follows: Phrasal verbs by the simplest definition must contain a verb proper and something else. What something else refers to can be thought much of while we ask whether there is significance in the simple fact of there being more than one word. In this construction, therefore, it seems preferable to use particles as they are because they are sometimes very difficult to distinguish precisely and rigidly. For example, a number of researchers treat them as not only adverbial but also prepositional when they deal with VPCs, while others don't (Emonds, 1972; Farrell, 2005; Nishikawa, 2003; Watanuki & Petersen, 2006).

An issue I will consider is the choice between one-word verbs and their corresponding multi-word counterparts in English. Multi-word verbs (MWVs), or VPCs, tend to be colloquial in tone and are known to pertain to informal or spoken discourse. Previous research suggests that English learners often have problems with these verbs and may even avoid their use. Siyanova and Schmitt (2007) explored this issue further by comparing the likelihood of the use of multi-word vs. one-word verbs by native speakers and that by advanced non-natives. They analyzed the frequency of 26 verb pairs, consulting the Cambridge and Nottingham Corpus of Discourse in English

(CANCODE), a native spoken corpus, and the British National Corpus (BNC), a native written corpus. Their questionnaire of 26 multi-word/one-word verb pairs showed that non-natives were less likely to use MWVs than native speakers in informal spoken contexts, and that the amount of exposure to native-speaking environments did not have an effect on the likelihood of the use of MWVs by non-native speakers. However, a corpus analysis of the same verb pairs showed that the one-word verbs are often more frequent in both written and spoken discourse.

It has often repeatedly suggested that in the human language acquisition process, it is easier to acquire general or unmarked items than special or marked ones. Multi-word or "phrasal" verbs seem to be marked in a sense, since they are generally difficult for non-native speakers to acquire. The reasons appear to relate to the followings points. First, they are characteristic in Modern English syntax, which is rich in them. Second, they are very productive expressions and keep on increasing in both number and type so that it takes much time and effort to learn each one by heart. Third, their idiomaticity makes them difficult to learn because non-native speakers of English sometimes cannot retain a wide variety of different meanings for the same term (Bolinger, 1971; Side, 1990).

Traditionally, phrasal verbs have been regarded as intrinsically lexical items—they are treated within the lexicon, and learners need to memorize their meanings and usages individually to use them. Here, I examine their characteristics closely from a wide range of perspectives and take a position on their semantic and pragmatic classification in order to achieve a more natural approach to their acquisition. The author focuses on several basic problems, as follows.

First, what is the difference between English phrasal verbs and their corresponding one-word verbs? Phrasal verbs may be freely paraphrased by corresponding one-word verbs; they seem interchangeable. However, they do differ slightly in both usage and register (Tani, Horiike, Sugimori, and Tomita, 2001). The author accepts the gist of Tani et al. (2001)'s proposal but poses the question of how useful it is in understanding non-native learners' acquisition and how much

account should be taken of it.

Second, how can various meanings of the phrasal verbs be learned most effectively? Phrasal verbs are ambiguous in meaning and polysemic depending on the context. To deal with this, the author follows the cognitive approach of Nieda (2006).

Third, what is the relationship between form and meaning? Various researchers have pointed out that idiomaticity has an influence on phrasal verbs. The *Collins Birmingham University International Language Database (COBUILD) Dictionary* gives us the following easy formulation: stand=stand up. However, the author cannot accept this kind of generalization, even if *up* functions only as a spatial particle, because, for instance, *stand* has a static meaning while *stand up* represents movement.

Fourth, what is the most basic meaning of each phrasal verb? Martin (1991) gives us the following nine most popular verbs in English on the basis of an investigation of family letters from the 15th through the 18th Century: *go, come, put, bring, take, set, make, give,* and *lay*. Tani et al. (2001), on the other hand, show us a very different list of the 10 basic verbs most frequently used in phrasal verbs in the Hollywood Movie Corpus: *get, go, come, take, make, put, hold, run, cut*, and *turn*.

Phrasal verbs have often been said to be quite common in informal, spoken English and to be used most commonly in fiction and conversation, but to be relatively rare in academic prose (Biber, Johansson, Leech, Conrad, and Finegan, 1999; Leech, 1989). It is also said that most common phrasal verbs are of the "old, common, monosyllabic or trochaic 'basic English' variety" (Live 1965, p. 430), and in fact the Longman Grammar of Spoken and Written English (Biber et al., 1999) gives us the following list of eight typical base verbs for phrasal verbs: *take, get, put, some, go, set, turn,* and *bring,* while Makkai (1972) gives us ten typical verbs: *put, get, come, take, run, go, turn, make, hold,* and *cut*. However, these studies are slightly different and not so fully descriptive. Therefore, I would like to investigate more deeply to determine the most common base verbs of the phrasal

verbs in a more descriptive way, using the BNC and the Corpus of Contemporary American English (COCA), and to clarify the differences between spoken and written as well as British and American usages after subcategorizing the main types of verbal meanings.

2.2 Syntactic and phonological characteristics

VPCs, which include both phrasal verbs and prepositional verbs, show various syntactic and phonological properties. This section reviews their typical characteristics, as pointed out in previous studies such as Baldwin and Villavicencio (2002), Bolinger (1971), and Darwin and Gray (1999), to grasp what VPCs are all about.

2.2.1 Characteristics shown by Baldwin and Villavicencio (2002) and Bolinger (1971)

Baldwin and Villavicencio (2002) identify the following (fairly coarse-grained) characteristics of VPCs:

1) Transitive VPCs have two kinds of configurations, namely, the "joined type," where the verb and the particle are adjacent and the NP complement follows, and the "split type," where the NP comlement is situated between the verb and the particle, as follows.

(2) a. She looked up the article. (joined)

b. She looked the article up. (split)

(3) a. Come with me. (joined)

b. *Come me with. (split) (*means ungramatical)

Thus, following this criterion, we can identify, for example, *look up* as a phrasal verb, but not *come with*, which is instead a prepositional verb.

2) Where the VPC is transitive pronominal, objects must occur between the verb and the particle in the split configuration. Consequently we can say *put them up* but not *put up them*, as follows.

(4) a. We put them up.

b. *We put up them.

3) Manner adverbs cannot occur between the verb and the particle, as follows:

(5) a. Look the article up hurriedly.

b.*Look hurriedly up the article.

In connection with these distinctions, Bolinger (1971) presents the following nine tests for phrasal verbs. Darwin and Gray (1999) examine them minutely in each respect.

1) Replacement: we can replace a verb＋particle combination with a single-word verb, such as *assume* for *take on* and *experience* for *take in*.

This test is problematic in two ways. First, many phrasal verbs do not have single-verb equivalents; examples are *take over* 'assume control' and *pay off* 'be worthwhile.' Second, most of us would consider *refer to* and *improve on* to be prepositional verbs (i.e., verbs in which the second part assumes the syntactic role of preposition); however, these combinations can be easily replaced by the single-word verbs *mention* and *improve*.

2) Formation of passives: transitive phrasal verbs generally occur in the passive voice.

However, similarly, if this should be taken as a criterion or more than a general rule, two problems seem to arise here. First, some transitive verbs do not form passives. Consider the following pairs in (6), which are cited from Quirk et al. (1985).

(6) a. The train picked up speed.

b. *Speed was picked up (by the train).

Second, not only phrasal verbs but also some prepositional verbs form passives, such as,

(7) The incident was alluded to.

3) Formation of action nominals: action nominals can be derived from transitive phrasal verbs. Therefore, one can derive the noun phrase *his bringing up of the facts* from the corresponding sentence *He brought up the facts*.

However, some transitive combinations do not form acceptable action nominal, as shown below:

(8) a. I *came across* an old photogragh.

b. *the *coming across* of an old photogragh

4) Object movement: the particle can be placed either before or after the direct object of the transitive phrasal verb.

(9) a. He looked up his friends.

b. He looked his friends up.

This test also can rule out prepositional verbs and free combinations correctly:

(10) a. Let's focus on the facts.

b. *Let's focus the facts on.

(11) a. She walked past the school.

b. *She walked the school past.

However, the problem arises in that some transitive phrasal verbs are inseparable:

(12) a. They came across a problem.

b. *They came a problem across.

Furthermore, object movement may sometimes cause changes in meaning:

(13) a. Why don't you run down the list? (review)

b. Why don't you run the list down? (find)

(14) a. I don't want to take on Jill. (hire)

b. I don't want to take Jill on. (challenge)

5) Pronoun placement: direct-object pronouns are placed before the particle in transitive phrasal verbs, as follows:

(15) a. Let's take them on in a game of chess.

b. *Let's take on them in a game of chess.

However, there are some inseparable transitive phrasal verbs, as shown in the following:

(16) Excuse me, Mr. Robber, should we tie up ourselves?

No, I'll tie up you and the rest. (Bolinger, 1971, p. 40)

6) Adverbial insertion: phrasal verbs do not allow the insertion of adverbs between the verb and the particle.

(17) ?The mine caved quickly in. (? means less acceptable) (Fraser, 1976, p. 4)

7) Stress: phrasal verbs tend to follow established patterns of stress.

(18) He FIGured OUT the problem.

He FIGured it OUT.

While prepositions do not usually receive stress, as follows:

(19) They WALKED to it.

But if a preposition is emphasized or contrasted, it can receive primary sentence stress.

(20) I said, "What are you looking UP, not what are you looking AT?"

In addition, bisyllabic prepositions, such as *after, upon, around*, and *over*, do receive some degree of stress.

8) Definite noun phrases: a particle precedes a simple definite noun phrases (a proper noun or *the* plus a noun phrase) without taking it as its object.

(21) a. They pushed in the door.

b. *They pushed inward the door.

c. Why don't you bring over John?

d. *Why don't you bring here John?

9) List: Bolinger (1971) defines phrasal verbs by simply listing them. However, the list is flawed since it does not consider dialectal differences, and it must easily become out of date, because phrasal verbs are productive.

2.2.2 Characteristics of phrasal verbs as shown by Darwin and Gray (1999)

Darwin and Gray (1999) give the following seven tests for phrasal verbs as alternatives to those

provided by Bolinger (1971):

1) Particle repetition: The repetition of a particle without its verb proper is not acceptable, while prepositions and adverbs may be repeated without the verb:

(22) a. *I looked up, up, up your name.

b. *I looked up your name, up her name, and up his name.

c. *Bring on the music, on the wine, and on the merriment.

(23) a. I looked up, up, up to the very highest point.

b. I looked up one aisle, then up the next.

c. They brought wine on one tray and cheeses on the next.

2) Where questions: If the particle retains its non-phrasal-verb meaning, *where* questions can be answered, whereas they cannot when a phrasal verb is used.

(24) a. He ran up the alley.

Where?

Up the alley.

b. I looked up the address.

Where did you look?

*Up the address.

3) Fronting: The particle in a phrasal verb should follow a verb, in contrast to prepositional verbs and adverbs, which are placed in either side of the verb to receive fronting, as follows:

(25) a. He made up a story.

*Up he made a story.

*Up a story he made.

b. Up the tree he went.

c. I came across the river.

Across which river did you come?

d. I came across a dollar.

*Across which dollar did you come?

e. The river across which you came is the Columbia.

f. *The dollar across which you came is mine.

4) Verb insertion: This test divides a potential phrasal verb by inserting an additional verb between the verb proper and the potential particle.

(26) a. He pulled on the lever, but it was stuck.

b. He pulled and jerked on the lever, but it was stuck.

c. I really messed up on my test.

d. *I really messed and fouled up on my test.

5) Adverb insertion: If a sentence with adverb insertion between a verb and a particle is acceptable, the combination is not a phrasal verb.

(27) a. *The mine caved quickly and forcefully in.

b. *I came suddenly and unexpectedly across an interesting article.

c. They crept slowly and silently down the hall.

6) Stress: Phrasal verbs follow the typical stress patterns of many verbs, requiring some degree of stress on the phrase-final syllable of the combination. This means that any verb + particle combination whose particle can be completely reduced cannot be a phrasal verb.

(28) a. She RAN UP a huge bill.

b. She RAN to the park.

7) Intonation units: A phrasal verb lies entirely within an intonational unit, so that a pause cannot be inserted in it, while pause insertion is permissible between verbs and prepositions or adverbs.

(29) a. *I passed / out in the doctor's office.

b. I hid / behind the door.

2.2.3 Passivization

Some prepositional verbs can receive passivization, while others cannot, as shown below (Darwin and Gray, 1999; Declerck, 1991). However, the reason for this situation has not been adequately clarified. Thus, it must be explained in a clearer and more explicit way.

(30) a. We'll have to account for these losses.

b. These losses will have to be accounted for.

c. I'm afraid a different line of action is called for.

d. The old man was nearly run over by a car.

(31) a. Many elderly people have to live on a small pension.

b. *A small pension has to be lived on by many elderly people.

c. Nobody agreed with the speaker.

d. *The speaker was not agreed with by anybody.

e. *My daughter's finals were not succeeded in by her.

f. *Drink was taken to by Gordon when he was still at school.

In addition, most of the verb ＋prepositional adjunct can receive passivization, such as in the case of some idiomatic combinations:

(32) a. Nobody has come to flat.

b. *The flat has not been come to.

c. No conclusion was come to. (idiomatic)

(33) a. *The church was gone into by the tourist.

b. The problem has not yet been gone into. (idiomatic)

c. This room hasn't been played in yet.

d. *The station was arrived at early.

e. The expected result was arrived at.

f. The cottage hasn't been lived in for some time.

Yasui (1996, p. 307) mentions that peripheral passive constructions can qualify to employ passivized nouns, and that the condition of any particular construction in this regard is language- and culture-dependent.

(34) a. The bed was not slept in.

b. The house was not lived in.

c. The chair was not sat on.

d. *The room was run in by the children.

e. *The room was waited in by them.

The author will follow Yasui (1996)'s observation and suppose that this kind of passivization shows ambiguity as a result of semantic phenomena.

2.2.4 Polysemy

It is often pointed out that like other verbs, phrasal verbs can be polysemous; consider for instance *check out* (Celce-Murcia and Larsen-Freeman, 1999; Nieda, 2006) or *make up* as in (35), which are cited from Nieda (2006, pp.39-40).

(35) a. Jane makes up stories to amuse her little brother. (to invent stories)

b. This would make up a part of her delight. (to form delight)

c. We need someone with experience of making up a page. (to compile)

d. She told me to make a bed up in the guest room. (to arrange)

e. She had to make up her income by teaching piano students. (to complete an amount to the level that is needed)

f. You must make up the time that you have wasted this afternoon, by working late tonight. (to repay the loss of the time)

It is further pointed out that this is preferable for language learning, because we can express various ideas using these easy words (Nieda, 2006).

2.2.5 Replacement

Phrasal verbs can be paraphrased into the corresponding one-word verbs. For example, *call off* sometimes means *cancel*. However, this is not always the case. Tani et al. (2001, p.37) point out the following difference between *call off* and *cancel*: phrasal verbs such as *call off* are used in a more subjective context, and verbs such as *cancel* are used in a more objective context.

(36) a. *call off the contract (* means ungrammatical)

b. call off the strike

c. *cancel the strike

d. cancel the contract

2. 3 Gradient analysis

In this chapter, the author clearly defines the English verb-particle combinations dealing with some of the linguistic properties of both the prepositional and phrasal verbs. Various researchers have argued that phrasal verbs are semantically gradient although they approve three distinctive categories such as literal, aspectual, and idiomatic as Fukui (2006) suggests. It is proposed that prepositional verbs are semantically in the same scale-class as idiomatic phrasal verbs although they are syntactically different in many ways. In the course of discussion, the appropriateness of the syntactic and semantic gradience of this kind of constructions is analyzed by using a corpus. And it is also revealed in this study that the borderline between them (e.g. adverbial vs. prepositional, aspectual vs. nonaspectual, literal vs. figurative) is not always clear and that we need to examine them carefully using the cognitive approaches combined with corpus research or other methods. As a result, it is suggested that this gradient analysis is applicable even to the meaning of the words by expanding their metaphorical connotations from concrete to abstract or idiomatic.

2. 3. 1. Particles

The term ‘particles’ was once introduced by Jespersen (1927) as one part of speech including adverbs, prepositions, conjunctions, and interjections, but now in the case of phrasal verbs it mainly means adverbs and prepositions. Historically speaking, a number of prepositions are said to be derived from spatial adverbs, and Sasaki (2000) argues that post-verbal particles have emerged from directional prefixes of the verbs, considering the historical development of particles.

In present-day English, particles, such as *up*, *down*, *in*, *over*, and *on*, are words functioning as both prepositions and particle adverbials (Declerck, 1991). In this connection, particles are classified into the following three groups, that is, (37a) prepositions only, (37b) spatial adverbs only, and (38c) those which can be either prepositions or spatial adverbs (Quirk, Greenbaum, Leech, & Svartvik, 1985).

(37) a. against, among, as, at, beside, for, from, into, like, of, onto, upon, with, etc.

b. aback, ahead, apart, aside, astray, away, back, forward(s), home, in front, on top, out<AmE>, together, etc.

c. about, above, across, after, along, around, by, down, in, off, on, out<BrE>, over, past, round, through, under, up, etc.

As Gardner and Davies (2007) investigated these using the BNC, it is observed that the particles of the phrasal verbs have a kind of semantic gradation between adverbs and prepositions as shown in Table 1.

Table 1

Frequency of 16 adverbial particles (AVPs) in BNC

Form	Total tags	# as AVP	% as AVP
out	149,727	145,706	97.3
up	180,792	158,064	87.4
down	91,832	72,709	79.2
back	97,154	75,233	77.4
off	67,479	37,751	55.9
round	30,821	10,895	35.3
along	18,555	4,925	26.5
over	128,304	32,526	25.4
around	43,391	10,384	23.9
on	705,790	54,956	7.8
through	81,184	5,797	7.1
about	705,790	12,587	6.6
in	1,845,077	34,411	1.9
under	60,049	313	0.5
by	504,969	371	0.1
across	24,053	13	0.1
Total	4,219,792	656,641	15.6*

Note. # = token frequency. * = Average of column. Gardner & Davies (2007, p.346)

This gradience of the adverbial degree can be formulated as follows:

(38) more adverbial>out.>up>down>back>off>round>along>over>around>on>

through>about>in>under>by>across> less adverbial

This is also expressed in the following Figure 1:

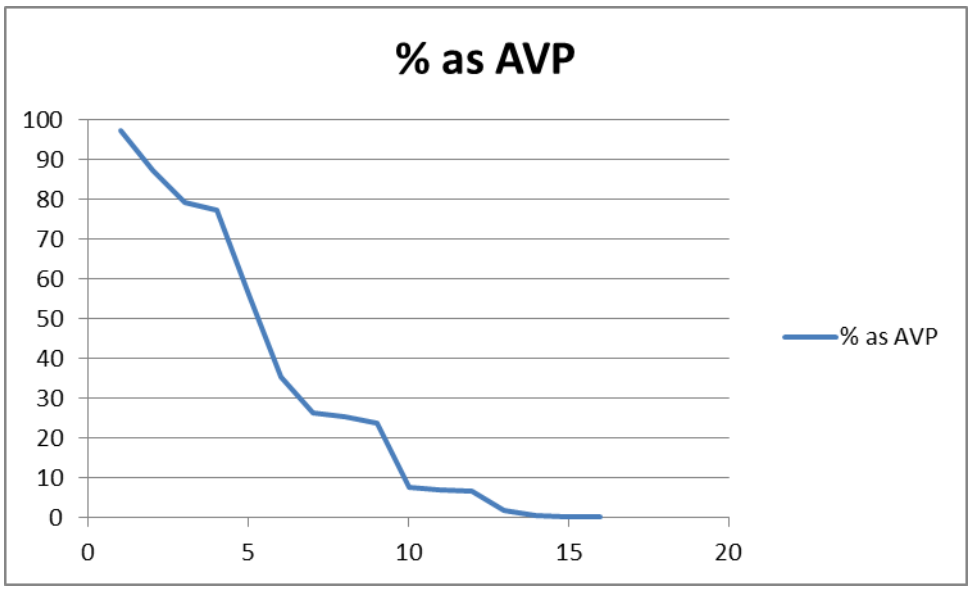

Figure 1. The gradience of the adverbial degree of the 16 selected particles in BNC corpus. AVP is short for adverbial particles. This is based on Gardner & Davies (2007, p.346).

In comparison with Japanese EFL learners, the tendency of the usage of the particles used in the JEFLL corpus is shown in the following Table 2.

Table 2

Frequency of the adverb and preposition forms of the VPC particles in JEFLL corpus

Form	adverb		preposition	
	# as AVP	% as AVP	# as PREP	% as PREP
*away	236	100.0	0	0.0
back	401	100.0	0	0.0
up	1496	98.6	22	1.4
out	1248	97.1	37	2.9
down	179	93.2	13	6.8
off	27	58.7	19	41.3
over	64	44.4	80	55.6
around	92	36.8	158	63.2
along	10	34.5	19	65.5
through	7	12.7	48	87.3
across	1	10.0	9	90.0
about	86	8.4	1028	91.6
on	132	7.3	1673	92.7
under	3	4.7	61	95.3
in	294	3.5	8197	96.5
by	40	2.4	1593	97.6
round	0	0.0	1	100.0
*with	0	0.0	2532	100.0

Note. * means additional examples and PREP stands for preposition.

So, this could be formulated as follows:

(39) adverb=away, back>up>out>down>off>over>along>around>about>through>
across>on>under>in>by>round, with=preposition

This is also visualized in the following Figure 2:

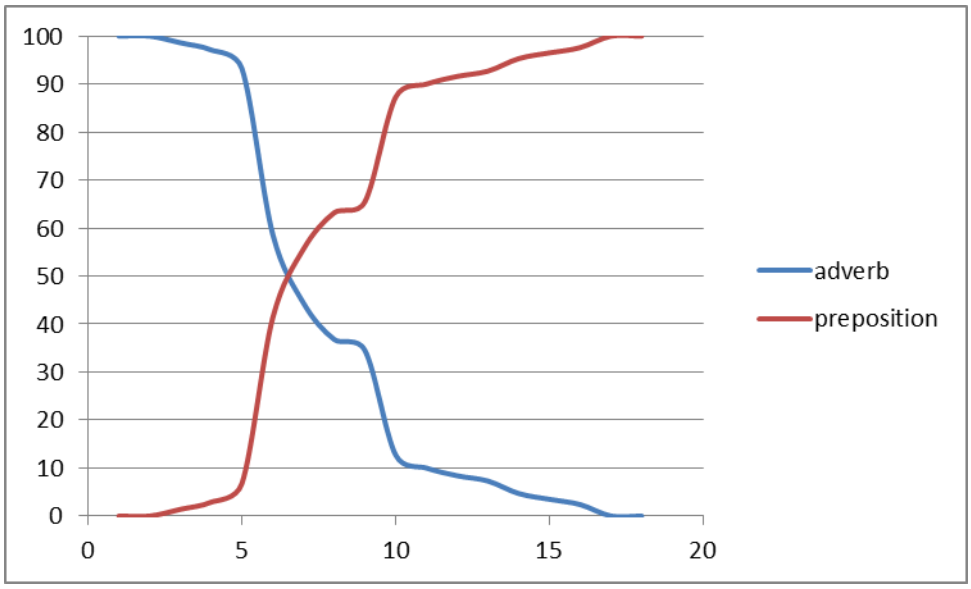

Figure 2. Adverbial and prepositional degree of the selected particles in JEFLL corpus. The figures in the vertical axis mean percentages of each item, and the ones in horizontal axis mean 18 selected particles.

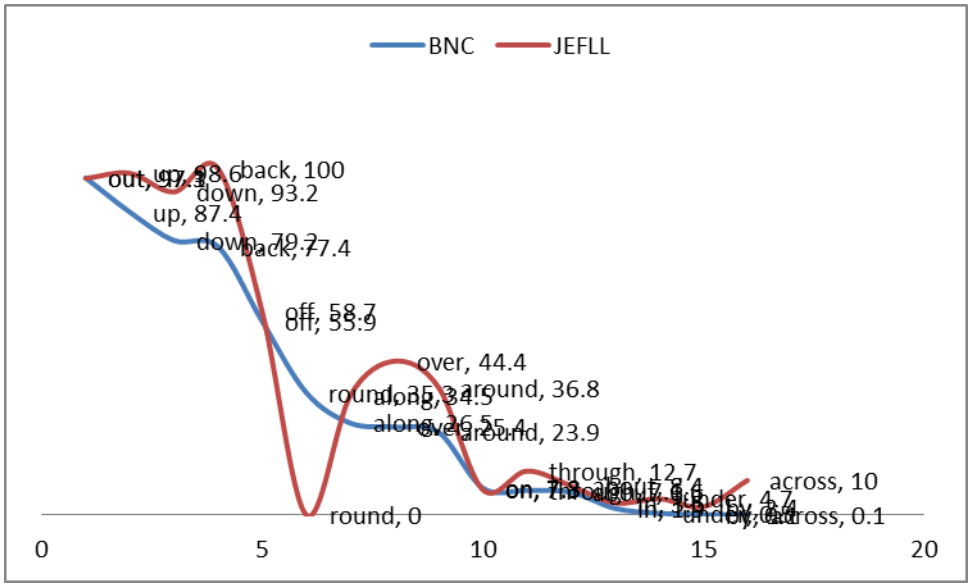

Figure 3. Comparison of the degree of adverbials between BNC and JEFLL corpus. 18 selected particles such as out, up, down, and others, are compared with reference to percent as adverbials.

This comparison in Figure 3 shows that, in both the native speakers' corpus (BNC) and the non-native speakers' corpus (JEFLL), certain forms such as *out, up, down,* and *back* tend to occur more often as adverbial particles than as prepositions. In contrast, certain others, like *under, by,* and *across*, function less often as adverbial particles and are more commonly used as prepositions. As shown in Figure 3, adverbial degrees appear almost common in both the BNC and the JEFLL. In the JEFLL corpus, the particle *round* appears only once, and only as an adverbial form (i.e., there are zero prepositional uses), so the graph in Figure 3 seems rather distorted and the red line in fact looks squiggled and winding much.

2.3.2 Particle list for the VPCs

Concerning particles, Fraser (1974, p.4) says that only 16 words have been observed to function as particles:

(40) about, across, along, around, aside, away, back, by, down, forth, in, off, on, out, over, up

While Kennedy (1920) cites the 16 particles which follow and says that *up* and *out* are the most important, the reason why *up* and *out* are the most important is not clearly stated.

(41) about, across, (a)-round, at, by, down, for, in, off, on, out, over, through, to, up, with

Likewise, Leech (1996) cites the following 17 particles.

(42) about, across, along, around, away, back, by, down, foreword, in, off, on, out, over, through, under, up

Shimada (1985) cites the following 17 particles as typical ones:

(43) about/around, across, along, aside, away, back, by, down, in, off, on, out, over, through, under, up

Bannard (2002), on the other hand, deals with as many as 60 particles:

(44) about, above, abroad, across, after, afterward, afterwards, against, ahead, along, among, around, aside, astray, at, away, back, backward, backwards, before, beforehand, behind, below, beside, between, beyond, by, down, during, facing, forth, forward, from, hither, in, into, near, nearby, off, on, onto, out, over, past, since, thereabouts, through, thru, throughout, to, toward, towards, under, up, upon, upstairs, via, with, within, without

Collins Cobuild Phrasal Verbs Dictionary (2006) lists 48 particles as follows:

(45) aback, about, above, across, after, against, ahead, along, among, apart, around, as, aside, at, away, back, before, behind, below, beneath, between, beyond, by, down, for, forth, forward, from, in, into, of, off, on, onto, out, over, overboard, past, round, through, to, together, towards, under, up, upon, with, without

And the *Oxford Phrasal Verbs Dictionary for Learners of English* cites the following 46 particles:

(46) aback, about, above, across, after, against, ahead, ahead of, along, among, apart, around, as, aside, at, away, back, before, behind, between, by, down, for, forth, forward, from, in, into, of, off, on, onto, out, out of, over, past, round, through, to, together, towards, under, up, upon, with, without

Based on these lists of particles, Table 3 represents the percentage of three-group particle

categories in each part of the literature, that is, those adverbial only, those prepositional only, and those which can be either prepositions or adverbs. This shows that researchers tend to pay more attention to adverbs when studying VPCs. Therefore, more attention needs to be paid to the prepositional side of the VPCs.

Table 3

Percentages of three-group particle categories in the previous studies

	Fraser (1974)	Kennedy (1920)	Leech (1996)	Shimada (1985)	Gardner and Davies (2007)	Bannard (2002)	*CCPVD*	*OPVDLE*
adverbial only	4 (25.0%)	0 (0%)	3 (17.6%)	3 (17.6%)	1 (6.3%)	15 (25.0%)	13 (27.1%)	10 (21.7%)
adverb or preposition	12 (75.0%)	12 (75%)	14 (82.4%)	14 (82.4%)	15 (93.8%)	30 (50.0%)	22 (45.8%)	21 (45.7%)
prepositional only	0 (0%)	4 (25%)	0 (0%)	0 (0%)	0 (0%)	15 (25.0%)	13 (27.1%)	15 (32.6%)
total	16 (100%)	16 (100%)	17 (100%)	17 (100%)	16 (100%)	60 (100%)	48 (100%)	46 (100%)

2.3.3 Particle classification

Bannard (2002) classifies the possible particles into three (overlapping) classes — (47a) those concerning temporal position, (47b) those concerning spatial direction and (47c) those concerning spatial position. The items belonging to each class are shown as follows:

(47) a. Temporal position: after, afterward, afterwards, before, during, since, beforehand, throughout, at, past

b. Spatial-direction: across, along, around, away, back, backward, backwards, down, forth, forward, from, hither, onto, through, thru, to, toward, towards, up, via, aside, into, about, against, ahead, astray, at, beyond, in, off, on, out, over, past

c. Spatial-position: about, above, abroad, against, ahead, among, astray, behind, below, beside,

between, beyond, by, facing, in, near, nearby, off, on, out, over, past, thereabouts,

throughout, under, upon, upstairs, within, without, at, with, across

A number of items are included in more than one group (e.g. *out* is in both the spatial direction and position group and *past* is in all three). One interesting thing to note is that the particles that are attested seem only to be those concerning spatial position and direction, which might be a useful observation when we come to constrain substitution. It seems useful to sort the spatial words into two categories, for example, *in* would seem to be available as both direction and location, a word like *back* can only refer to direction and not position.

In this connection, Nieda (2006) says that the most frequently used particles are *up*, *out*, *on*, *in*, *off*, and *down*, respectively, according to Biber et al. (1999, p. 413). And she argues that this fact proves that these particles show the most basic cognitive prototype, namely, static and dynamic directions, or changing positions, to enlarge the meaning.

2.3.4 Summary

In this section, one word, like a particle, has been seen functioning in two or more ways, i.e. particles as both adverbials and prepositionals, spatial words as directional and positional, and so on. This analysis shows that there are apparently some kinds of gradients between these functions, as shown in Tables 1 and 2. It was also shown that many researchers such as Fraser (1974) are more concerned with adverbial particles rather than prepositional or prepositions when they study VPCs. Enough research, therefore, has not been done on the kinds of relationships between dual or multiple functions, so it seems significant to proceed to study more in this field. In other words, more research needs to be done concerning the insufficient statement on these functional gaps which are evident in the literature. Thus, these gaps which need to be filled require more specific formulation.

2.4 Verbs of the VPCs

2.4.1 Verb list for the VPCs

Kennedy (1920) shows the typical 20 (or 25) verbs of the phrasal verbs and says that verbs *put, set, get,* and *take* are the most important:

(48) back, blow, break, bring, call, come, fall, get, give, go, hold, lay, let, make, put, run, set, take, turn, work(, do, fix, look, pull, shut)

He also shows that these 25 verbs make up nearly 200 phrasal verbs and provide over 1,000 different meanings.

Whereas the *Collins Cobuild Phrasal Verbs Dictionary* gives us the next 38 verbs as the typical VPCs:

(49) break, bring, call, cast, come, cut, do, fall, get, give, go, hang, hold, keep, kick, knock, lay, lie, live, look, make, move, pass, play, pull, push, put, run, send, set, sit, stand, stay, stick, take, talk, throw, turn

Nieda (2006) classifies the verbs cognitively as below:

(50) MOTION: bring, carry REST: sit, stand

AFFECT: cut, kick GIVE: give, get

MAKING: make, let OTHERS (neutral): be, do

And she points out, these are all verbs of motion so that they can easily enlarge their meanings metaphorically. She also states that most of the verbs are monosyllabic, sometimes bisyllabic Germanic words, so that it sounds phonologically easy to pronounce with the particles.

2.4.2 Verb -particle classes

Bannard (2002) postulated four verb-particle classes as follows:

(51) Both the verb and the particle contribute their simplex meaning (e.g. *force out, take back*).

(52) The verb but not the particle contributes its simplex meaning (e.g. *speak out, buy up*) .

(53) The particle but not the verb contributes its simplex meaning (e.g. *shell out, ward off*).

(54) Neither the verb nor the particle contributes its simplex meaning (e.g. *hammer out, snap up*).

According to his postulation, a set of 180 VPCs were annotated-based on this scheme, and this can be used as a gold-standard set for first testing the intuitions underlying the features and then training and testing a classifier. It seems, however, rather difficult for non-advanced EFL learners to apply this scheme accurately because of their lack of vocabulary. Thus it would be interesting to compare their testing results with non-advanced EFL learners' if possible.

2.4.3 Summary

In this section, the author deals mainly with verbs of the VPCs, showing some of the typical verbs used in this construction. The author also shows verb classifications proposed by Nieda (2006) and Bannard (2002) as examples, presenting their outlines and problems briefly. In order to show typical verbs, it might be useful to investigate frequent VPCs using the native corpus. It seems that the cognitive approach proposed by Nieda (2006) would provide meaningful insights into the polysemy of the verbs. I will also investigate more basic verbs with this kind of classification in future research although this section provides only a small number of basic verbs because of the limited by space.

2.5 Various approaches to the VPCs

2.5.1 Particle functions

There are literal combinations of a verb and a directional particle, whose meaning is transparent, such as *sit down, hand out, carry out, fall down,* and *stand up,* where particles seem to be dispensable, which Fraser (1974) calls "systematic" as his newly invented term. Fraser (1974) shows other examples as follows.

(55) a. hide away **=** to hide e. seek out **=** to seek

b. dent in = to dent f. fatten up = to fatten

c. level off = to level g. hurry up = to hurry

d. cool down = to cool

Cobuild Dictionary defines the following phrasal verbs in the same way:

(56) a. Add up means the same as add.

b. Coil up means the same as coil.

c. Finish off and, –in American English, –finish up mean the same as finish.

d. Start up means the same as start.

e. Swell up means the same as swell.

Thus, *Cobuild Dictionary* defines that *stand up* means the same as *stand* as in (3) where we seem to be able to replace *stand* with *stand up* freely:

(57) a. We walked, standing up, for an hour.

b. When I walked in, they all stood up and started clapping.

c. I *stood* to go to the dining car. (stood = stood up)

However, this seems to result in overgeneralizing that verb-particle combinations always mean the same as the corresponding verbs. Namely, it seems to me that this is not always applicable for all cases. Consider the next sentences.

(58) a. Sit down. b. Sit! (to a dog)

c. Come. d. Come in.

e. Come on in.

In (58), sentences like *Sit down* are usually addressed to people whereas *Sit* is mainly to a dog, not a human, from a functional point of view. Another example is exemplified by sentences like (58c), *w*here people can understand that it means the same as *come in* if we are in the proper context, *e.g*. someone utters this statement in the room and we are right outside the room. But it requires some imagination and, in that sense, sentences like (58d) are more polite and preferable. And

sentences like (58e) are by far more kind and considerate because particles like *on* and *in* are concrete enough to take action.

2.5.2 Aspectual particles

Jackendoff (2010) takes up particles such as *up, away, on*; V *over,* V *through* as typical aspectual ones. Besides them, *out* is also typical as Uchikiba (2005) mentions. Celce-Murcia and Larsen-Freeman (1999, pp. 432-433) state that aspectual phrasal verbs can be subdivided into a certain number of semantic classes, depending on the semantic contribution of the particle as in (59) through (62):

(59) Inceptive (to signal a beginning state)

John took off.

(Others: set out, start up)

(60) Continuative (to show that the action continues)

—use of *on* and *along* with activity verbs

a. Her speech ran on and on.

b. Hurry along now.

(Others: carry on, keep on, hang on, come along, play along)

—use of *away* with activity verbs with the nuance that the activity is "heedless"

c. They danced the night away.

(Others: work away, sleep away, fritter away)

—use of *around* with activity verbs to express absence of purpose

d. They goofed around all afternoon.

(Others: mess around, play around, travel around)

—use of *through* with activity verbs to mean from beginning to end

e. She read through her lines in the play for the audition.

(Others: think through, skim through, sing through)

(61) Iterative (use of *over* with activity verbs to show repetition)

He did it over and over again until he got it right.

(62) Completive (uses particles *up, out, off,* and *down* to show that the action is complete)

—turns an activity verb into an accomplishment

a. He drank the milk up.

(Others: burn down, mix up, wear out, turn off, blow out)

—reinforces the sense of goal orientation in an accomplishment verb

b. He closed the suitcase up.

(Others: wind up, fade out, cut off, clean up)

—adds durativity to a punctual achievement verb

c. He found out why they were missing.

(Others: check over, win over, catch up)

Here *burn up* and *burn down* are not antonyms. *Up* has a positive "goal completion" meaning versus *down* or *out*, which have a more negative "complete extinction" meaning. Certain aspectual particles co-occur with certain verbs. *Fade out* is acceptable, but **fade up* is not. This means aspectual particles are noncompositional.

2.5.3 Aspects of phrasal verbs

Durative (or imperfective) verbs like *stand* become momentaneous (or ingressive) when followed by adverbs (Otsuka, 1974, p.111). For example, consider verbs like *stand, hit, lie, go,* and *look.* The following examples in (63) are cited from Kitamura (1956).

(63) stand up, sit down, lie down, go off, look up (momentaneous or ingressive)

a. He stood up. b. He sat down.

c. He dozed off.

Similarly, durative verbs like *read* become terminative when followed by adverbs like *through, up*, and *out.*

(64) read through (up), eat up, stand out (terminative)

In this way, particles change not only the meaning of the verbs but also the aspect.

2.5.4 Case of verb "climb"

It is suggested by Suzuki and Yasui (1994, p.67) that phrasal verbs like *climb up* are verbs of activity and *climb* and *climb up* sometimes seem to have the same meaning. So *Cobuild Dictionary* defines these as having the same meaning. But they are, in fact, different from an aspectual point of view. Consider the following sentences (65), where all the example sentences are cited from Konishi (1980). The asterisk mark (*) in each sentence represents that the sentence is ungrammatical.

(65) a. John climbed up the Matterhorn.

b. John climbed the Matterhorn.

c. John climbed up the Matterhorn and only got halfway up.

d. *John climbed the Matterhorn and only got halfway up.

e. John climbed the Matterhorn but only got halfway up.

As shown in (65d), sentences like *climb the Matterhorn* become ungrammatical followed by *and only got halfway up,* because the verb *climb* is a verb of accomplishments which has a semantic feature of telicity.

Furthermore, particles like *up* contain the meaning of completeness, so that it cannot have a progressive form as in (66a) while directional particles like *upward* can as in (66b). Both of (66a) and (66b) are cited from Konishi (1980).

(66) a. *He was climbing up. b. He was climbing upward.

c. He was climbing up the mountain.

It should be noted that when the particle *up* loses the meaning of completeness it becomes acceptable as in (66c), in which the particle *up* functions as a preposition, not an adverb.

According to Elenbaas (2013), telicity is closely related to resultativity. Telic aspect expresses an endpoint or change of state and therefore a result. Thus, when particles contribute telic aspect, they also express a result. Indeed, many English VPCs have a resultative meaning expressing an event (denoted by the verb) whose endpoint (denoted by the particle) has been reached.

2.5.5 Semantic scale with respect to particle position

Even in the field of phonology, phrasal verbs tend to follow the patterns of single-word verbs. Bolinger (1971) postulates that this flexibility in particle placement may be a result of phonological need, allowing a movement in stress to match speech rhythm. Interestingly, he also notes that the joined construction may be more favored when the sense of the particle is not literal. This means implicitly that particle movement is related with not only phonological but also semantic need, that is, idiomaticity. The question mark (?) in each sentence means that the sentence is less acceptable. The following example sentences (67) and (68) are both cited from Ando (2005).

(67) a. He had given up hope.

b. ?He had given hope up.

(68) a. They laid down their arms.

b. ?They laid their arms down.

As seen in sentences (67) and (68), Fukui (2006) points out that idiomatic VPCs find it more difficult to take the verb-noun-particle order than literal VPCs, using his newly-postulated semantic scale analysis as shown in (69), which are cited from Fukui (2006, p.113).

(69) Idiomatic VPCs — Aspectual VPCs — Literal VPCs

*C1	??C1	?C1	C1	C1
C2	C2	C2	?C2	*C2

His semantic scale (69) results from a careful observation of sentences (70), which seems to indicate the semantic degree of idiomaticity. The following sentences *a* through *j* in (70) are all referred to as such examples of the scheme (69) in Fukui (2006).

(70) a. *He eked his income out. (C1) (Idiomatic) (Farrell, 2005, p. 107)

b. He eked out his income. (C2) (Idiomatic) (Ibid.)

c. ???John threw the dinner up (C1) (Idiomatic) (Fukui, 2006, p. 110)

d. John threw up the dinner. (C2) (Idiomatic) (Ibid.)

e. ?John ate the food up. (C1) (Aspectual) (Fukui, 2006, p. 111)

f. John ate up the food. (C2) (Aspectual) (Ibid.)

g. John threw the garbage away. (C1) (Literal) (Fukui, 2006, p. 109)

h. ?John threw away the garbage. (C2) (Literal) (Ibid.)

i. I could hardly tell the two of them apart. (C1) (Literal) (Farrell, 2005, p. 108)

j. *I could hardly tell apart the two of them. (C2) (Literal) (Ibid.)

k. *Come me with. (Prepositional verb)

l. Come with me. (Prepositional verb)

Here it is observed that prepositional verbs show the same grammaticality as idiomatic VPCs, so we can add them in the same scale-class as idiomatic ones.

Fraser (1974) argues that verbs without initial stress prefer construction 1 as in the following (71), which are cited from Gries (2001, p.34).

(71) a. John picked up the book. (Construction 0)

b. John picked the book up. (Construction 1)

According to Gries (2001), in the following sentences (72) through (74) *b*-sentences are more preferable to *a*-sentences in the case of the spoken context, but *a*-sentences in the case of the written one. He states that particle movement is related to the four aspects, namely, phonological, morphosyntactical, semantical, and discourse-functional.

(72) a.? I will insult back the man.

b. I will insult the man back.

(73) a. ?We converted over the heating to steam.

b. We converted the heating over to steam.

(74) a. ?They attached up the tag on the wall.

b. They attached the tag up on the wall.

Yasui (1996, p. 392) and Ando (2005, p. 742), on the other hand, treat this kind of grammaticality as one of the phenomena of the information structures in the discourse. They argue that normal sentences should have the old-to-new information orders. So this might be related to stylistic and pragmatic factors as well.

2.5.6 Various syntactic and semantic classification

According to Uchikiba (2005), VPCs can be syntactically divided into two types, transitives and intransitives. As shown in (75), which are cited from Uchikiba (2005, pp. 48-57), intransitives are subdivided into literal and idiomatic, while transitives are subclassified into three groups on the basis of the position the particle occupies (Group A, Group B, and Group C); the particle can occur on either side of the direct object noun phrase (Group A), the particle has to be shifted to follow the noun phrase (Group B), and the particle has to be placed before the object noun phrase (Group C). Furthermore, Group A can be divided into three types in terms of semantics and pragmatics. In Group A-1, both the verb and the particle retain their individual lexical meanings. In A-2, the verb alone retains its lexical meaning while the particle is used as an intensifier or as an aspectual marker of perfectivity in the sense of completion. In Group A-3, the verb and the particle are fused into a new idiomatic combination. In addition, he argues that idiomatic VPCs can also be subcategorized into three types on the basis of the position of the particle (Group D, Group E, and Group F); the particle can either precede or follow the object noun phrase (Group D), the particle follows the noun

phrase (Group E), and the particle precedes the noun phrase (Group F).

(75) a. The guests came in. (Literal intransitive)

b. The enemy gave in. (Idiomatic intransitive)

c. John carried the trunk up. John carried up the trunk. (Group A-1)

d. I'll cut up the meat for child. typical; up, out (Group A-2)

e. He turned that job down. He turned down that job. (Group A-3)

f. She pulled the blind up and down. (Group B)

g. They put off studying. *They put studying off. (Group C)

h. Have you made your mind up yet (Group D)

i. blow oneself out, live it up , beat one's brains out (Group E)

j. cast on stitches, fill in time, keep up heart, (Group F)

Wurmbrand (2000) claims that VPCs fall into two classes semantically, that is, transparent and idiomatic. And idiomatic phrasal verbs are supposed to be composed of semi-idiomatic and idiomatic categories in terms of their idiomaticity. Similarly, Waibel (2007) supposes transparent and opaque VPCs besides semi-opaque according to Laufer and Eliasson (1993). On the other hand, Shimada (1985) shows that phrasal verbs can be divided into four types, namely, literal, aspectual, idiomatic, and metaphorical.

Fraser (1974) also draws a distinction between systematic and unsystematic "figurative" VPCs. Jackendoff (2010) notes that the VPCs are classified as verb-particle idioms, directional particle constructions, aspectual particle ones, time-away ones, V/V-d out ones, and his head off family ones, respectively, as shown below.

(76) a. look up ('search for and find'), bring NP (e.g. a child) up (Verb-particle idioms)

b. go down, go out, toss up (Directional particle construction)

c. up, away, on; V over, V through (Aspectual particle construction)

d. Bill slept the afternoon away. (Time-away construction)

e. I'm (all) knitted/programmed out. (V/V-d out construction)

f. Fred talked his head off, but to no avail. (His head off family construction)

Celce-Murcia and Larsen-Freeman (1999) and Darwin and Gray (1999) describe three semantic categories of phrasal verbs: literal, idiomatic, and aspectual.

In summary, semantic categories of phrasal verbs in each study are roughly shown in Table 4.

Table 4

Semantic categories of phrasal verbs in the previous studies

Fukui (2006) Celce-Murcia and Larsen-Freeman (1999), Darwin and Gray (1999)	literal		aspectual	idiomatic
Uchikiba (2005)	literal		(aspectual)	idiomatic
Shimada (1985)	literal	metaphorical	aspectual	idiomatic
Jackendoff (2010)	directional		aspectual	idiomatic
Wurmbrand (2000)	transparent		(semi-idiomatic)	idiomatic
Waibel (2007) Laufer and Eliasson (1993)	transparent		(semi-transparent)	opaque
Fraser (1974)	systematic	unsystematic	(completive)	(figurative)

2.5.7 Semantic gradation

As for analyzing aspects of the particles, Bolinger (1971) warns that "one can easily indulge in aspect splitting (and get nowhere)" (p. 101) as Bannard (2002, p.5) cites. Bolinger (1971) relates the spatial with the aspectual usage of the particles, claiming that "there is no real borderline between non-aspectual and aspectual uses of the particles, but rather a gradient" (p. 98). Bolinger's (1971) description of a "semantic gradient from highly concrete meanings of direction and position to highly abstract meaning akin to aspects" (p. 110) is very useful when we analyze a large number of "phrasal

verbs", so that, in this paper, we would follow his idea of semantic gradience of the VPCs.

Gries (2003, p.16) also argues that "the meaning of a verb phrase cannot always be categorized as being either fully idiomatic or totally literal - rather there are many cases where the meaning is somewhere between these two extremes." And there is substantial literature within the "cognitive grammar" tradition which emphasizes this observation. Thus I will take this kind of cognitive analysis, but in order to make the meaning more explicit, I would need to add some criteria to elaborate the framework. To put it in another way, idioms contain both figurative and literal meaning, but there is a natural gradation between them (Bannard, 2002; Langacker, 1987; Talmy, 1988).

2.5.8 Corpus studies on VPCs

Since at least the late 1980s, researchers in the fields of linguistics, lexicography, second language acquisition (SLA), English language teaching (ELT), and other domains related to language, have acknowledged the significance of linguistic behaviors in sequences such as collocations (Palmer, 1965; Sinclair, 1991), lexical phrases (Nattinger and DeCarrico, 1992), multi-word items (Moon, 1997), phraseology (Cowie, 1998), lexical bundles (Biber, Johansson, Leech, Conrad, and Finegan, 1999), formulaic language (Wray, 2002), multi-word units (Nation, 2008), and phrasal verbs (Condon, 2008).

In the past ten years, more and more academic studies on such linguistic phenomena in English have been published; examples include Wray (2002), Sinclair, Jones, and Daley (2004), Granger and Meunier (2008), Wray (2008), and Barfield and Gyllstad (2009). A notable group of studies considers grammatical collocations such as combinations of verbs and particles (which can also be seen as MWVs)— "word combinations comprising a lexical verb and one or two particles" (Quirk et al., 1985, p. 1150).

MWVs are said to be frequently used by native speakers of English and are "prevalent in everyday language" (Quirk et al., 1985, p.1150); however, their acquisition is difficult for students of English as a second or foreign language, and learners avoid using them, as has been pointed out by researchers such as Cornell (1985), Dagut and Laufer (1985), Schmitt and McCarthy (1997), Biber et al. (1999), Liao and Fukuya (2004), Ishii (2006), and Yasuda (2010). A majority of previous SLA research on MWVs has been concerned with advanced learners of English. For example, Yoshitomi (2006) dealt with the use by advanced Japanese learners of English of phrasal verbs in a story-telling task. Likewise, Uchida (2012) dealt with the use of VPCs by non-advanced Japanese learners of English who were high school students. The focus of his study was 40 common phrasal verbs and prepositional verbs in an EFL learner corpus as acquired at different developmental stages—beginner, post-beginner, and pre-intermediate..

Particles are often albeit sometimes problematically categorized (Darwin & Gray, 1999), into two distinctive classes—prepositions and adverbial particles (or "special adverbs"). Examples of prepositional particles are *of*, *with*, *at*, *from*, and *like*; examples of adverbial particles include *back*, *away*, and *forward*. Uchida (2012) points out that most of the latter are rarely used by learners, especially non-native Japanese EFL learners.

There has been little research undertaken into the use of this construction by non-advanced learners. However, Uchida (2012) considers the problems learners have with MWVs or VPCs, including phrasal and prepositional verbs. The purpose of his study was to explore how young EFL learners with Japanese as L1 develop the use of verb-particle constructions, focusing on those common in a learner corpus, the JEFLL Corpus. The results revealed some features of non-native learners' use of VPCs at different developmental stages compared with that of native speakers of English as seen in the BNC.

Uchida's research questions were as follows: (1) Are there any similarities and differences in the frequency of 40 common MWVs in the writing of non-advanced Japanese learners of English at

different stages of learning? and (2) What causes these difference (if any) in the use of VPCs between young non-advanced EFL learners and native speakers of English? His approach to the use of VPCs is rather unique in that he used a corpus-based method and a statistical measure correspondence analysis (CA), like Tono (2000), which applied CA to the investigation of part-of-speech tag (POS) sequences by young Japanese learners of English.

The JEFLL Corpus is one of the few corpora compiling interlanguage used by young learners of English. It is an approximately 700,000-word collection of free compositions written by more than 10,000 Japanese junior and senior high school students. Uchida (2012) utilized a web-based search tool, the Shogakukan Corpus Network (SCN), to work with the JEFLL Corpus.

The participants from whom original JEFLL data was gathered had 20 minutes in class to write their opinions, ideas, experiences, or stories related to given topics, without the use of a dictionary. They were allowed to resort to Japanese if they could not express themselves adequately in English. The topics were “breakfast,” “dreams,” “earthquakes,” “festivals,” *otoshidama* (gift money), and *urashima* (a Japanese folk tale). The BNC, which was also accessible through the SCN, was used as a reference corpus—specifically a spoken subcorpus of 11,741,100 token words, somewhat less than twice as large as the JEFLL corpus.

At least five corpus-based frequency studies of phrasal verbs in native English have been conducted (Biber et al., 1999; Gardner & Davies, 2007; Liu, 2011; Tani, Horiike, Sugimori, & Tomita, 2001; Waibel, 2007); all have provided valuable information about phrasal verbs and their distribution patterns. There are, however, important limitations in these studies. First, they focus mainly on so-called phrasal verbs, and do not deal with prepositional verbs at all. Second, they are concerned with only a small number (up to 16) of particles, insufficient for the study of the relationship between phrasal and prepositional verbs. Third, limited by space and their research designs, most of their studies provide only the most common phrasal verbs, and only in lemmatized form, and none provides an examination of the various meanings of polysemous phrasal verbs across

various registers.

2.5.9 Experimental data of some phrasal verbs

There are four studies on the avoidance of phrasal verbs in literature, these are, Dagut and Laufer (1985), Hulstijn and Marchena (1989), Laufer and Eliasson (1993) and Liao and Fukuya (2004). Dagut and Laufer (1985) investigated Israeli learners' use of English, looking into the frequency of avoidance of three phrasal-verb types which were literal, figurative, and completive. Three groups of advanced Hebrew learners took three tests, namely, a multiple-choice test, a verb translation test, and a verb-memorizing test. The results showed that a majority of the learners avoided using the phrasal verbs, preferring the one-word verbs, and that avoidance was most evident with the figurative phrasal verbs. They contended that typological difference between Hebrew and English resulted in the avoidance. Hulstijn and Marchena (1989), therefore, used the same forms of elicitation tests with Dutch learners of English, getting two interesting findings. One was that not only structural differences between the L1 and L2 but also similarities between them affect the avoidance. The other is participants' tendency to adopt a play-it-safe strategy, preferring one-word verbs to general, multi-purpose meanings over phrasal verbs with specific, sometimes idiomatic meanings. In line with these studies, Laufer and Eliasson (1993) looked into the causes of avoidance, concluding that L1-L2 difference was the most influential factor.

Liao and Fukuya (2004), based on the previous studies, investigate the avoidance of English phrasal verbs by Chinese learners. Six groups of Chinese learners (intermediate and advanced; a total of 70) took one of three tests (multiple-choice, translation, or recall), which included literal and figurative phrasal verbs, while 15 native speakers also took the multiple-choice test. The results show that three factors (proficiency level, phrasal-verb-type, and test type) affect learners' avoidance of phrasal verbs. It may also be pointed out that the differences between first and second languages and the semantic difficulty of phrasal verbs may be reasons for the learners' avoidance.

In this way, Liao and Fukuya (2004) show us some elicitation tests of phrasal verbs used with Chinese EFL learners. These kinds of elicitation tests for Japanese EFL learners may be used as well to compare with Chinese learners in order to ascertain the common characteristics of non-native EFL learners.

Nakamoto and Yokozawa (2004) also conducted the same kinds of experimental research on phrasal verbs, using two kinds of test such as the gap-fill test and a True/False test. They provided evidence that repetition, deep processing, and task variation promoted the acquisition of phrasal verbs in long-term memory.

2.5.10 Summary

In this section I took up some of the syntactic and semantic problems of the VPCs such as aspectual usage and particle movement. Then I presented semantic scale analysis (69) and Table 4. The author pointed out the importance of semantic gradience when we deal with the VPCs, by citing Gries (2000) and other cognitive grammarians. The author also reviewed some of the corpus and elicitation approaches to English phrasal verbs, presenting some major factors for the avoidance of phrasal verbs in literature such as Liao and Fukuya (2004) in addition to some of the methodological problems about the previous corpus studies.

So far, I have argued that the meaning of phrasal verbs cannot always be categorized as being either fully idiomatic or totally literal, citing Gries (2000). The author has tentatively divided phrasal verbs as follows: (a) literal or directional—phrasal verbs whose meaning is a straightforward product of their semantic components: *go out, take away, come in* (b) figurative or idiomatic—in which a new meaning has resulted from a metaphorical shift of meaning and the semantic fusion of the individual components; *turn up, let down* (c) completive or aspectual—in which the particle describes the result of the action: *cut off, burn down.*

The author deals with particles mainly from a certain number of linguistic aspects. Particles

may be classified in a variety of minute ways, but syntactically they could be roughly divided into two functions, namely adverbial and prepositional ones. Thus, we need to know how particles are used from the aspect of language learning. Particle movement seems to be one of the very complicated linguistic phenomena. Native speakers can judge the grammaticality of this kind of phenomena intuitively, but non-natives may not be able to do precisely. Semantic scale (69) presented by Fukui (2006) may be one of the solutions, and probably we need to judge the degree of grammaticality, following the corpus approach. The author's proposal in (69) is that prepositional verbs are semantically in the same scale-class as idiomatic phrasal verbs although they are syntactically different in many ways. Furthermore, we observe the syntactic and semantic gradience between them, using corpus-based evidence.

Among VPCs, the main concern in this study, with much literature review, was phrasal verbs, so that prepositional verbs and phrasal prepositional verbs were not dealt with much. Quirk et al. (1985) syntactically classified particles into three groups, such as, adverbials, prepositionals, and both of them, but they did not investigate the actual percentage of each group. Hence this study clarified the percentage of the adverbial and prepositional particles, using corpus research, as shown in Tables 1 and 2. In the course of this research, I proposed a gradient analysis, and eventually presented a specific formulation (38) by using the BNC as a native corpus, based on the gradience of the adverbial degree. As stated in section 2.2., Kennedy (1920) pointed out that the two particles *up* and *out* are the most important among phrasal verbs, but he didn't present a definite reason. Uchikiba (2005) also took up these two as typical aspectual instances in (75), but the reason was also not clarified. The current study, on the other hand, clearly gives the reasons. First, the particles *up* and *out* are the most frequent in number and in percentage as shown in Table 1 and in formulation as well (38). Second, according to the formulation (38), they are more adverbial ones, that is, structurally closer to verbs, not nouns, which means that they are therefore closer to typical phrasal verbs. In other words, if particles are less adverbial or more prepositional,

they will be closer to object nouns, this in turn means that they are more like prepositional verbs. As shown in section 2.5.2, other than completive phrasal verbs there are a few types of aspectual verbs, such as inceptive, continuative, and iterative, but most of the researchers regard only completive as aspectual phrasal verbs. My study also clearly explains the reason why most researchers think of only completive as aspectual phrasal verbs. That is, a completive notion is related to this kind of typical verbal notion of the phrasal verbs and it is less connected to the nominal features of prepositional verbs. Fukui (2006) presents semantic scale analysis on phrasal verbs, using the notion of the degree of idiomaticity, and he mainly addresses phrasal verbs and not prepositional verbs. Corpus linguists such as Liu (2011) also focus mainly on phrasal verbs so that they do not deal with prepositional verbs. Table 3 shows that more attention is, therefore, needed to the prepositional side of the VPCs. Table 4 then shows that many researchers classify phrasal verbs into three types, but these distinctions are vague and not so clearly identified as Bolinger (1971) and Gries (2003) (see section 2.5.7) state. As in sentences (75) and (76) and section 2.5.6, it was also shown that in phrasal verbs, there are three kinds, which are literal, idiomatic and aspectual, although in prepositional verbs there are only two kinds; literal and idiomatic. As just mentioned, this is because phrasal verbs are close to verbs containing aspectual features, while prepositional verbs are close to nouns which lack aspectual ones. And, in the last place, it is suggested that these distinctions in question are gradient and my newly-established gradient analysis has the key to clarify them successively.

Other than aspectual features, phrasal verbs and prepositional verbs are not only syntactically but also phonologically different in many respects, that is, adverb insertion, stress patterns and intonational units and so on. But they sometimes show the same kind of linguistic behavior when they have idiomatic meanings, as in the case of particle movement as shown in (70) in section 2.5.5. Sinclair (1991) explains them by using the idiom principle which refers to figurative idioms. He also presents the open-choice principle which usually has a literal meaning. Therefore, besides

syntactic and phonological properties, we need to take into consideration the semantic properties of phrasal verbs such as idiomaticity or polysemy in a more explicit way. And this may lead to a deeper understanding of the different usage in the VPCs between native speakers and Japanese EFL learners. Besides this, I will make a comparison between them with respect to frequency analysis in the VPCs, supported by elicitation test data in further research. This will make the characteristics of the Japanese EFL learners' tendency of usage much clearer.

The aspect hypothesis (Andersen and Shirai, 1994) proposes that in the acquisition of tense and aspect (TA) morphology, language learners are initially influenced by inherent semantic aspect. Thus, perfective past emerges earlier with accomplishments and achievements, while the progressive appears with activities. Although this hypothesis has been extensively studied, there have been no analyses of the frequency, form, and function of relevant types and tokens in the input. Wulff, Ellis, Romer, Bardovi-Harlig, and Leblanc. (2009) explored tense and aspect morphology from the standpoint of frequency analyses and clarified that frequency, distinctiveness, and prototypicality jointly drive acquisition of tense and aspect morphology.

Meunier and Littre (2013) discuss the potential of combining learner corpus research with experimental studies in order to understand learner language development. The study deals with the acquisition of the English tense and aspect system by French learners. It reveals that over a period of 3 years, learners' tense and aspect errors decrease. However, the English progressive continues to present considerable learning difficulties, and in two follow-up experiments, the authors investigate which elaborations of the progressive epistemic schema L2 learners continue to find difficult.

Gries (2012) is concerned with statistical methods that apply "directly" to the methods of frequency lists, collocations, and dispersion. His methods of statistics combined with corpus linguistics seem to give us a new insight into English teaching.

Corpora are a primary source of data for the study of language use, and they offer tools and

methods for objectively analyzing linguistic data. However, the corpus approach has a clear disadvantage for the description of language use, since the exclusive use of corpus data would provide too narrow a basis for a profound study of relatively infrequent phenomena (Mönnink, 1997). In light of these limitations, elicitation tests with native subjects constitute an essential tool for enlarging corpus derived information and for investigating features not perhaps found in a corpus at all (Quirk and Svartvik, 1979). In this sense, elicitation test should be considered an essential source of complementary data. When an elicitation experiment is carefully designed to include both performance and acceptability judgment tests, it not only supplements corpus data, but it can also serve a wider purpose. As Greenbaum (1984) points out, elicitation tests have been devised to resolve these questions during the analysis of corpus material. Although their function is primarily supplementary, the results may also pose questions for further investigation through corpus searches or for additional elicitation experiments (Greenbaum, 1984).

Chapter 3 Preliminary Survey

In this chapter, I present a brief overview of the results of the high school teacher survey on educational problems related to English phrasal verbs. The description is partially related to Research Question 1 and highlights some of the teaching problems and insufficient materials in the current textbooks on phrasal verbs. To find out more about the needs of English language teachers with regard to instruction in phrasal verbs, I carried out a survey among 53 high school teachers—23 junior high school teachers and 30 senior high school teachers—in Gifu, Tokushima, Ehime, and Yamaguchi Prefectures, (thus, mostly in West Japan), in summer and autumn 2012. Their teaching experience varied from less than one year through almost thirty years.

The questionnaire consisted of 16 statements related to general educational topics such as the four core language skills (listening, speaking, reading, and writing) as well as rather specific ones such as grammatical problems relating to teaching English phrasal verbs. The detailed questions are shown in the appendix. With regard to methods of teaching phrasal verbs, many teachers had the students memorize phrasal verbs in sentences, as they thought the main reason phrasal verbs are difficult to memorize is that they can be similar to one another and easy to confuse. Most of the teachers thought there were insufficient materials in their textbooks on phrasal verbs as compared to other topics. They had difficulty giving adequate attention to phrasal verbs as a result, and felt that their students had not learned them well enough. They also think it difficult to teach speaking and writing skills fully enough to their students. However, they thought it important to give attention to phrasal verbs in class. In addition, they thought their students were poor at articles, prepositions, and relative clauses.

3.1 Background and methods

Some researchers have suggested that non-native speakers generally use phrasal verbs less frequently than native speakers do. This difference is sometimes attributed to L1 influence; that is,

English learners whose L1 lacks phrasal verbs (e.g., Hebrew) are thought to use relatively fewer phrasal verbs than native English speakers do, while learners whose L1 is rich in phrasal verbs (e.g., German) do not show the same disparity (Dagut and Laufer, 1985; Hulstijn and Marchena, 1989; Laufer and Eliasson, 1993; Liao and Fukuya, 2004). This explanation may partially account for Japanese learners' tendency to use fewer phrasal verbs. However, this paper explores factors besides mere linguistic aspects, focusing on educational aspects relating to English learners, especially teacher instructions and English textbooks, and asks whether or not these are, in fact, contributing factors to Japanese learners' relatively lower usage of English phrasal verbs.

In this study, the author investigates causes of educational environments and presents the results of teacher instructions and English textbooks relating to phrasal verbs. As a result, it shows general attitudes to English teaching as well as phrasal verbs of the high school teachers, considering the relationships of the uses of phrasal verbs between learner corpus and textbooks.

I conducted a survey on English teaching and phrasal verb instructions toward English teachers at junior and senior high school, using questionnaires made up by myself. It was done mainly in western Japan, such as Gifu, Tokushima, Ehime, and Yamaguchi prefecture, in July through November in 2012. It surveys 23 junior high school teachers and 30 senior high school teachers. Figure 4 indicates the teaching experience of teachers surveyed in western Japan. As Figure 4 shows, the teachers' classroom experience varies from less than five years to almost thirty years.

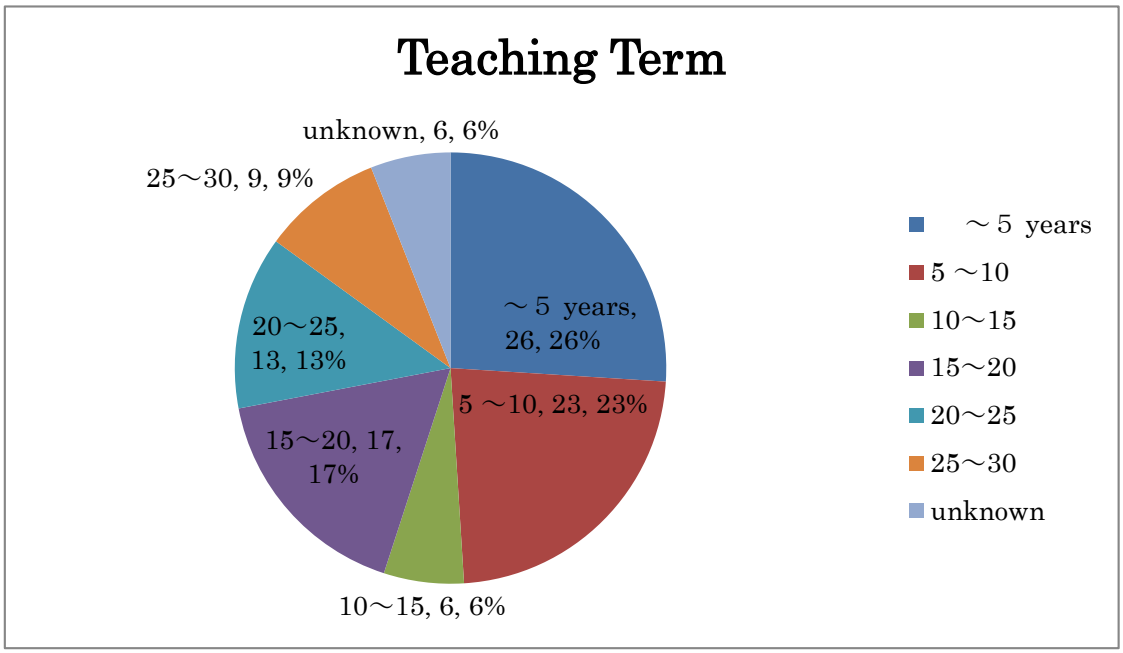

Figure 4. Teaching experience of the teachers. It indicates the teaching experience of 53 teachers surveyed in western Japan. They are composed of 23 junior high school teachers and 30senior high school teachers.

3.2 Results of the research questions

As for general educational questions, it was asked which was the weakest of four core language skills. Figure 5 shows the result. Many junior high school teachers answered *writing*, *grammar*, and *vocabulary*, while senior high school teachers answered *speaking*, *writing*, and *grammar*. Overall, they identify student weaknesses in *writing*, *speaking*, and *grammar/vocabulary* in that order.

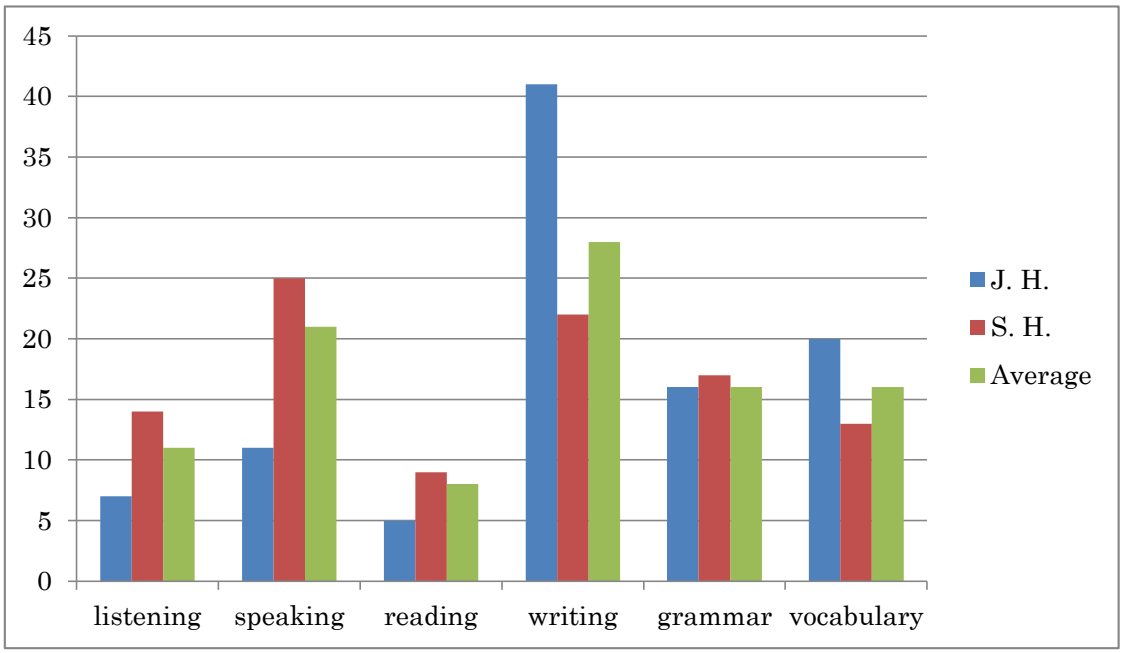

Figure 5. Teacher reports of students' weakest language fields. J. H. stands for junior high school and S. H. for senior high school. Figures represent percent.

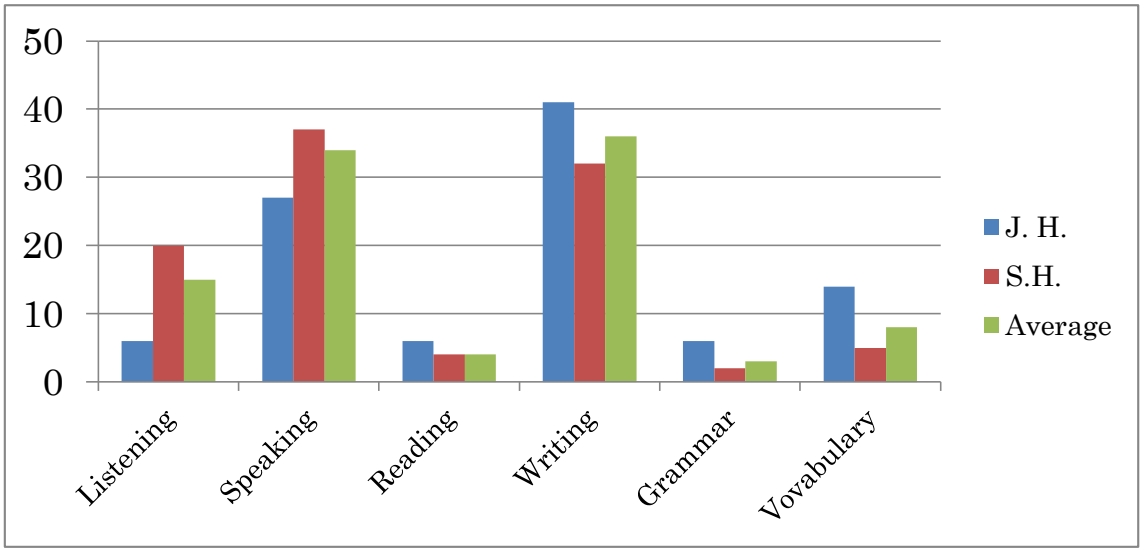

Figure 6. Language topics receiving insufficient teaching time. J. H. stands for junior high school and S. H. for senior high school. Figures represent percent.

Similarly, Figure 6 shows that most of the teachers think it insufficient to teach the students writing and speaking. On the other hand, Figure 7 shows that they take much time in reading and grammar but less time in writing and speaking. This is characteristic in senior high school rather than in junior high school.

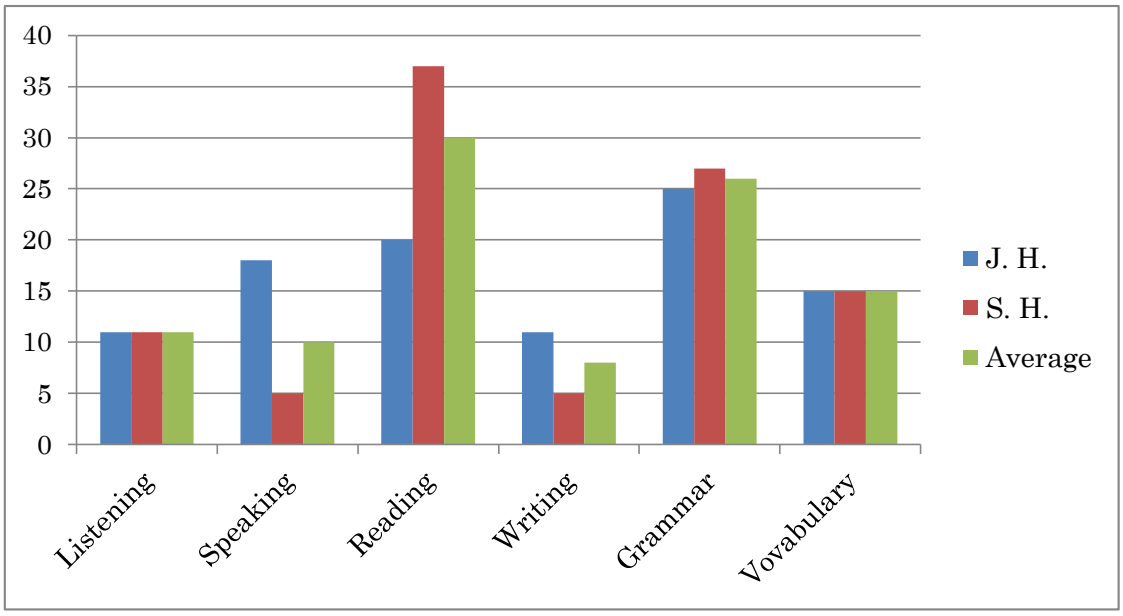

Figure 7. Language topics receiving sufficient teaching time. J. H. stands for junior high school and S. H. for senior high school. Figures represent percent.

This implies that the students are poor at writing and speaking because of their insufficient time of learning. Next, we asked the teachers what part of speech the students struggle most with, and the results are shown in Figure 8 below.

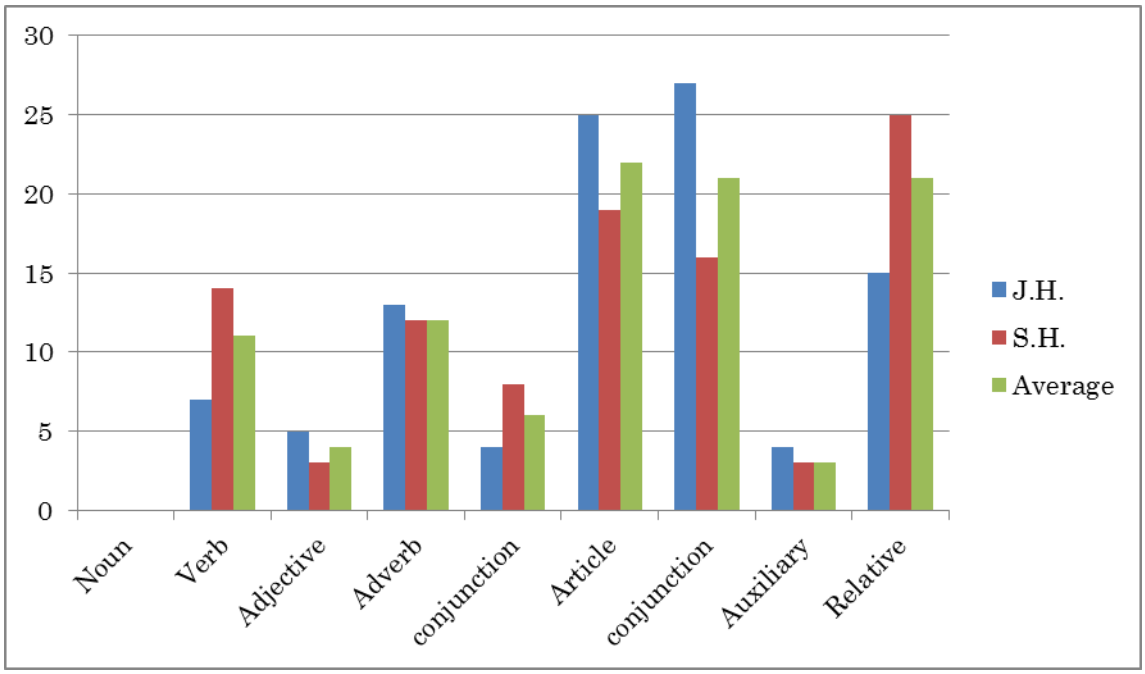

Figure 8. Students' weakest part of speech. J. H. stands for junior high school and S. H. for senior high school. Figures represent percent.

Most of the teachers answered that students struggle with articles, prepositions, and relatives. In particular, it is notable that teachers at junior high school answered particles and prepositions while senior high school teachers answered relatives. Nouns are apparently easy to introduce to the students because no teachers think that the students struggle with nouns. This is also in accordance with the results of Tono et al. (2013) stating that novice learners speak much with nouns and advanced learners speak more with verbs, rather than nouns. Next, as Figures 9 and 10 show, teachers report that students do not understand phrasal verbs well enough and that they do not use them often.

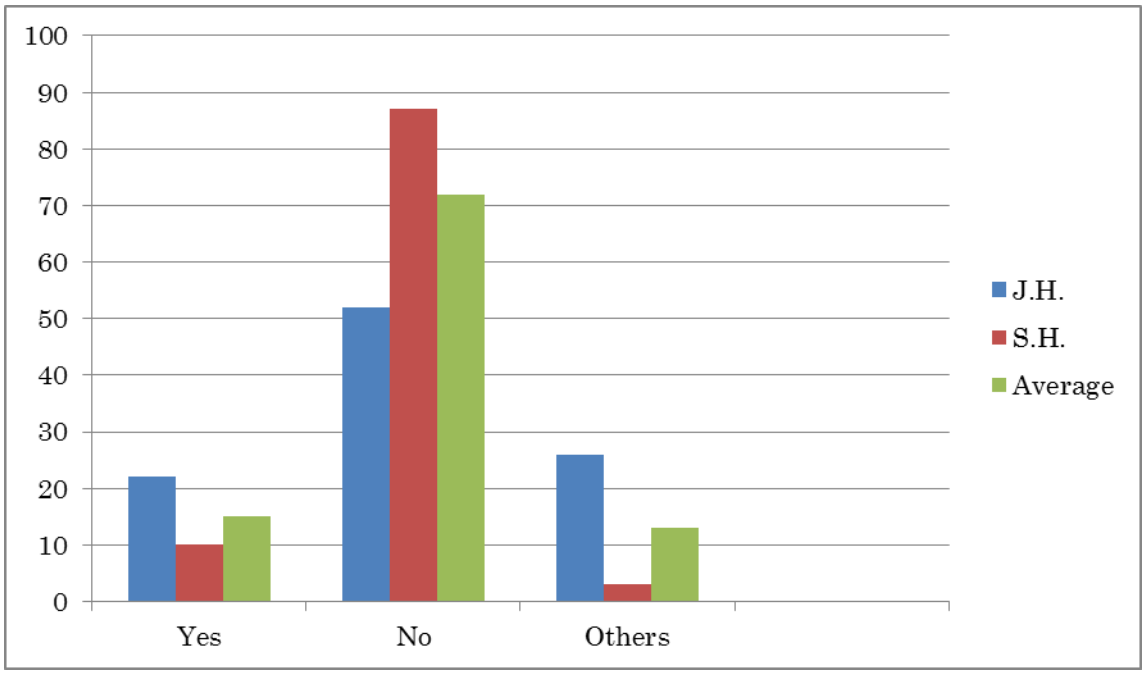

Figure 9. Answer to the question "Do your students often use phrasal verbs?" J. H. stands for junior high school and S. H. for senior high school. Figures represent percent.

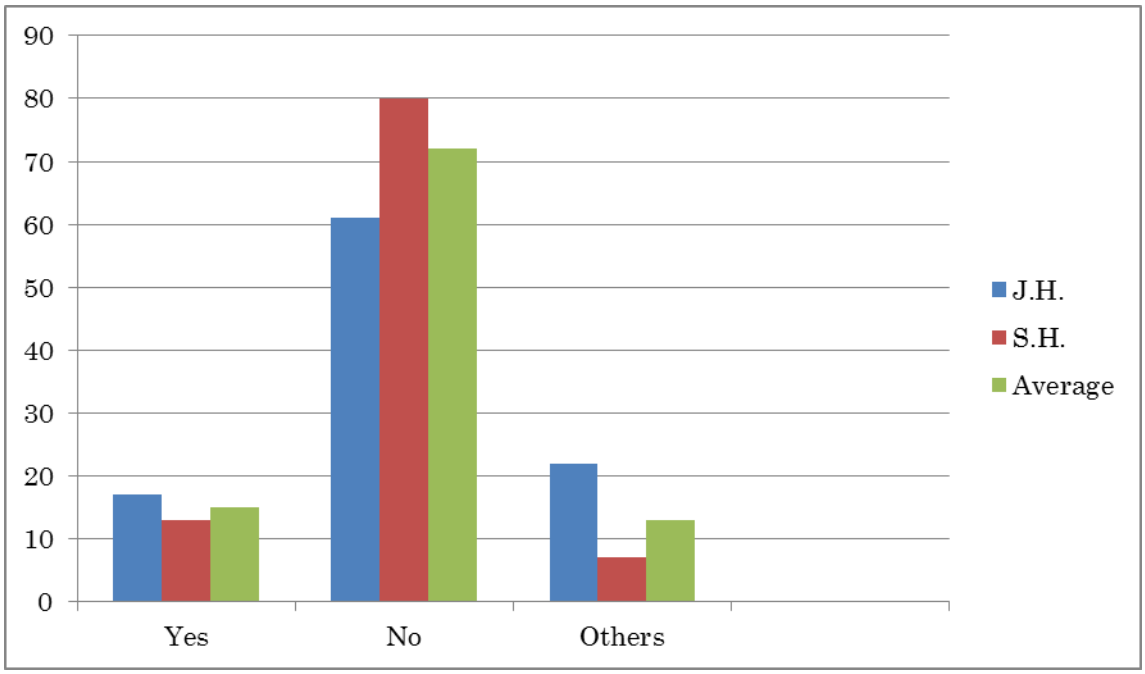

Figure 10. Answer to the question "Do your students know much about phrasal verbs?" J. H. stands for junior high school and S. H. for senior high school. Figures represent percent.

As Figure 11 shows, teachers report that they do not spend much time teaching phrasal verbs.

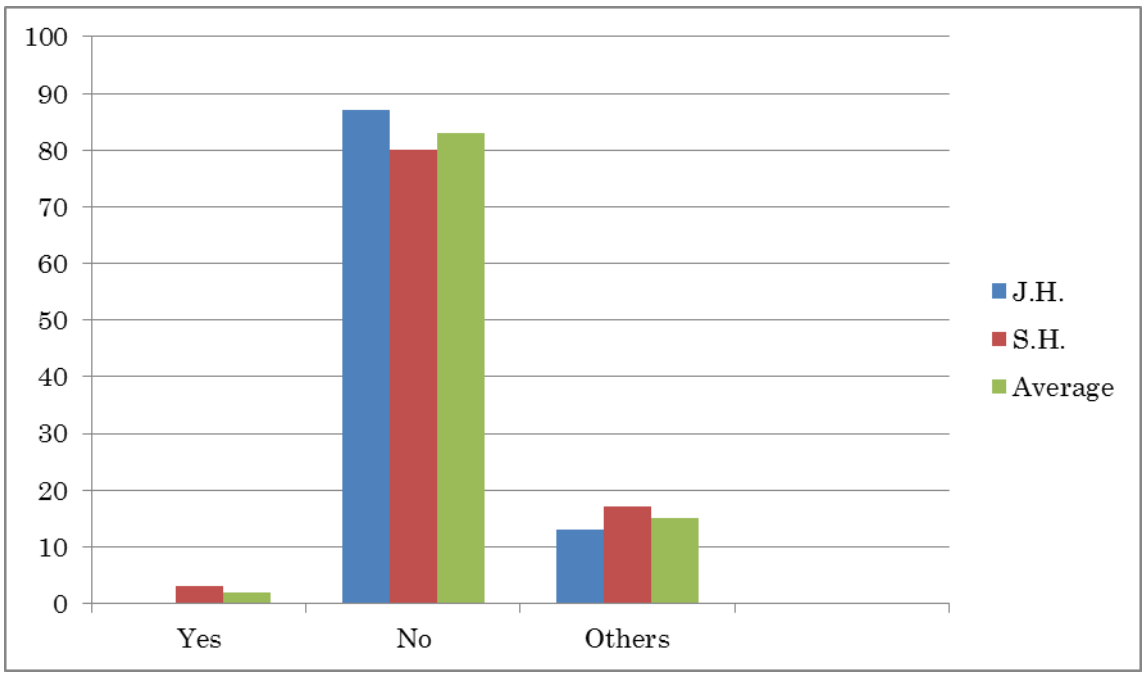

Figure 11. Answer to the question "Do you spend much time teaching phrasal verbs?" J. H. stands for junior high school and S. H. for senior high school. Figures represent percent.

In summary, most of the teachers think that they cannot teach speaking and writing. Many teachers think it important to teach phrasal verbs but they reported spending little time teaching them because of the demands of other topics or because they did not know how to teach them effectively. Learners may use fewer less phrasal verbs in these circumstances, as teachers spend little time teaching phrasal verbs. Phrasal verbs are not a main teaching target item for the Japanese high school teachers, though many of the teachers think that high school textbooks' treatments of phrasal verbs contain a number of problems, and that they are insufficient resources for teaching on the topic. They pointed out that one of the difficulties lies in the similarities between many of the phrasal verbs, reporting that students tend to have difficulty understanding and using them. Teachers' reports suggest that students may not obtain basic facility with phrasal verbs because of insufficient time

spent on their instruction in the classroom.

3.3 Relationships with high school textbooks

In addition to questionnaires toward English teachers at junior and senior high school, the author investigates the use of phrasal verbs, based on the construction and analysis of the textbook corpus. The purpose of this investigation lies in identifying what factors affect learner's attitudes toward phrasal verbs or learner's proficiency stage. As far as phrasal verbs are concerned, it was strongly suggested by high school teachers that high school textbooks' treatments of phrasal verbs are insufficient and they need some improvements. Thus, it is significant to show more objective data and determine problems concerning the textbooks by using the textbook corpus.

As a procedure of this study, therefore, I focus on the following junior and senior high school English textbooks (2002 and 2013 editions) as shown in Table 5. Using Excel, I collected the token of each part of texts in the textbooks and calculated the percentages and numbers of phrasal verbs, prepositional verbs, and other verbs.

Table 5

High school textbooks dealt with in this study

● Junior high school textbooks (2002 edition)
1 New Crown (Sanseido)
2 Columbus 21 (Mitsumura Tosho Shuppan)
3 New Horizon (Tokyo Shoseki)
4 One World (Kyoiku Shuppan)
5 Sunshine (Kairyudo Shuppan)

Table continues

Table continued

6	Total English (Gakko Tosho)
7	Total Active Communication (Shubunkan)
●	Senior high school textbooks (2002 edition)
8	Captain English 1（Taishukan）
9	All Aboard! English 2 (Tokyo Shoseki)
10	Hello there! Oral Communication 1 (Tokyo Shoseki)
11	Exceed English Reading (Sanseido)
12	Pro-vision English Writing (Kirihara Shoten)
●	Junior high school textbooks (2013 edition)
13	New Crown (Sanseido)
14	New Horizon (Tokyo Shoseki)
15	One World (Kyoiku Shuppan)
16	Sunshine (KairyudoShuppan)

3.4 VPCs found in Japanese high school English textbooks

3.4.1 Percentages of phrasal verbs and prepositional verbs

Table 6 below displays percentages of phrasal verbs and prepositional verbs in Japanese EFL textbooks for junior and senior high school. The junior high school grades 7-9 are indicated by G7, G8, and G9, respectively. E1, E2, and OC1 stand for senior high school levels English 1, English 2, and Oral Communication 1.

As shown in Table 6, the percentages of the prepositional verbs vary from 11.2 to 27.1%, and those of the phrasal verbs range from 3.0 to 9.0. In comparison, other verbs range from 66.0 to 85.0%. In terms of overall averages, phrasal verbs make up 4.9 % of all verbs, prepositional verbs

account for 17.1%, and other verbs make up the remaining 78%. Phrasal verbs are frequently used in the Writing textbook and prepositional verbs are most frequently used in the OC1 textbook. The overall average percentage of phrasal verbs, 4.9 % is very close to the average percentage of phrasal verbs that Waibel (2007) reported for the native speakers' corpus LOCNESS. Phrasal verbs are less frequently used in junior high G7 and G8 textbooks except for reading parts in G9 textbooks.

As Table 7 shows, the average number of the prepositional verbs was 66.9 and that of the phrasal verbs was 20.8.

Table 6

Percentages of prepositional verbs and phrasal verbs in all verbs in each textbook (%)

	G7	G8	G9	E1	E2	OC1	Reading	Writing
Prepositional verbs	17.5	14.0	11.2	18.1	12.1	27.1	17.5	19.7
Phrasal verbs	3.4	3.0	5.2	4.5	3.6	6.9	3.4	9.0
Other verbs	79.0	83.0	83.6	77.4	85.0	66.0	79.0	71.3

Table 7

Numbers of prepositional verbs and phrasal verbs in each textbook

	G7	G8	G9	E1	E2	OC1	Average
Prepositional verb	62	74.25	85.5	55	61	39	66.9
Phrasal verb	12	13.5	31.25	14	18	13	20.8

3.4.2 Uses according to the grade level

The following table shows the most frequent verb-particle combinations appearing in Japanese junior high school English textbooks (2002 edition). Table 8 is based on Seya (2004) and asterisk (*) indicates a phrasal verb.

In an English textbook, *Captain English I*, we can find some phrasal verbs, including *throw up, go out, kick off, find out,* and *stand up*; however, the number of phrasal verbs is limited, consisting of items with restricted, concrete meanings. Thus, in the text, we can see the semantic development of usages, from easy or fundamental concrete meanings to more difficult abstract ones. In a previous study of Japanese EFL textbooks, Chujo et al. (2008) examined repetition times of target words between editions published in 1988 and those published in 2006 and found that the later editions contained less repetitions.

Table 8

Most frequent verb-particle combinations in Japanese junior high school English textbooks (2002 edition)

Rank	Verb-particle combinations	G7	G8	G9	Total
1	look at	16	17	20	53
2	thank ～for	9	9	8	26
3	look for	3	10	8	21
4	talk to	2	5	10	17
5	put in	2	5	8	15
5	speak to	6	4	5	15
5	work for	1	5	9	15
8	go into	1	4	9	14
8	listen to	6	2	6	14
8	talk about	2	3	9	14

Table continues

Table continued

11	come back*	4	3	6	13
12	come from	2	6	4	12
12	go back*	1	6	5	12
14	talk with	2	0	9	11
14	wait for	3	4	4	11
16	come on*	6	3	1	10
16	give up*	0	2	8	10
16	welcome to	5	4	1	10
19	worry about	0	4	5	9
19	write to	5	3	1	9
21	look up*	2	3	3	8
21	think about	0	2	6	8
23	come in*	2	2	3	7
23	get to	2	1	4	7
23	think of	0	3	4	7
23	wake up*	2	2	3	7

Figure 12 below shows the number of phrasal verbs and prepositional verbs respectively, in seven junior high school English textbooks (2002 edition). As indicated, the number of phrasal verbs is rather small.

Table 9

Kinds and average of most frequent verb-particle combinations in Japanese junior high school English textbooks (2002 edition)

	Kind	G7	G8	G9	Total	Average
Total of frequent phrasal verbs (up to 23rd)	7	17	21	29	67	19.4%
Total of frequent prepositional verbs (up to 23rd)	19	67	82	130	279	80.6%
Total of frequent VPCs (up to 23rd)	26	84	103	159	346	100%
Total of frequent phrasal verbs (up to 92nd)	102	54	83	121	258	39.5%
Total of frequent prepositional verbs (up to 92nd)	62	78	131	186	395	60.5%
Total of frequent VPCs (up to 92nd)	164	132	214	307	653	100%

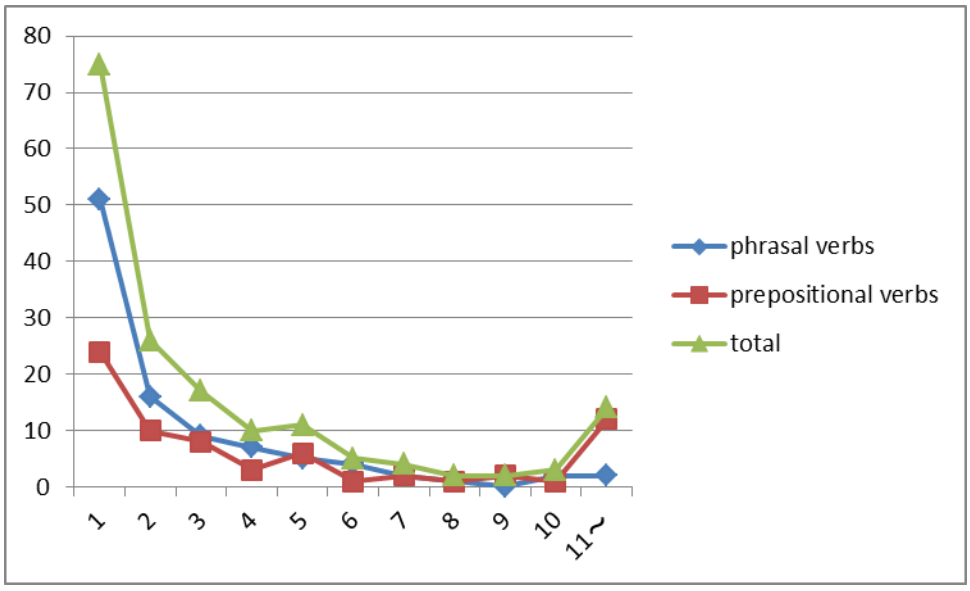

Figure 12. Number of phrasal verbs and prepositional verbs in seven junior high school English textbooks (2002 edition).

As for textbook No. 8 through 16, I investigated phrasal verbs percentage as shown in Tables 6 and 7.

About 66.9 prepositional verbs are used per textbook, and about 20.3 phrasal verbs are used per textbook. Both prepositional and phrasal verbs are used very frequently in the third-year junior high school textbooks (G9), but they are not as frequent in the high school textbooks.

Drawing on Seya (2004), which analyzed collocation frequencies in textbooks at each junior-high grade level, I investigated uses of verb-particle combinations in the 2004 editions of English textbooks cited in textbook No. 1 through 7 in the appendix. Seya's analysis is related to the JEFLL corpus, because the students represented in the JEFLL corpus used 2002 version English textbooks.

Table 8 enumerates the top 23 verb-particle combinations appearing in 2002 editions of junior high school English textbooks. The most frequently used VPC is *look at*, followed by *thank for*, *look for, put in* and so on in order. As for phrasal verbs, *come back* is most frequently used, followed in order by *go back*, come on, and *give up*. However, the number of phrasal verbs is smaller than that of prepositional verbs. To show this in a more explicit way, Table 9 compares the top 23 VPCs to top the 92 VPCs in number. It is clear that prepositional verbs account for a large percentage of the top 23 VPCs, whereas phrasal verbs are used much more in both number and kind than prepositional verbs in top 92 VPCs. A lower frequency of phrasal verbs in textbooks may make it difficult for learners acquire these forms due to inadequate exposure.

Table 10 shows the most frequent VPCs, containing both prepositional verbs and phrasal verbs, in junior high school English textbooks (2013 edition). Prepositional verbs apparently outnumber phrasal verbs, accounting for the top 7-10 items on the list. The numbers of phrasal verbs and prepositional verbs in junior high school textbooks from grades 7 to 9 are shown in Figure 13 below. From one grade to the next, both grow in number, but the number of phrasal verbs is always smaller than that of prepositional verbs. This may indicate one reason why many teachers pointed out the

insufficiency of phrasal verbs in the textbooks.

By classifying the top 92 VPCs into phrasal verbs and prepositional verbs, we can get Figure 12. There are more than 50 phrasal verbs which appear only once in seven kinds of textbooks, and more than 70 VPCs. In this way, few occurrences of individual phrasal verbs in the textbooks may make it difficult for learners to acquire them.

Table 10

Most frequent prepositional verbs and phrasal verbs in junior high school textbooks (2013 edition)

	Prepositional verbs			Phrasal verbs	
1	go to	15	1	give up	6
2	look at	14	2	go back	4
3	be in	11	3	go on	3
4	live in	10	3	sit down	3
5	get to	8	5	go out	2
5	come to	8	5	stand up	2
7	talk about	6	7	find out	1
8	talk with	4	7	come out	1
8	agree with	4	7	show up	1
8	be from	4	7	throw away	1
8	listen to	4	7	come on	1
12	belong to	3	7	look down	1

Note. Numerous additional low-frequency phrasal verbs are not listed here.

Then, we turn to an investigation of the relationships between the textbooks just described and features of the learner corpus. It is well known that Japanese learners are prone to use the

ungrammatical expression *discuss about* instead of *discuss* before object nouns. It has been suggested that Japanese language as L1 influences this phenomenon but according to ICNALE (International Corpus Network of Asian Learners of English) corpus, Thai and Chinese learners appear to make the same mistake. It is said that basic syntactic structures in English are roughly reduced to two combinations, that is, verb plus object noun, and preposition plus noun phrase. Learners who focus on one of these in practice may be apt to misuse the other pattern.

The verb *discuss* is only transitive in use, so learners need to practice the verb plus object noun pattern when the verb is introduced. As we have seen already, prepositional verbs such as *talk about* are used frequently in high school textbooks and are more difficult to learn. *Discuss* is first introduced in senior high school, but *talk about* is repeatedly studied in the junior high school period. Students first acquire a fairly robust knowledge of the preposition *about*, which they then overuse and misuse by extention. Tables 11 and 12 show some similar errors in prepositional uses of VPCs appearing in the JEFLL corpus.

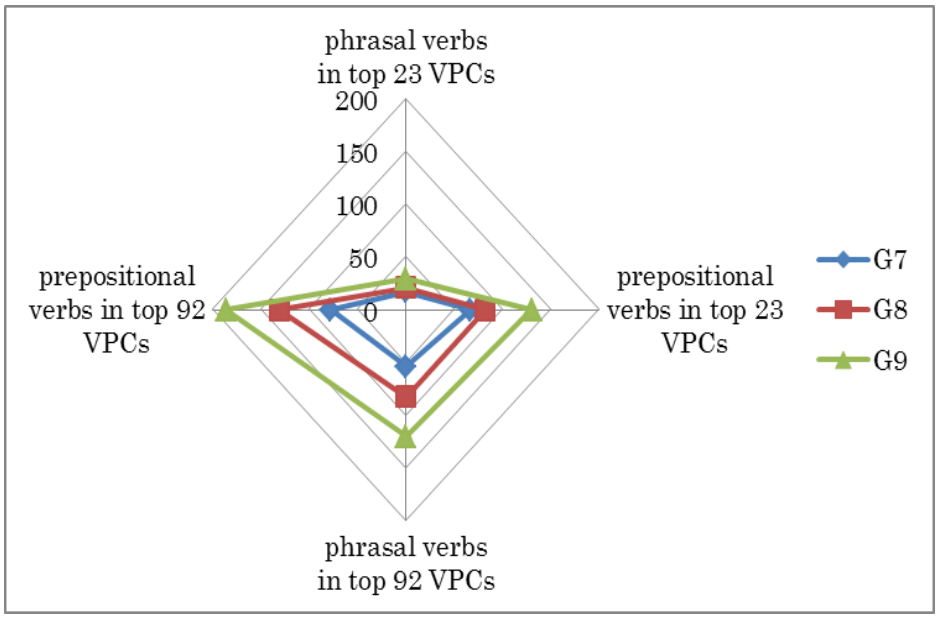

Figure 13. Comparison of the numbers of phrasal verbs and prepositional verbs according to the junior high grade level.

Table 11

Examples of prepositional verb errors in JEFLL corpus

(1) *So, I will meet *to* her.
(2) a. *Many people visit *to* our class. b. *One day, an old woman visited *to* his house. c. *We opened festival for two days, and so many people visited *for* us.
(3) *By the way I join *to* a dance club.
(4) *Will I marry *with* him?
(5) *When I graduated *junior high school*, my mother bought it *to* me.
(6) *We have to discuss *about* this situation.

Note. * means ungrammatical.

Table 12

Grade distributions of the errors in prepositions in JEFLL corpus

	G7	G8	G9	G10	G11	G12	Total
meet		*to(4)	*to(1)		*to(1)		*to(6)
visit	*for(3) *to(1)	*to(2)	*to(1)		*for(1) *to(4)	*to(3)	*to(11) *for(4)
join				*to(4)	*to(7)		*to(11)
marry		*to(1) *with(1)	*with(6)		*with(2)	*with(2)	*to(1) *with(11)
graduate					*O(4)	*O(2)	*O(6)
discuss					*about(1)	*about(1)	*about(2)

Note. * indicates ungrammatical. Figures in parentheses indicate the number of errors.

Errors such as *meet to* or *visit to* may be due to the overuse of the familiar directional preposition *to*, which learners are exposed to fairly early. Similarly, the misused verbal phrase *marry with* may be closely related to learners' semantic acquisition of the common preposition *with*, that is, relational meaning with something. The misused or overused expression *discuss about* may also be due to learners' acquisition of the knowledge of the abstract prepositional meaning of *about*. In other words, learners' awareness of the meanings of common prepositions may cause them to extend these prepositions by analogy, resulting in misuses of prepositional verbs. Conversely, the misuse of *graduate from* may stem from L1 influence, since the corresponding Japanese construction employs an object noun. However, Table 16 suggests that these misuses may be closely related to the stages of learning in language development. As the table shows, the misuse of the directional preposition *to* occurs prior to misuses of *with* and *about*, which convey a more abstract meaning. This is apparently in accordance with the stages of preposition acquisition. Table 12 above shows the number of errors made by students at each high school grade level in the JEFLL corpus. .

According to high school teachers' responses to the questionnaires, phrasal verbs are thought to be less important elements of the teaching curriculum, and therefore they receive limited treatment during class time. Many teachers consider the content of textbooks to be insufficient in dealing with phrasal verbs; in fact, phrasal verbs are generally not as frequent as prepositional verbs in textbooks, and lack of phrasal verb exposure may pose a problem for students' language learning. An analysis of errors in the JEFLL corpus also suggests that errors in preposition usage are closely related to learning stages. Error analyses of VPCs reveal that not only linguistic factors but also environmental factors such as teacher instructions or the contents of the textbooks may affect or impede learning of phrasal verbs. But the implications of these data also point to ways in which both teaching methods and textbook improvements could be used to address such problems.

Chapter 4 Methodology

This chapter describes the combinations of two research methods employed here, namely, a corpus-based approach supplemented by elicitation test research. The corpora make up my main source of objective data for explaining the characteristics of VPCs, but corpus-based approaches benefit from the addition of other kinds of objective evidence. Thus, I will supplement our corpus-based analysis with more experimental methods using elicitation tests.

This combined approach is used to investigate three research questions: (1) *Do Japanese learners of English tend to use less English phrasal verbs both in number and kind than native speakers of English? (2) Do differences in the semantic nature of phrasal verb types (figurative vs. literal) affect the uses of phrasal verbs by Japanese learners? (3) Are the developmental stages of the Japanese EFL learners related with the uses of phrasal verbs on the basis of the ways the learners' performance is measured?*

This chapter also outlines the specifics of the elicitation test technique for English phrasal verbs, which allows for the comparison of experimental data with the results of corpus analysis and previous studies.

The elicitation test for English phrasal verbs was administered to both university and high school students. The instrument used was based on one developed by Liao and Fukuya (2004), who investigated the use and avoidance of English phrasal verbs by Chinese learners. In their study, six groups of intermediate and advanced learners took one of three tests (multiple-choice, translation, or recall) that covered both literal and figurative phrasal verbs. Fifteen native speakers also took the multiple-choice test. The results show that three factors (proficiency level, phrasal-verb type, and test type) affected the learners' avoidance of phrasal verbs. It is also possible that the differences between first and second languages and the semantic difficulty of phrasal verbs may lead to this avoidance.

Nakamoto and Yokozawa (2004) conducted similar experimental research on phrasal verbs,

using a gap-fill test and a true/false test. They provided evidence that repetition, deep processing, and task variation promoted the acquisition of phrasal verbs in long-term memory.

Evidence presented in Waibel (2007) implies that English learners who lack phrasal verbs in their L1 (e.g., Japanese EFL learners) tend to avoid using phrasal verbs in English, while those with L1s rich in phrasal verbs, such as German-speaking EFL learners, do not avoid using these in English. The data from the JEFLL and the BNC were compared to test this idea empirically. Japanese learners' avoidance of English phrasal verbs was investigated by administering the same kind of elicitation tests used in Liao and Fukuya (2004) in order to compare non-native speakers with English native speakers.

In addition, the proportions of phrasal and of prepositional verbs as a percentage of total words in Japanese junior and senior high school English textbooks were calculated, using Microsoft Excel. On average, phrasal verbs tend to be used as often in these texts as in the native corpus LOCNESS, but there is great variation.

For the elicitation test, fifteen pairs of phrasal and one-word verbs were selected, based on native speaker preference: a multiple-choice test was composed on the basis of the 15 short dialogues from the test of native speakers (see Appendix B). In each dialogue, the verb in question was left blank. The participants were asked to fill in the blank with one of the four verbs presented below the dialogue: a phrasal verb, an equivalent one-word verb, and two distractor verbs. The participants had about 10 minutes to complete the test. Because each item actually contained two correct answers, the participants received instructions to choose the one they considered most suitable to complete the dialogue.

The translation test employed the same 15 dialogues as the multiple-choice test, with the verbs left out. At the end of each dialogue, the Japanese equivalent of the missing verb was given. The participants were asked to translate the Japanese equivalents into English in the provided 10 minutes. In the recall test, the participants were first given the 15 dialogues written out in full with the phrasal

verbs included. The test contained five distractor dialogues with one-word verbs. The participants were given about 10 minutes to memorize the main ideas of the dialogues. After about an hour, they were given the same dialogues again, but this time, the verbs were left out and they were asked to fill them in according to what they remembered. To prevent L1 influence, no Japanese translation of the phrasal verbs was given, following Hulstijn and Marchena (1989).

4.1 Participants

Participants in the elicitation tests included 10 native speakers of American English, 94 Japanese university students, and 77 Japanese senior high school students. The native speakers of English were all American exchange students in their twenties living in Japan, 8 males and 2 females. The 94 university students comprised 29 freshmen and 66 sophomore, 17 males and 77 females, who were majoring in literature, economics, and other arts subjects. The 77 senior high school participants were all high-performing college-bound students. Their group comprised 37 eleventh graders and 40 twelfth graders, 29 males and 48 females.

4.2 Purpose and method of the study

It has often been stated that Japanese learners of English are generally poor at using phrasal verbs, but this has not been clearly demonstrated by previous studies. This study addresses that gap. By comparing the frequencies of phrasal verbs across corpora, I show how Japanese speakers' patterns differ from those of native speakers. In addition, I use the learners' corpora to investigate how linguistic abilities develop, comparing phrasal verb use between novice and advanced learners. The corpus analysis is also to be supplemented by the elicitation test research. To compare different corpora such as COCA and JEFLL, all frequency values are normalized per million. I have used the method of adjusting frequency, following Tono (2007) besides Mizumoto and Noguchi (2009).

As for the corpus-based approach, I used some statistical analyses such as a log-likelihood analysis and correspondence analysis between different corpora. In the course of analyzing the data of elicitation research, I also used nonparametric statistical analyses such as Kruskal-Wallis and Steel-Dwass. These statistical methods, including corresponding analysis, were significant in contributing to identify the characteristics of uses of phrasal verbs. Correspondence analysis is said to be a method for exploring associations between sets of categorical variables. It is considered as a technique for assigned order to unordered categories. In the by-plot charts, categories from each variable closest to each other are considered the most associated. Correspondence analysis was therefore adopted in this study to clearly visualize the relationships between different corpora and their corresponding items such as particles.

4.3 Methodological problems

In general, a corpus-based study faces difficulty in interpreting differences in meaning between polysemous forms for instance, interrogative and relative pronouns such as *who* and *which*, because different meanings can have the same form and can sometimes occupy the same distributional position in sentences. Similarly, a corpus cannot by itself distinguish meaning differences among verbs, so the researcher must check the meanings one by one.

For phrasal verbs, corpus searches may yield incorrect numbers of the "split type," where the NP complement is situated between the verb and the particle; these inaccuracies arise because the particle might be a preposition of the following adverbial phrase as opposed to an adverbial particle of the phrasal verb. To ensure accurate counts, meaning and semantic structures were considered in detail, token by token. Particles are generally divided into two types, adverbial and prepositional, although some of them, such as *up* and *down*, are known to function as both. However, few studies to date have shown what percentages of total VPC particles are prepositional or adverbial. I therefore use corpus data to examine the characteristics of the particles and arrive at these

percentages. In addition, I subcategorize types of high-frequency verbs according to their meanings and show the distributional pattern of phrasal verbs.

I also compare corpora to show how phrasal verb usage patterns of native English speakers differ from those of Japanese learners of English. In the course of this discussion, I consider the semantic degree of abstractness of the object of the verbs.

4.4 Distributional comparison using corpora

With respect to phrasal verbs, it seems important to compare not only the usage patterns of Japanese learners with those of native speakers, but also the usages of novice and advanced English learners. To that end, I take up the JEFLL, which contains data from beginning English language learners, and PERC, which contains more advanced data, Tono (2007) uses JEFLL to define English verbal patterns.

Contrastive interlanguage analyses have often been effective for research on second language acquisition (SLA) (Granger, 2002). These analyses draw on data from two sources —native speakers and non-native learners— to determine the characteristics of the interlanguage and find differences and commonalities. In order to develop effective teaching materials and interventions, we require a clear picture of the grammatical difference between correct usages, which can be gained from corpora of native speakers, and incorrect ones, which can be found in learner corpora. A "learner corpus" is a systematic computerized collection of texts produced by learners (Nesselhauf, 2004), and it can be used not only for studying SLA but also for developing better teaching materials and methods.

Gardner and Davies (2007) describe a number of senses of frequent phrasal verbs, but they do not analyze the data more deeply. In this corpus study, I focus in particular on the "sense group" of phrasal verbs and clarify tendencies in their usage across the corpora. For this purpose, the verbs are divided into two groups, concrete and abstract.

4.5 Corpus-based studies

Corpora are defined as a large collection of written or spoken texts that are used for language research and they can be divided into three major groups, that is, native speakers' corpora, learner corpora, and textbook corpora. This study deals with these three kinds of corpora. These corpora dealt in this study, except textbook corpora, are briefly shown as in the following Table 13.

Table 13

Major corpora dealt with in this study

Corpus	Target group	Total words (token)
BNC	Native speakers (British English)	96,986,707
COCA	Native speakers (American English)	About 450,000,000
LOCNESS	Learners of native speakers (university students)	About 168,400
ICLE	Learners (university students in 21 countries including native speakers)	About 3,700,000
ICNALE	Learners (university students in Asian countries including native students)	About 1,000,000
NICE	Learners (Japanese undergraduate and graduate students)	About 70,000
PERC	Learners (Japanese undergraduate and graduate students, and researchers)	About 17,000,000
JEFLL	Learners (Japanese junior and senior high school students)	About 700,000

To compare these corpora correctly, adjusted frequency, such as per million words, is adopted. Textbook corpus in this study was shown in Chapter 3. The corpus comparison showed the relationships between the tendency of uses of phrasal verbs of Japanese high school students and their textbooks.

Besides native-speaker corpus COCA for a reference corpus, I compared learner corpora such as LOCNESS and JEFLL. These learner corpora can be used to identify typical difficulties of learners of a certain learner group (e.g. intermediate learners) or learners of a certain native language (e.g. Japanese learners of English), and thus provide a basis for the identification of frequently occurring mistakes in learner language.

Even relatively small corpora consisting of 10,000 words can be said to yield a large amount of usage data. Such data can then be compared with, for example, native-speaker corpora such as BNC to reveal what learners are not using, as well as how correctly or appropriately they are using the target language. Moreover, learner corpora can be diagnostic, tracking the progress of learners over the course of a semester, a year or a longer time period. Thus, learner corpora represent concrete empirical evidence of language development. In addition, typical problems and errors of usage found in learner data provide us with more effective way of learning the target language.

Thus, researchers such as Tono (2007) and Uchida (2012) compared Japanese learner corpus JEFLL and native-speaker corpus BNC. They objectively showed the process of learning English by the Japanese novice learners of English, using these corpora. In this study, I compared not only a number of learner corpora such as JEFLL but also native-learner corpora such as COCA (American English corpus) in order to obtain more comprehensive and objective data. This comparative or contrastive study of different corpora will clearly show the characteristics or tendencies of both native and nonnative speakers of English such as Japanese learners, giving meaningful suggestions and pedagogical implications for learners of English.

In the previous chapter, I presented three research questions for the elicitation approach. In order to answer Research Question 1, that is, to present evidence that Japanese learners of English avoid phrasal verbs, the following chapter compares phrasal verbs frequencies between a number of native speaker and non-native speaker corpora. The results show how different non-native speakers' patterns including those of Japanese speakers are from those of native speakers. In

addition, we use the learner corpora to investigate how linguistic abilities develop, comparing phrasal verb use between novice and advanced learners.

4.6 The previous studies on the most frequently used English phrasal verbs

Five previous corpus-based frequency studies of the phrasal verbs in native English (Biber et al., 1999; Gardner and Davies, 2007; Liu, 2011; Tani et al., 2001; Waibel, 2007) have given us valuable information about phrasal verbs and their distribution patterns. There are, however, important limitations to each of these studies.

Biber et al. (1999)'s treatment of phrasal verbs deals with only a small set (31 in total). Gardner and Davies' work, though covering a large number (100) of phrasal verbs, has three serious limitations of its own. First, their list of the 100 most frequent phrasal verbs contains only those from the top 20 phrasal verb-producing lexical verbs, and excludes highly frequent phrasal verbs with an uncommon base verb, such as *keep up*. As a result, their study, although offering new insights about phrasal verbs (e.g., that a very small group of lexical verbs make up a majority of phrasal verbs), does not provide a thorough account of the most frequent phrasal verbs. In contrast, Liu (2011) deals with as many as 150 phrasal verbs in total, including the other two

Second, using the BNC as a data source, both Biber et al. (1999) and Gardner and Davies (2007) deal exclusively with British English. Liu (2011), on the other hand, shows the most frequently used English phrasal verbs in both American and British English.

Third, no cross-register examination of frequently used phrasal verbs is made by Biber et al. (1999) or Gardner and Davies (2007). This examination is very important for language learning purposes, because we need to know *where* specific phrasal verbs are and in which *contexts* it is and is not typical to use them properly. Liu (2011) conducts a cross-register examination of the most frequently used phrasal verbs in American and British English. However, limited by space and by his research design, he provides only the lemmatized forms of the most common phrasal verbs, and

does not examine their various meanings of across registers. Thus, a tense-specific list and a comparison of occurrence by register of the various meanings of polysemic phrasal verbs can help us better understand their use.

Chapter 5 Results

5.1 Corpus results

5.1.1 Frequent phrasal verbs in HMC corpus

Tani et al. (2001) investigate the frequency of phrasal verbs using the Hollywood movie corpus (HMC), which contains scenarios of 122 Hollywood movies in the 1980s-90s. The phrasal verbs are composed of ten basic verbs and 16 kinds of particles. The following table enumerates top 24 frequent phrasal verbs out of 91 phrasal verbs.

Table 14

24 most frequent phrasal verbs in HMC corpus

1	come on	2	get out	3	go on	4	get back	5	come in
6	get in	7	get up	8	come back	9	go up	10	go back
11	get off	12	hold on	13	get down	14	go out	15	come up
16	take out	17	come out	18	take off	19	put on	20	come over
21	go down	22	come down	23	go in	24	go over	24	get away

Tani et al. (2001, p. 33)

5.1.2 Frequent phrasal verbs in Biber et al. (1999)

Biber et al. (1999) identify the following 31 verbs as the most frequent, with attention to their semantic and syntactic characteristics. They collect data from four registers in the BNC corpus: conversation, fiction, news, and academic prose; and divide verbs into eight types: activity intransitive, activity transitive, mental transitive, communication transitive, occurrence transitive, copular, and aspectual intransitive, as follows.

(1) 1 Activity intransitive—come on, get up, sit down, get out, come over, stand up, go off, shut up, sit up, go ahead

2 Activity transitive—get in, pick up, put on, make up, carry out, take up, take on, get off, look up, set up, take off, take over

3 Mental transitive—find out, give up

4 Communication transitive—point out

5 Occurrence intransitive—come of, run out

6 Copular—turn out

7 Aspectual intransitive—go on

5.1.3 Phrasal verbs in Gardner and Davies (2007)

Gardner and Davies (2007) collect data on 20 common verbs (*go, come, take, get, set, carry, turn, bring, look, put, pick, make, point, sit, find, give, work, break, hold, move)* and 16 particles (*about, across, along, around, back, by, down, in, off, on, out, over, round, through, under, up*). This allows them to show the 100 most frequent phrasal verbs composed of these items (which, as noted above, may be difficult form the 100 most common overall).

Table 15

100 most frequent phrasal verbs in BNC corpus

1	go on	2	carry out	3	set up	4	pick up	5	go back
6	come back	7	go out	8	point out	9	find out	10	come up
11	make up	12	take over	13	come out	14	come on	15	come in
16	go down	17	work out	18	set out	19	take up	20	get back
21	set down	22	turn out	23	take on	24	give up	25	get up
26	look up	27	carry on	28	go up	29	get out	30	take out
31	come down	32	put down	33	put up	34	turn up	35	get on
36	bring up	37	bring in	38	look back	39	look down	40	bring back
41	break down	42	take off	43	go off	44	bring about	45	go in
46	set off	47	put out	48	look out	49	take back	50	hold up
51	get down	52	hold out	53	put on	54	bring out	55	move on
56	turn back	57	put back	58	go round	59	break up	60	come along
61	sit up	62	turn round	63	get in	64	come round	65	make out
66	get off	67	turn down	68	bring down	69	come over	70	break out
71	go over	72	turn over	73	go through	74	hold on	75	pick out
76	sit back	77	hold back	78	put in	79	move in	80	look around
81	take down	82	put off	83	come about	84	go along	85	look round
86	set about	87	turn off	88	give in	89	move out	90	come through
91	move back	92	break off	93	get through	94	give out	95	come off
96	take in	97	give back	98	set down	99	move up	100	turn around

Gardner and Davies (2007, pp.358-359)

5.1.4 Comparison between BNC and COCA

Liu (2011) compares phrasal verbs in British and American English using COCA and the BNC. In COCA, he analyzes phrasal verbs using a framework of five registers; spoken, fiction, magazine, newspaper, and academic prose.

Liu (2011) presented the 150 most frequent phrasal verbs in each corpus, and the following tables show the top 25 of each list. The most frequent phrasal verb in both American and British corpora is *go on*, according to his study.

Table 16

25 most frequent phrasal verbs in COCA (American English)

1	go on	2	pick up	3	come back	4	come up	5	go back
6	find out	7	come out	8	go out	9	point out	10	grow up
11	set up	12	turn out	13	get out	14	come in	15	take on
16	give up	17	make up	18	end up	19	get back	20	look up
21	figure out	22	sit down	23	get up	24	take out	25	come on

Liu (2011, p.683)

Table 17

25 most frequent phrasal verbs in BNC (British English)

1	go on	2	set up	3	pick up	4	go back	5	come back
6	go out	7	point out	8	find out	9	come up	10	make up
11	take over	12	come out	13	come on	14	come in	15	go down
16	work out	17	set out	18	take up	19	get back	20	sit down
21	turm out	22	take on	23	give up	24	carry out	25	get up

Liu (2011, pp.683-684)

According to Liu's findings, certain phrasal verbs are used differently between British and American English. They are listed in order below. The numbers in each parentheses represent their difference in rank order between COCA and the BNC—the bigger the number, the more different the phrasal verb's use. The minus sign (-) means that the phrasal verb is used more in British English than in American English.

Table 18

25 most different phrasal verbs between American and British English

1	figure out(126)	2	sort out(-99)	3	show up(92)	4	get on(-88)
5	fill in(-87)	6	check out(79)	7	shut down(77)	8	lay out(75)
9	carry on(-73)	10	hand over(-72)	11	hang out(60)	11	go a/round(-60)
13	bring about(-59)	14	hang up(58)	15	come a/round(-57)	16	build up(-56)
17	throw out(55)	17	close down(-55)	19	pass on(-53)	19	write down(-53)
21	call out(52)	22	start out(50)	23	set off(-49)	24	set out(-47)
24	pay off(47)						

5.1.5 Comparison of phrasal verbs using corpora

JEFLL contains about 10 thousand Japanese English compositions written by junior and senior high school students, with 670 million words. The most frequently used English phrasal verbs in the corpus are given in Table 20. Waibel (2007) has investigated the 25 most frequent phrasal verbs in other corpora, as shown in Table 19. The International Corpus of Learner English (ICLE), a project launched by Sylviane Granger in 1990, is the first large-scale collection of argumentative, non-specialized learner essays in English. The essays were produced by higher intermediate to advanced EFL university students from – at the time of writing – 20 different native language backgrounds. Waibel (2007) also uses a native-speaker control corpus, the LOCNESS, and

compares the frequencies of the phrasal verbs of the native English speakers with those of non-natives—German and Italian learners of English. The German and Italian components of ICLE are called G-ICLE and I-ICLE respectively. Similarly, the JEFLL corpus shows the case of Japanese learners of English and can be compared with adjusted frequencies of per million words.

Table 19

25 most frequent phrasal verbs in three learner corpora

	LOCNESS		***G-ICLE***		***I-ICLE***	
	Phrasal verb	per mil. w.	Phrasal verb	per mil. w.	Phrasal verb	per mil.w.
1	go on	201	find out	219	grow up	445
2	carry out	182	go on	182	bring up	229
3	point out	155	give up	136	go on	207
4	take away	117	turn out	120	give up	134
5	bring up	110	get up	116	point out	117
6	take on	102	go out	103	make up	95
7	end up	98	point out	99	carry out	86
8	grow up	98	wake up	95	find out	78
9	give up	95	come back	91	keep on	61
10	bring about	87	bring up	83	build up	56
11	find out	72	go back	83	turn out	52
12	make up	68	carry out	78	carry on	48
13	set up	64	be away	74	go out	48
14	go up	61	put on	74	come out	43

Table continues

Table continued

15	break down	53	be over	70	come back	43
16	get away	53	end up	70	sum up	43
17	cut off	45	sum up	70	take away	39
18	be out	45	take over	70	end up	35
19	bring in	42	come up	66	go back	30
20	carry on	42	get back	66	bring about	26
21	go out	42	sit down	66	put forward	26
22	run up	42	stand up	66	come up	22
23	turn out	42	take up	66	link together	22
24	fit in	38	take out	54	be away	17
25	get out	38	be back	50	fall down	17

Waibel (2007, p.87)

Table 20 shows high-frequency phrasal verbs and prepositional verbs in JEFLL corpus.

Table 20

High-frequency phrasal verbs and prepositional verbs in JEFLL corpus

	Phrasal verb	Total number	per mil. w.	Prepositional verb	Total number	per mil. w.
1	get up	716	1069.80	go to	2210	3302.05
2	take out	681	1038.43	come to	591	883.04
3	wake up	391	584.21	listen to	214	319.75

Table continues

Table continued

4	come back	171	256.99	live in	179	267.45
5	run away	169	252.51	say to	161	240.56
6	bring out	136	207.69	belong to	136	203.20
7	give up	100	149.41	look for	127	189.76
8	go back	101	150.91	live without	96	143.44
9	go out	94	143.44	look like	89	132.98
10	break out	81	121.03	think about	88	131.48
11	fall down	53	79.19	play with	87	129.99
12	grow up	41	61.26	look at	74	110.57
13	carry out	33	50.80	talk with	68	101.60
14	sell out	30	44.82	run to	66	98.61
15	make up	27	41.84	make by	63	94.13
16	look around	29	43.33	talk about	62	92.64
17	go back	18	26.89	come in	53	79.19
18	go away	16	23.91	get to	53	79.19
19	go down	16	23.91	think of	46	68.73
20	go on	16	23.91	put on	43	64.25
21	stand up	16	23.91	talk to	40	59.77
22	sit down	16	23.91	walk in	39	58.27
23	cry out	15	22.41	run after	39	58.27
24	look back	13	19.42	go into	39	58.27
25	look up	11	16.44	live with	34	50.80

Note. per mil. w. stands for per million words.

Table 21

"Go on" versus "continue"

	LOCNESS	G-ICLE	I-ICLE
go on	148	120	190
carry on	42	12	48
keep on	0	25	61
continue	515	91	177

Waibel (2007, p.88)

Waibel (2007) points out that in the native students' essays in LOCNESS the more formal alternative outnumbers the less formal, so that the verb *continue* is most frequent, as Table 21 shows.

Table 22 below compares the most frequent particles in a number of corpora, drawing on Waibel's (2007) results from LOCNESS, G-ICLE, and I-ICLE, as well as original JEFLL results from the current study. As the table shows, o*ut* and *up* are not only the most productive particles across the four corpora but also the ones most frequently used with phrasal verbs by native speakers —they account for the two most frequent adverbial particles in American and British English in general. Compared to native speakers, the learner corpora indicate that Japanese learners typically underuse the particle *on*, while Italian learners underuse particles such as *out*, *back*, *away*, and *down*. German learners, on the other hand, tend to overuse nearly all particles, including *up*, *out*, *back*, and *down*. The data from LOCNESS, G-ICLE, and I-ICLE in Table 22 are cited from Waibel (2007); JEFLL results are based on the current study. In order to investigate each frequency in the JEFLL corpus, I used SAKURA, a freeware concordance program for Windows, on the web site.

Table 22

Six most frequent particles in LOCNESS, G-ICLE, I-ICLE, and JEFLL

	LOCNESS	G-ICLE	I-ICLE	JEFLL
Out	1201	1470	588	1865
Up	1163	1615	1266	2235
On	508	487	376	197
Back	409	487	156	599
Away	405	392	134	353
Down	333	524	99	267

Note. Figures represent per million words.

Using Excel, a correspondence analysis of these particles across the four corpora was conducted to give statistic accounts. Figure 14 presents the results below. Correspondence analysis, a multivariate statistical method, was originally used for analyzing a large number of variables, i.e., one hundred or more variables. Ishikawa (2007) attempted to objectively summarize different frequencies with the statistical techniques of multivariate analysis such as principal component analysis (PCA), factor analysis (FA), and correspondence analysis (CA). His study showed us that, among these, CA worked best for the purpose of identifying basic educational and communicative words. Similarly, Uchida (2012) examined the differences in the types and frequencies of 40 common multiword verbs of non-advanced learners at different developmental stages—beginners, post-beginners, and pre-intermediate learners by comparing the JEFLL and BNC corpora. He used CA measures to explore the similarities and differences in the frequencies of 40 common multiword verbs in the writing of Japanese non-advanced learners at different developmental stages of learning. His CA clarified the relationships of these on by-plot charts.

These studies formed the methodological basis for the corpus approach employed here. I draw on CA to elucidate and visually represent the relationships between each variable, though the number of variables treated here is not large. Figure 14 shows the relationships between the corpora and particles. The distance between each dot shows the relative closeness of the relationships. The patterning of particles used in the native corpus LOCNESS and the German corpus G-ICLE have a close relationship, as indicated by the very close proximity of the dots. However, the Japanese learner corpus JEFLL and the Italian learner corpus I-ICLE are rather far away in the by-plot, which means that their patterns of particle usage display extreme differences from those of LOCNESS and G-ICLE. As for the specific particles, *back* and *out* are near to the JEFLL corpus but *on* is far away from it, which seems to mean that *on* is more difficult to use for Japanese high school students than *back* and *out*. In addition to the item scatter plot diagram shown in Figure 14, Table 23 shows the eigenvalues, contribution rates, and cumulative contribution rates of this correspondence analysis by using Excel. The second cumulative rate was 94.86%, so that this analysis is assumed to have the appropriate result with the score over 80%, according to Inoue (2013).

Table 23

Table of proper value

	1st	2nd	3rd
eigenvalue	0.0271	0.0221	0.0027
contribution rate (%)	52.18	42.68	5.14
cumulative contribution rate (%)	52.18	94.86	100.00

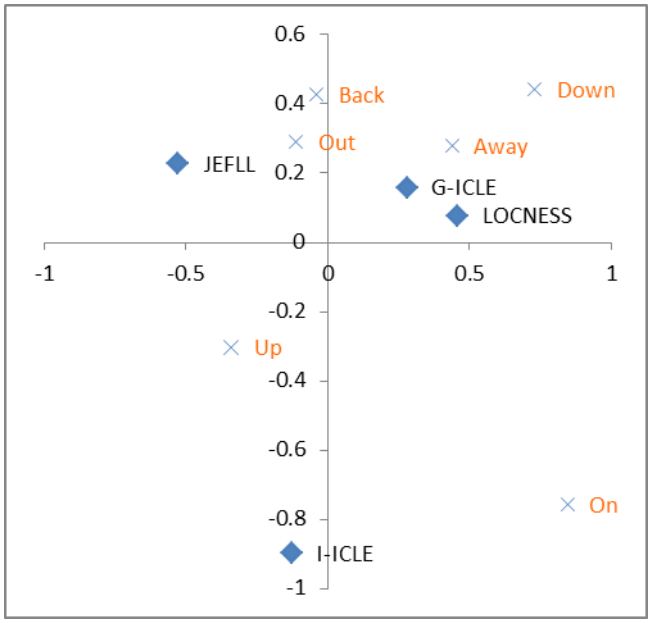

Figure 14. Correspondence analysis (6 most frequent particles across 4 corpora).

5.1.6 Investigation into word senses by Gardner and Davies (2007)

Gardner and Davies (2007) investigated the number of word senses possessed by frequent phrasal verbs. Table 24 displays number of word-senses from WordNet (Miller 2003) for the top 100 phrasal verbs in the BNC.

Table 24

Number of WordNet Senses for Top 100 Phrasal Verbs (PVs) in BNC

PV	Senses	PV	Senses	PV	Senses	PV	Senses
go on	5	carry on	4	put on	9	move in	3
carry out	2	go up	7	bring out	9	look around	1
set up	15	get out	7	move on	1	take down	4
pick up	16	take out	14	turn back	4	put off	5

Table continues

Table continued

go back	4	come down	5	put back	2	come about	1
come back	5	put down	7	go round**	5	go along	3
go out	6	put up	8	break up	19	look round**	0
point out	3	turn up	5	come along	2	set about	3
find out	4	get on	7	sit up	2	turn off	3
come up	12	bring up	8	turn round**	3	give in	2
make up	8	bring in	5	get in	5	move out	2
take over	8	look back	2	come round**	1	come through	4
come out	11	look down*	5	make out	10	move back	1
come on	5	bring back	2	get off	11	break off	5
come in	5	break down	8	turn down	5	get through	5
go down	8	take off	9	bring down	6	give out	4
work out	8	go off	6	come over	1	come off	3
set out	3	bring about	5	break out	5	take in	17
take up	13	go in	1	go over	4	give back	1
get back	4	set off	7	turn over	9	set down	6
sit down	3	put out	10	go through	5	move up	2
turn out	12	look out	2	hold on	5	turn around＋	0
take on	5	take back	6	pick out	2	look up	1
give up	12	hold up	7	sit back	2	hold out	5
get back	8	get down	7	hold back	5	put in	7

Note. Total senses = 559. PV = phrasal verb. *Consulted *Longman Dictionary of Phrasal Verbs*.

**WordNet = *around.* ***See *look around.* †See *turn round.* Gardner and Davies (2007, p.352)

5.1.7 PERC corpus

The Professional English Research Consortium (PERC) corpus contains Japanese learners' scientific essays. It is composed of about 17 million English words and sports 22 scientific field subcorpora such as mathematics, physics, and chemistry. Table 25 shows the 25 most frequently used English phrasal verbs in the PERC corpus.

Table 25

25 most frequent phrasal verbs in PERC corpus

1	carry out	3124	2	point out	520	3	make up	338
4	turn out	284	5	set up	233	6	rule out	197
7	take up	176	8	build up	144	9	bring about	136
10	cool down	136	11	take on	136	12	break down	111
13	go on	110	14	slow down	110	15	take over	83
16	follow up	78	17	end up	75	18	set out	74
19	open up	71	20	occur in	71	21	fill in	65
22	pick up	65	23	find out	58	24	break up	56
25	speed up	56	25	turn off	56			

5.2 Corpus comparison

Next, I would like to compare the PERC corpus with JEFLL in order to determine the characteristics of word selection by proficiency stage. Table 26 displays the frequency of phrasal verb *carry out* and its corresponding one-word verb *perform*. In PERC, but not in JEFLL, *perform* is preferable to *carry out.* This shows that *perform* is more difficult than *carry out* for beginners such as high school students but in scientific papers, it is essential or useful.

Table 26

"Carry out" versus "perform"

	PERC	JEFLL	LOCNESS
carry out	3124(192.65/1M words)	33(49.31/1Mwords)	186/1Mwords
perform	7848(483.97/1Mwords)	24(35.86/1Mwords)	
carry	4105(253.14/1Mwords)	105(156.88/1Mwords)	

Waibel (2007) shows that in LOCNESS, the frequency rate of phrasal verb *carry out* among native speakers is about 186 per one million words, which is almost the same as the 192.65 per million shown in PERC. (In G-ICLE, the German speakers' corpus, it is about 81 per one million words, and in I-ICLE, the Italian speakers' corpus, about 88 per million.) However, Table 27 shows that phrasal verbs such as *take on* and *set out* are underused in PERC as compared to the other corpora. For example, *take on* is used about 2.65 per 1 million words in PERC, while in LOCNESS it is about 114, in G-ICLE about 30, and in I-ICLE about 9 (Waibel, 2007). The phrasal verb *set out* seems difficult for Japanese high school students to use, so that we cannot find it in JEFLL corpus. In what follows, the data of LOCNESS, G-ICLE, and I-ICLE is based on Waibel (2007).

Table 27

"Take on" versus "set out"

	LOCNESS	G-ICLE	I-ICLE	PERC	JEFLL
take on	114	30	9	2.65	5.98
set out	38	17	9	3.76	0

Similarly, we compare phrasal verb *bring about* with its corresponding verb *cause*.

Table 28

"Bring about" versus "cause"

	LOCNESS	G-ICLE	I-ICLE	PERC	JEFLL
bring about	87	33	26	8.33	2.99
cause	492	368	596	354.53	56.78

In comparison to both native and other overseas corpora, Japanese corpora contain only a small number of instances of both phrasal verb *bring about* and *cause*. This is seemingly because they are rather difficult for Japanese speakers to acquire.

In general, in PERC, Japanese learners use fewer phrasal verbs (with the exception of *carry out*), as shown in Table 29.

Table 29

"Point out" versus "carry out"

	LOCNESS	G-ICLE	I-ICLE	PERC	JEFLL
point out	155	99	117	32.07	0
carry out	182	78	86	192.65	49.31

Waibel (2007) compares the use of the expressions *sum up, summarize, conclude,* and *in conclusion* using corpora and shows that native English speakers and Italian learners prefer to use the expression *to conclude* rather than *to sum up,* while German learners often use *to sum up*. Table 30 shows the result of his comparison.

Table 30

"Sum up," "summarize" and "conclude," "in conclusion"

	LOCNESS	G-ICLE	I-ICLE
to sum up/summing up	0	62	22
to summarize/summarizing, in sum/in summary	8	20	4
sum* total	8	82	26
to conclude/concluding, in conclusion	76	45	406

Waibel (2007, p.90)

Table 31

Log-likelihood analysis between Japanese learner corpora and the native corpus LOCNESS

	PERC—JEFLL	JEFLL—NICE	PERC—NICE	LOCNESS—PERC	LOCNESS—JEFLL	LOCNESS—NICE
carry out	98.64	0.86	10.88	0.01	35.96	8.01
perform	462.41	2.86	96.72			
carry	27.11	4.33	17.97			
bring about	2.99	0.70	0.01	65.06	46.92	10.81
cause	251.75	62.26	0.08	15.98	181.44	3.61
point out	41.97	23.42	1.39	65.38	106.21	8.20
go on	16.33	5.57	22.91	240.92	72.80	10.18
carry on	1.13	0.61	0.27	52.26	18.61	8.01
keep on	5.62	0.00	1.00	1.36	3.84	2.37
continue	8.25	37.17	28.32	244.58	186.19	11.45

Table 31 above presents the results of a log-likelihood analysis between the Japanese learner

corpus and native LOCNESS corpus. The log-likelihood score, invented by P.Rayson, is sometimes also called LLS, G score, or G_2 score, which is defined as the most suitable index for collocations. It can express frequency fully enough according to the ranking of the raw frequency. Major log-likelihood scores in the table include *perform* (462.41), *cause* (251.75) between PERC and the JEFLL corpus, *continue* (244.58), *go on* (240.92) between LOCNESS and PERC, *continue* (186.19), *point out (*106.21) between LOCNESS and JEFLL, *carry out* (98.64), *perform* (96.72) between PERC and JEFLL, *go on* (72.80) between LOCNESS and JEFLL, *point out* (65.38), *bring about* (65.06) between LOCNESS and PERC, *cause* (62.26) between JEFLL and NICE.

Table 32 below compares the uses of phrasal verbs of both native speakers and non-native Asian speakers of English in ICNALE (International Corpus Network of Asian Learners of English) corpus. Asian learners of English in this corpus are Chinese (CHN), Honkonger (HKG), Indian (IDN), Japanese (JPN), Korean (KOR), Pakistani (PAK), Thainese (THA), and Taiwanese (TWN). Native speakers display higher frequencies for *go on, point out, take away, take on,* and *end up*. On the other hand, Taiwanese and Japanese learners overuse *carry out*, *give up* and *set up*, compared to native speakers of English, while Chinese often use the phrasal verbs *grow up* and *give up*.

Table 32

Uses of phrasal verbs by native speakers and by Asian learners of English in ICNALE corpus

	NS	CHN	HKG	IDN	JPN	KOR	PAK	THA	TWN
go on	14/339 4.1%	5/234 2.1%	2/66 3.0%	1/88 1.1%	10/569 1.8%	2/273 0.7%	3/111 2.7%	1/386 0.3%	4/181 2.2%
carry out	4/14 28.6%	12/20 60%	2/4 50%	1/6 16.7%	9/19 47.4%	2/6 33.3%	1/15 6.7%	1/8 12.5%	4/5 80%

Table continues

Table continued

point out	6/53 11.3%	9/134 6.7%	4/39 10.3%	1/12 8.3%	2/126 1.6%	4/48 8.3%	2/24 8.3%	2/23 8.7%	3/30 10%
take away	9/250 3.6%	14/855 1.6%	3/99 3.0%	2/163 1.2%	0/249 0%	3/124 2.4%	1/230 0.4%	4/245 1.6%	4/215 1.9%
bring up	5/37 13.5%	1/159 0.6%	1/21 4.8%	0/39 0%	7/44 15.9%	3/26 11.5%	0/10 0%	0/46 0%	1/21 4.8%
take on	20/250 8.0%	5/855 0.6%	0/99 0%	3/163 1.8%	0/249 0%	1/124 0.8%	5/230 2.2%	5/245 2.0%	0/215 0%
end up	13/49 26.5%	0/39 0%	0/7 0%	1/13 7.7%	2/30 6.7%	0/25 0%	1/27 3.7%	0/21 0%	1/13 7.7%
grow up	13/25 52%	27/46 58.7%	0/3 0%	3/11 27.3%	30/56 53.6%	30/51 58.8%	5/15 33.3%	22/39 56.4%	17/26 65.4%
give up	6/158 3.8%	58/254 22.8%	13/67 19.4%	4/227 1.8%	47/327 14.4%	20/231 8.7%	5/167 3.0%	8/282 2.8%	27/111 24.3%
bring about	2/37 5.4%	9/159 5.7%	1/21 4.8%	1/39 2.6%	1/44 2.3%	2/26 7.7%	0/10 0%	2/46 4.3%	0/21 0%
find out	7/212 3.3%	8/310 2.6%	4/66 6.1%	3/88 3.4%	2/129 1.6%	7/148 4.7%	3/48 6.3%	9/314 2.9%	15/170 8.8%
make up	5/372 1.3%	10/844 1.2%	0/84 0%	2/494 0.4%	4/904 0.4%	3/521 0.6%	3/212 1.4%	2/1225 0.2%	4/441 0.9%
set up	3/28 10.7%	20/91 22.0%	9/18 50%	3/19 15.8%	13/39 33.3%	2/7 28.6%	1/7 14.3%	6/34 17.6%	8/53 15.1%

Table continues

Table continued

go back	2/339 0.6%	4/234 1.7%	0/66 0%	3/88 3.4%	3/569 0.5%	1/273 0.4%	1/111 0.9%	11/386 2.8%	2/181 1.1%
break down	0/9 0%	2/6 33.3%	0/2 0%	0/6 0%	1/4 25%	0/11 0%	0/3 0%	0/6 0%	0/1 0%
get away	1/363 0.3%	5/669 0.7%	3/149 2.0%	0/498 0%	0/923 0%	0/529 0%	1/319 0.3%	0/679 0%	0/369 0%
cut off	0/11 0%	0/2 0%	0/0 0%	0/2 0%	0/3 0%	0/4 0%	0/1 0%	1/1 100%	1/4 25%

Note. For each item, the number of phrasal verbs appears at the upper left, and the number of verbs appears at the upper right. Percentages below reflect the portion of verbs that are phrasal.

5.3 Influence of topic on phrasal verb usage

The JEFLL corpus is composed of six topics: breakfast, dreams, earthquakes, festivals, *otoshidama* (gift money), and *urashima* (a Japanese folk tale). Writers choose appropriate phrasal verbs according to the topic of discourse, so the frequencies of the verbs are strongly influenced by the topic. Table 33 shows the phrasal verb frequencies for each topic. In Table 33, the upper number of each item represents the total number and the lower one represents per million words.

The use of individual phrasal verbs seems to be greatly influenced by topics. For example, phrasal verbs such as *get up* and *wake up* were often used in the topic of *dream* or *urashima*. Phrasal verbs such as *take out*, *bring out*, *break out*, and *carry out* are mainly used in the topic of *earthquake*. *Sell out* is used in the topic of *festival*, while *give up* was used in *urashima* many times. Below (2) is a brief summary of the typical phrasal verbs shown in each topic of the JEFLL corpus.

Table 33

High-frequency phrasal verbs for six topics in JEFLL corpus

		breakfast	dream	earthquake	festival	otoshidama	urashima
1	get up	507 3692.39	174 2238.2	6 47.22	4 24.75	2 25.54	23 263.57
2	take out	0 0	6 77.19	686 5398.56	1 6.19	0 0	2 22.92
3	wake up	96 699.24	258 3319.18	3 23.61	4 24.75	2 25.54	28 320.87
4	come back	3 21.85	23 295.90	13 102.31	5 30.94	1 12.77	127 1455.35
5	run away	0 0	85 1093.53	76 598.09	0 0	0 0	8 91.68
6	bring out	0 0	0 0	139 1093.38	0 0	0 0	0 0
7	give up	5 36.42	2 25.73	6 47.22	8 49.50	4 51.08	75 859.46
8	go back	0 0	5 64.33	3 23.61	2 12.37	2 25.54	89 1019.89
9	go out	6 43.70	25 321.63	37 291.18	5 30.94	11 140.47	12 137.51
10	break out	0 0	1 12.87	80 629.57	0 0	0 0	0 0

Table continues

Table continued

11	fall down	0 0	42 540.33	2 15.74	1 6.19	0 0	8 91.68
12	grow up	8 58.27	3 38.60	7 55.09	3 18.56	9 114.93	11 126.05
13	carry out	1 7.28	0 0	30 236.09	2 12.37	0 0	1 11.46
14	sell out	0 0	0 0	0 0	27 167.06	1 12.77	2 22.92
15	make up	4 29.14	2 25.73	2 15.74	12 74.25	1 12.77	7 80.22

(2) Typical phrasal verbs in the JEFLL corpus

a. breakfast — get up, wake up

b. dream — wake up, get up, run away, fall down

c. earthquake — take out, bring out, break out, run away, carry out

d. festival — sell out

e. otoshidama — go out, grow up

f. urashima — come back, go back, give up, wake up, get up

A correspondence analysis was also performed upon the six topics and the 15 most frequent phrasal verbs. Figure 15 shows the relationships between the topics and the phrasal verbs. As displayed in the by-plot, the six topics are plotted at various distances from each other, with some near and others far. In the case of the distance between each phrasal verb, some were separated and others were close to one another. The plots also show the distance between each topic and phrasal verb. Some phrasal verbs were distant from the clusters of the topics, while others were close to

one another. Table 34 shows each eigenvalue, contribution rate, and cumulative contribution rate of the correspondence analysis between them respectively.

Table 34

Table of proper value

	1st	2nd	3rd	4th	5th
eigenvalue	0.8353	0.5986	0.3729	0.2233	0.0853
contribution rate (%)	39.49	28.30	17.63	10.56	4.03
cumulative contribution rate (%)	39.49	67.79	85.41	95.97	100.00

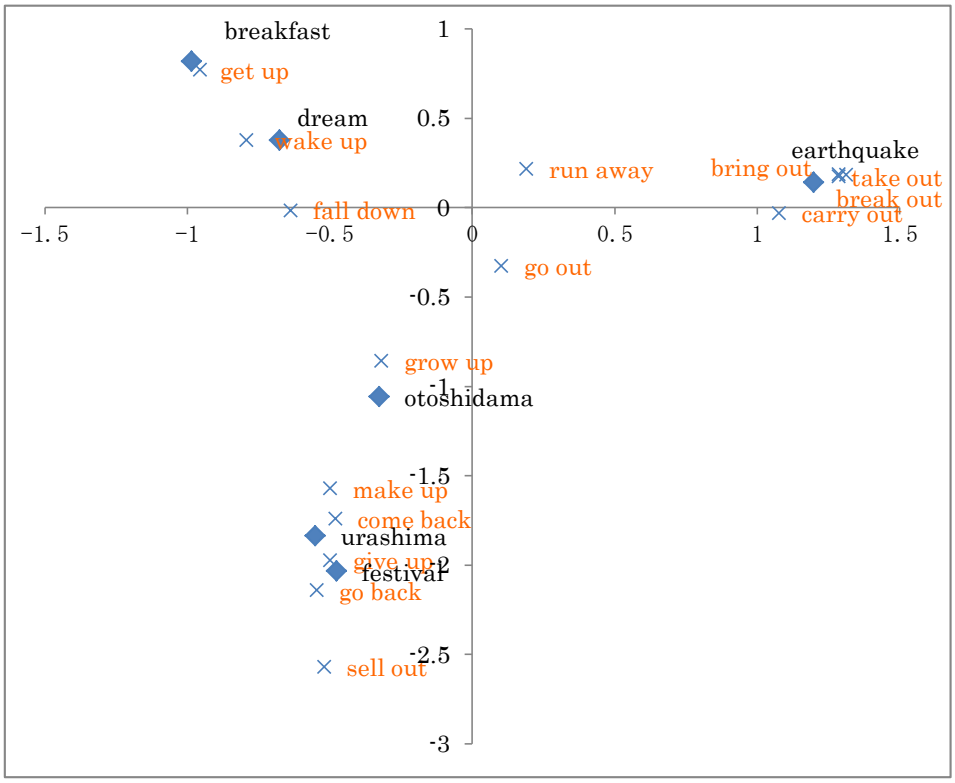

Figure 15. Correspondence analysis (6 topics and 15 phrasal verbs).

Through correspondence analysis, the strength of relationships among topics and phrasal can be

clearly seen. The topic *breakfast* and the phrasal verb *get up* had a very close relationship as shown in the figure they are very close and almost overlapping. *Dream* and *wake up* are also very close. The topic *earthquake* and phrasal verbs such as *take out, bring out,* and *break out* are also almost overlapping, indicating close statistical relationships.

As the correspondence analysis demonstrates, phrasal verbs are closely connected with discourse topic or theme. Therefore, it is significant to investigate and compare the data of the various corpora in order to know the objective uses of the phrasal verbs.

5.4 Development of Japanese high school students' VPC usage

The JEFLL corpus is subdivided into six grades of Japanese high school students, that is, Grade 7 through Grade 12. In this section, I investigate phrasal verb frequencies for each grade in order to show how Japanese high school students' usage of phrasal verbs develops.

Table 35

Frequency of phrasal verbs in JEFLL corpus by the grade level (tokens per million words)

	Phrasal verb	G7	G8	G9	G10	G11	G12
1	get up	352	1515	1792	1053	639	506
2	take out	0	651	917	1098	2099	317
3	wake up	39	307	1070	417	774	557
4	come back	78	238	425	88	270	329
5	run away	20	169	450	55	399	190
6	bring out	0	31	127	33	610	152
7	give up	156	225	144	154	82	139

Table continues

Table continued

8	go back	20	100	238	77	147	304
9	go out	0	100	161	121	199	203
10	break out	0	6	59	55	264	291
11	fall down	0	69	110	77	59	152
12	grow up	0	38	93	66	70	76
13	carry out	0	0	0	11	41	329
14	sell out	0	6	17	88	47	139
15	make up	0	13	42	33	70	76
16	look around	20	25	42	11	41	139
17	get back	0	19	51	0	6	101
18	go away	20	19	59	0	29	13
19	go down	0	44	8	11	59	0
20	go on	0	25	85	22	70	51
21	stand up	20	25	17	44	18	25
22	sit down	20	0	25	0	12	0
23	cry out	0	19	17	0	47	25
24	look back	0	25	25	22	6	38
25	look up	20	19	17	11	23	0

The preposition *to* is polysemous: its various meanings include concrete direction, as well more abstract or figurative meanings. In addition to its prepositional functions, *to* also works as an infinitival marker. In this table, Japanese learners appear to acquire knowledge of its literal directional meaning first, then later acquire figurative meanings.

Table 36

Development of prepositional verbs in JEFLL corpus

	Prepositional verb	G7	G8	G9	G10	G11	G12	Total
1	go to	250 4887.68	711 4451.09	400 3396.57	194 2129.62	418 2450.82	237 3000.80	1946 2097.60
2	come to	31 606.07	111 694.90	96 815.18	119 1306.31	159 932.25	75 949.62	591 883.04
3	listen to	20 391.01	79 494.57	40 339.66	22 241.50	42 246.25	11 139.28	214 319.75
4	live in	14 273.71	27 169.03	40 339.66	20 219.55	62 363.52	16 202.59	179 267.45
5	say to	3 58.65	25 156.51	70 594.40	10 109.77	34 199.35	19 240.57	161 240.56
6	belong to	0 0.00	10 62.60	11 93.41	35 384.21	59 345.93	21 265.89	136 203.20
7	look for	1 19.55	24 150.25	39 331.17	16 175.64	31 181.76	16 202.59	127 189.76
8	live without	3 58.65	14 87.64	23 195.30	20 219.55	26 152.44	10 126.62	96 143.44
9	think about	2 39.10	16 100.17	9 76.42	13 142.71	37 216.94	11 139.28	88 131.48

Table continues

Table continued

10	look like	0 0.00	19 118.95	27 229.27	5 54.89	28 164.17	10 126.62	89 132.98
11	play with	1 19.55	14 87.64	21 178.32	13 142.71	27 158.31	11 139.28	87 129.99
12	look at	4 78.20	17 106.43	13 110.39	8 87.82	20 117.26	12 151.94	74 110.57
13	talk with	1 19.55	17 106.43	13 110.39	9 98.80	22 128.99	6 75.97	68 101.60
14	make by	0 0.00	12 75.12	11 93.41	11 120.75	20 117.26	9 113.95	63 94.13
15	talk about	2 39.10	10 62.60	8 67.93	4 43.91	28 164.17	10 126.62	62 92.64
16	come in	13 254.16	6 37.56	9 76.42	8 87.82	16 93.81	1 12.66	53 79.19
17	get to	6 117.30	14 87.64	11 93.41	5 54.89	8 46.91	9 113.95	53 79.19
18	run to	1 19.55	12 75.12	30 254.74	2 21.95	16 93.81	5 63.31	66 98.61
19	think of	0 0.00	3 18.78	7 59.44	3 32.93	29 170.03	4 50.65	46 68.73
20	put on	2 39.10	6 37.56	3 25.47	3 32.93	26 152.44	3 37.98	43 64.25

Table continues

Table continued

21	run after	0 0.00	6 37.56	13 110.39	0 0.00	16 93.81	4 50.65	39 58.27
22	go into	0 0.00	10 62.60	9 72.42	1 10.98	13 76.22	6 75.97	39 58.27
23	talk to	1 19.55	4 25.04	15 127.37	4 43.91	10 58.63	6 75.97	40 59.77
24	walk in	0 0.00	13 81.38	15 127.37	2 21.95	6 35.18	3 37.98	39 58.27
25	live with	0 0.00	3 18.78	7 59.44	5 54.89	14 82.08	5 63.31	34 50.80

Note. The number in the first line indicates the actual number used. The number in the second line represents frequency per million words.

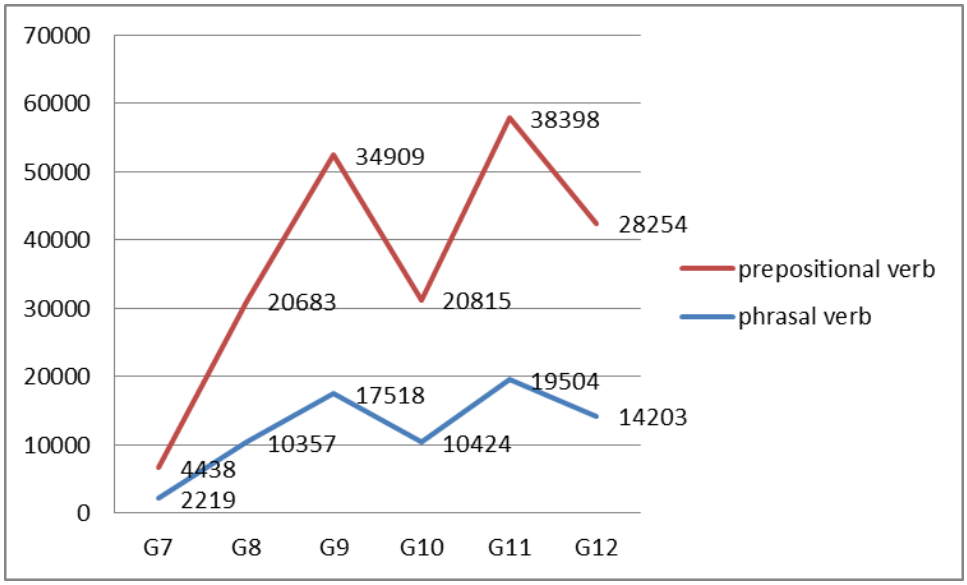

Figure 16. Comparison of the total of frequency of the 25 most common phrasal and prepositional verbs in each grade of the JEFLL corpus.

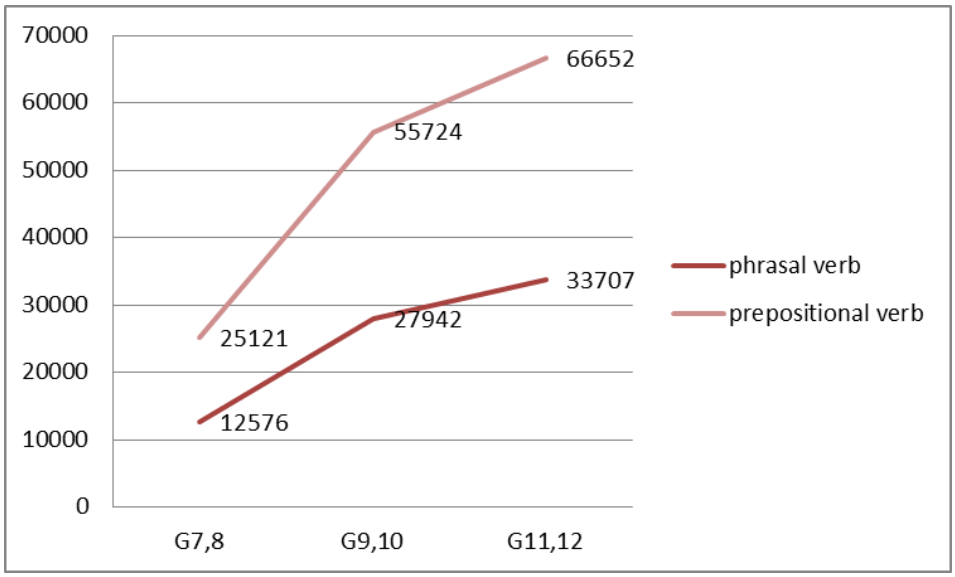

Figure 17. Comparison of the total of frequency of the 25 most common phrasal and prepositional verbs in each two grades of the JEFLL corpus.

According to Figure 16, prepositional verbs always outnumber phrasal verbs in each grade of the JEFLL corpus and the frequency grows as the grade goes. And Figure 17 shows that the frequency grows constantly as every two grades go. However, in the JEFLL corpus, grade 10 and grade 12 students decrease the uses of both verbs and we do not know the exact reason why. One possibility is that the JEFLL corpus is not so large, so that this phenomenon may have reflected its irregularities of the data collection. Another possibility may be the influence of the Japanese school system, that is, grade 10 students are just the freshmen of the senior high schools and grade 12 students need to study for the entrance examinations of the universities. These factors may affect the use of the verbs.

The following Table 37 shows the percentage of the infinitival *to* against preposition *to* in the prepositional verbs in each grade of the JEFLL corpus.

Table 37

Percentage of the infinitival "to" against preposition "to" in the frequent prepositional verbs in each grade of the JEFLL corpus

	Prepositional verb	G7	G8	G9	G10	G11	G12	Total
1	go to	250 (p236:i14) i5.6%	711 (p665:i46) i6.5%	400 (p376:i24) i6.0%	194 (p177:i17) i8.8%	418 (p360:i58) i13.9%	250 (p196:i41) i16.4%	3302 2097
2	come to	31 (p31:i0) i0%	111 (p102:i9) i8.1%	96 (p76:i20) i20.8%	119 (p98:i21) i17.6%	159 (p118:i41) i25.8%	75 (p53:i22) i29.3%	883 591
3	listen to	20(p20 i0)	79(p79 i0)	40(p40 i0)	22((p22 i0)	42(p42 i0)	11(p11 i0)	320 214
5	say to	3 (p3 i0) i0%	25 (p22 i3) i12%	70 (p68 i2) i2.9%	10 (p10i0) i0%	34 (p29 i5) i14.7%	19 (p17 i2) i10.5%	241 161
6	belong to	0	10 (p10 i0)	11 (p11 i0)	35 (p35 i0)	59 (p59 i0)	21 (p21 i0)	203 136
23	talk to	1(p1 i0) i0%	4(p4 i0) i0%	15(p14i0) i0%	4(p4 i0) i0%	10(p10 i0) i0%	6(p6 i0) i0%	60 40

Note. The number in each line indicates the actual number used. The abbreviation p indicates the number of prepositional uses, and i indicates the number of infinitival use. % means the percentage of infinitival use of *to* for prepositional use of *to*.

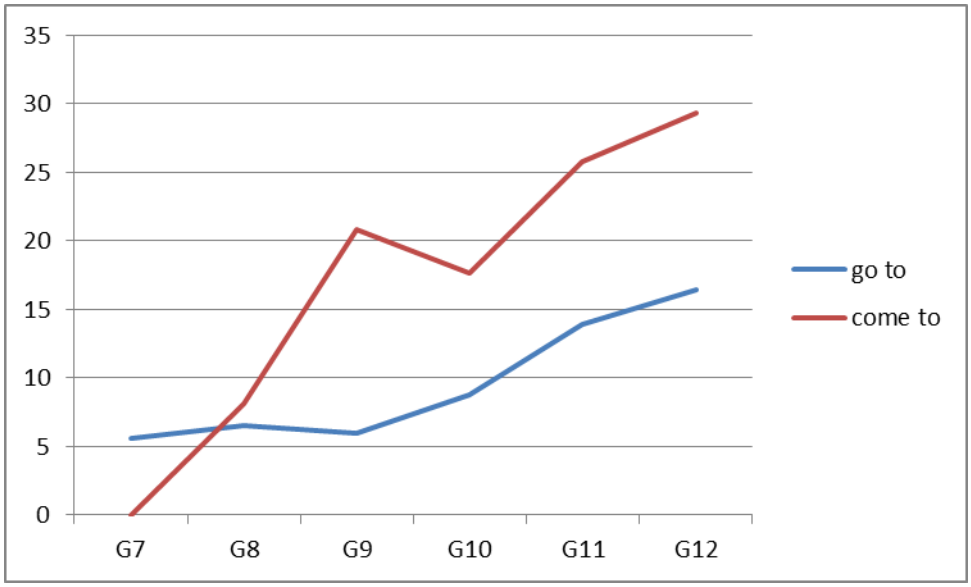

Figure 18. Percentage of infinitival "to" against prepositional "to" in "go to" and "come to" in each grade of the JEFLL corpus.

The above figure shows that the percentage of infinitival *to* increases as the grade proceeds, that is, younger students chiefly use *to* as a preposition, but older students seem to use *to* more as an infinitival marker.

Next, let's turn our attention to the uses of some verbs such as *marry, discuss*, and others, which seem to be difficult for Japanese students to use.

According to Levin (1993), *meet* and *marry* belong to the same verb category, that is, verb of "social interaction," but they differ syntactically in terms of their use of the preposition *with*: *meet with* is grammatical but *marry with* is not. It is well known that Japanese learners of English tend to use *marry with* instead of *marry*. In order to conduct an error analysis, the number of instances of *marry with* in JEFLL was calculated in each grade level. Eleven total instances were found: G8(1), G9(6), G11(2), G12(2). Similarly, *discuss about* is ungrammatical and is said to be commonly used by Japanese learners of English. Two instances of *discuss about* were found in JEFLL, G11(1), G12(1), as shown in Table 38 below.

Table 38

Frequency of "marry," "discuss," "meet," "speak," "talk," and "graduate" in JEFLL corpus

Verb form	G7	G8	G9	G10	G11	G12	Total
marry	5 97.75	22 137.73	36 305.69	8 87.82	16 93.81	16 202.59	103 153.90
discuss	0	0	1 8.49	0	2 11.73	2 25.32	5 7.47
meet	22 430.12	94 588.47	64 543.45	16 175.64	67 392.84	35 443.16	298 445.25
speak	24 469.99	30 187.81	19 161.34	7 76.84	35 205.21	11 139.28	126 188.26
talk	6 117.30	50 313.02	61 517.98	31 340.30	88 515.96	34 430.49	270 403.42
graduate	0	1 6.26	1 8.49	0	11 64.50	9 113.95	22 32.87

Note. The number in the first line refers to the actual number of tokens. The number in the second line presents frequency per million words.

Meet occasionally appears in preposition combinations, other than *meet with*; as Table 40 shows, a number of *meet to* expressions in the JEFLL corpus, and it is evident that *meet to* precedes *meet with* in the grade order. This suggests that the preposition *to* may be learned and used earlier than *with*. In the case of the verb *talk*, it is followed by prepositions *to*, *with*, and *about* almost equally.

Table 39

Uses of "marry,""discuss," " meet," "speak," "talk," and "graduate" in the JEFLL corpus

Verb form	G7	G8	G9	G10	G11	G12
marry	t(4) *wasn't marry (1)	t(12) i(5) *is marry(1) *to(1) *with(1) got married(1) *marry got(1)	t(22) i(8) *with(6)	t(4) i(3) got married(1)	t(7) i(5) *with(2) got married(2)	t(4) i(8) *with(2) get married (2)
discuss	0	0	t(1)	0	i(1) *about(1)	t(1) *about(1)
meet	t(19), i(3)	*meet to(4), i(9), t(81)	*meet to(1), i(3), t(60)	t(16)	*meet to(1), meet with(2), i(4)	meet with(1), i(2)
speak	to(7), about(2) i(1), t(14)	to(4), about(4), i(6)	to(3), about(1), with(1), i(4)	to(1), with(2), i(2)	to(5), with(2), about(2), of(3), i(9)	to(1), about(2), i(4)

Table continues

Table continued

talk	to(1), with(1), about(2), t(2)	to(4), with(16), about(10), i(7)	to(16), with(13), about(8), i(3)	to(4), with(9), about(4), i(3)	to(11), with(26), about(29), i(7)	to(8), with(6), about(10), i(3)
graduate	0	adj(1)	from(1)	0	from(6), *O(4), adj(1)	from(4), *O(2), i(1), noun(1)

Note. i=intransitive use, t =transitive use, adj=adjective use, O=having object, * = ungrammatical. The word or words represent collocations or usage and numbers in parentheses refer to actual number of tokens.

Uchida (2012) presented the results of a frequency-based analysis of multi-word verbs (or MWVs, the equivalents of verb-particle combinations) appearing per million words in the spoken portion of the BNC. The top 10 MWVs produced by these British native speakers in that corpus were *look at* (670.47), *go on* (439.65), *talk about* (349.29), *say to* (275.27), *come on* (263.09), *put in* (256.19), *give to* (186.10), *think of* (175.71), *put on* (174.77), and *talk to* (162.25). Of these, 24 were prepositional verbs and 16 were phrasal verbs. Other examples of frequent prepositional verbs (defined here as those with a frequency of more than 100 per million words) were *think about* (151.09), *do for* (126.31), *come from* (124.43), *look like* (107.32), *look for* (107.14), and *listen to* (105.44). In comparison, the relative frequencies of verbs ranked between 19 and 40 were rather low, occurring less than 100 times per million words; for example, the phrasal verb *get up* (83.81) occupied 19th place; *sit down* (68.56) appeared, in 21st, and *take out* (62.77), in 22nd. As we have already seen, *get up* and *take out* appeared most frequently in the JEFLL corpus.

Table 40 shows the percentage of adverbial particles in the verb phrases, following Tono (2007).

Tono (2007) did not report the frequency of phrasal verbs directly, but the percentage of adverbial particles indirectly reflects that of phrasal verbs. So, it is supposed that the percentage in grade 7 is about 0.5 and the percentage after grade 7 is over 2.6, yielding an average of about 2.9 percent.

Table 40

Percentages of verbs and adverbial particles in each grade in JEFLL corpus

	G7	G8	G9	G10	G11	G12	Average
Verb (A)	18.3%	19.4%	20.0%	19.0%	19.1%	19.3%	19.2%
Adverbial Particles (B)	0.1%	0.5%	0.7%	0.6%	0.8%	0.6%	0.6%
B/A	0.5%	2.6%	3.5%	3.2%	4.2%	3.1%	2.9%

Table 41

Comparison of frequency of phrasal verbs and prepositional verbs in JEFLL and COCA (academic, spoken) corpora

Phrasal verb	JEFLL	COCA academic	COCA spoken	Prepositional verb	JEFLL	COCA academic	COCA spoken
get up	1069.80	5.13	45.83	go to	2097.60	172.93	3007.16
take out	1038.43	4.93	26.68	come to	883.04	183.3	306.13
wake up	584.21	4.21	36.07	listen to	319.75	40.66	152.5
come back	256.99	12.85	246.83	live in	267.45	104.73	143.8
run away	252.51	3.58	12.54	say to	240.56	41.13	150.61

Table continues

Table continued

bring out	207.69	5.99	13.7	belong to	203.20	47.68	21.85
give up	149.41	23.76	65.31	look for	189.76	46.38	152.87
go back	150.91	19.74	190.98	live without	143.44	1.37	2.44
go out	143.44	9.62	129.91	think about	131.48	48.59	184.2
break out	121.03	7.14	12.51	look like	132.98	25.27	156.45
fall down	79.19	1.39	5.76	play with	129.99	11.84	23.01
grow up	61.26	22.57	89.25	look at	110.57	113.75	675.09
carry out	50.80	62.25	26.48	talk with	101.60	12.49	77.79
sell out	44.82	1.35	5.81	make by	94.13	42.01	19.86
make up	41.84	46.91	54.35	talk about	92.64	56.6	796.45
look around	43.33	3.05	13.37	come in	79.19	27.96	187.92
get back	26.89	4.4	61.69	get to	79.19	31.04	517.72
go away	23.91	4.88	61.62	run to	98.61	3.95	8.16
go down	23.91	7.24	80.09	think of	68.73	51.54	126.13
go on	23.91	52.55	316.37	put on	64.25	11.27	48.66
stand up	23.91	7.92	48.44	run after	58.27	0.28	0.91
sit down	23.91	7.12	54.98	go into	58.27	23.35	127.48
cry out	22.41	2.9	4.24	talk to	59.77	24.61	304.23
look back	19.42	8.42	34.78	walk in	58.27	4.59	24.09
look up	16.44	4.92	18.09	live with	50.80	22.92	44.44
Average	41.44	13.79	67.43	Average	237.35	46.01	316.20

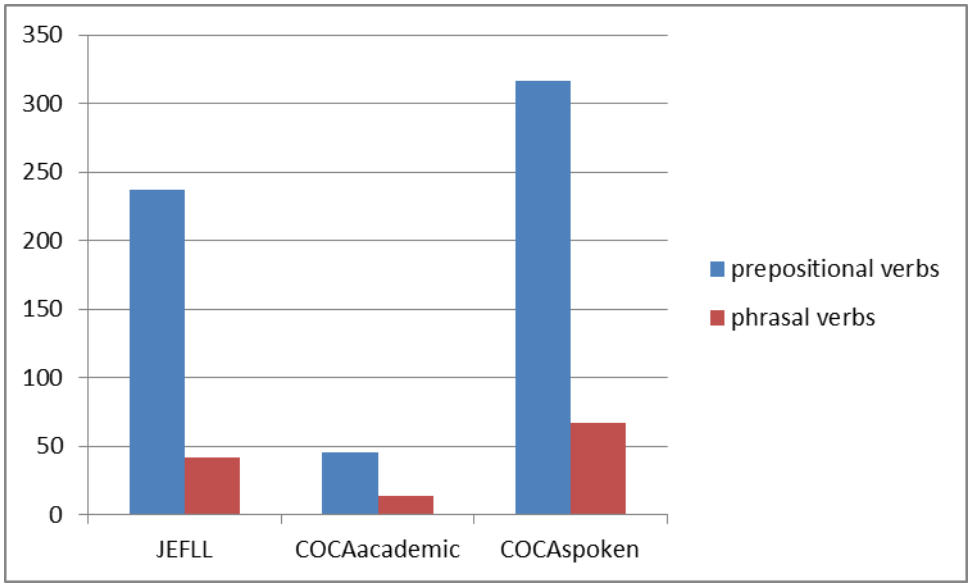

Figure 19. Comparison of the average frequency of the 25 most frequent phrasal verbs and propositional verbs in JEFLL, COCA (academic), and COCA (spoken) corpora.

Figure 19 above compares the frequency of the top 25 frequent phrasal verbs and prepositional verbs in the JEFLL and COCA corpora. The average frequency of phrasal verbs was lower than that of the prepositional verbs both in Japanese and native speakers' corpora.

Table 42

Comparison of phrasal verb frequency between LOCNESS, JEFLL, PERC, NICE, COCA (academic), and COCA (spoken) corpus

	LOCNESS		JEFLL	PERC	NICE	COCA (academic)	COCA (spoken)
rank	Phrasal verb	p.m.w.	p.m.w.	p.m.w.	p.m.w.	p.m.w.	p.m.w.
1	go on	201	47.81	6.78	69.01	52.55	316.37

Table continues

Table continued

2	carry out	182	50.80	192.65	69.01	62.25	26.48
3	point out	155	0	32.07	51.76	90.72	79.13
4	take away	117	8.96	0	17.25	8.28	38.18
5	bring up	110	0	1.17	43.13	8.14	44.72
6	take on	102	5.98	8.39	17.25	48.51	71.67
7	end up	98	0	4.63	25.22	20.38	82.44
8	grow up	98	61.26	1.11	163.90	22.57	89.25
9	give up	95	149.41	1.48	103.52	23.76	65.31
10	bring about	87	2.99	8.33	8.63	27.44	10.72
11	find out	72	8.96	3.58	86.26	22.35	162.08
12	make up	68	41.84	20.84	17.25	46.91	54.35
13	set up	64	4.48	14.37	17.25	32.83	67.62
14	go back	61	149.41	2.78	60.39	19.74	190.98
15	break down	53	13.45	6.85	0	17.55	19.91
16	get away	53	2.99	0	0	3.00	45.11
17	cut off	45	1.49	2.41	0	7.65	20.49
18	be out	45	7.47	0.49	0	2.14	976.12
19	bring in	42	0	1.05	0	11.71	38.97
20	carry on	42	2.99	1.43	0	8.86	11.55
21	go out	42	143.44	0.43	172.53	9.62	129.91
22	run up	42	1.49	0.19	8.63	0.66	4.60
23	turn out	42	2.99	17.51	8.63	33.39	82.87

Table continues

Table continued

24	fit in	38	0	0.49	0	2.37	4.71
25	get out	38	13.45	0.31	0	6.92	122.05
Average		78.6	28.87	13.18	37.28	23.61	110.62

Note. p.m.w. stands for per million words.

Figure 20 shows the result of correspondence analysis between the 25most frequent phrasal verbs and 6 corpora based on the data in Table 42. It shows the relationships between each corpus and the phrasal verbs. As displayed in the by-plot, six corpora were plotted various distances from each other, with some near and others far. In the case of the distance between each phrasal verb, some were separated and others were close to one another. The plots also show the distance between each corpus and phrasal verb. Some phrasal verbs were distant from the clusters of the corpora, while others were close to one another.

Through the correspondence analysis, the relationships among the groups were found to be fairly distinct from one another. The COCA (spoken) corpus and the phrasal verbs *get out* and *be out* had close relationships, as shown in their closely plotted positions in Figure 19. Similarly, the COCA (academic) and LOCNESS corpora also have a close relationship because they also lie very near one another. The NICE and JEFLL corpora are also close to each other, while PERC is not so close to these two but lies near to COCA (academic), as shown in the by-plot. The phrasal verbs *go out, give up, grow up,* and *go back* are associated with the Japanese learner corpora JEFLL and NICE. In this way, this chart of correspondence analysis seems to express particular relationships between corpora and phrasal verbs.

Table 43

Table of proper value

	1st	2nd	3rd	4th	5th
eigenvalue	0.3266	0.2274	0.1261	0.0477	0.0298
contribution rate (%)	43.11	30.02	16.64	6.30	3.93
cumulative contribution rate (%)	43.11	73.13	89.77	96.07	100.00

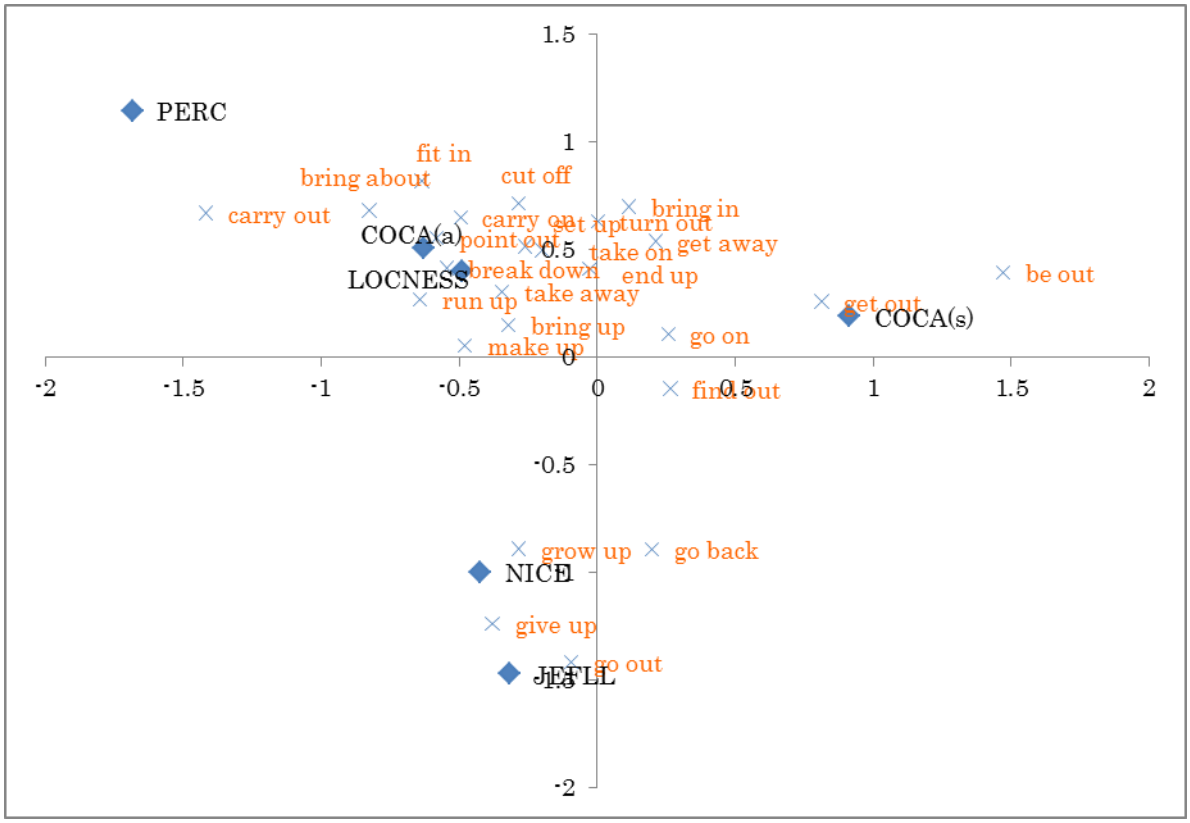

Figure 20. Correspondence analysis (25 phrasal verbs and 6 corpora).

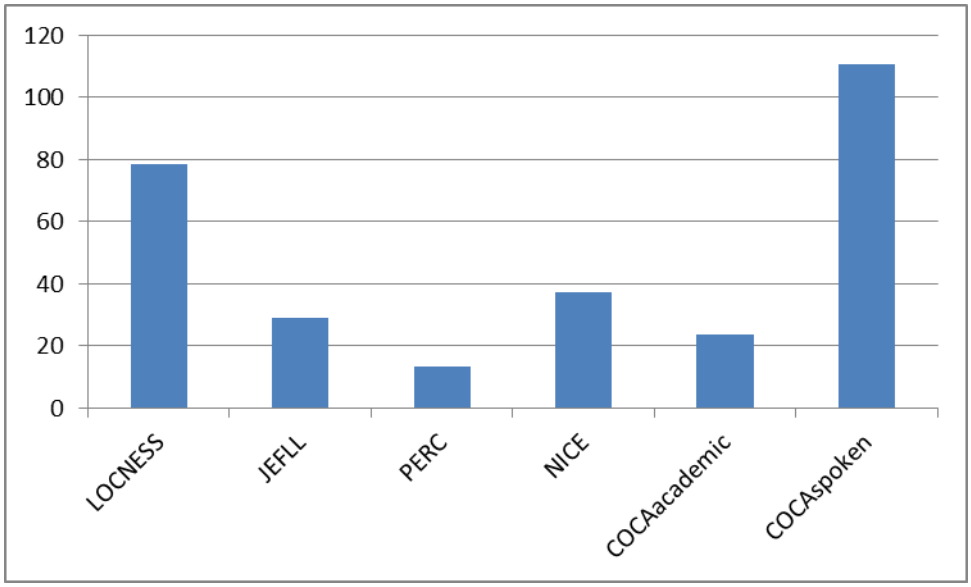

Figure 21. Comparison of the average frequency score of the 25 most frequent phrasal verbs across six corpora.

For the top 25 phrasal verbs in the native speaker corpus LOCNESS cited above, the average frequency was 78.6 per million words. In contrast, in the academic written corpus COCA, the average frequency of phrasal verbs was rather low, that is, 23.61 per million words; and in the Japanese academic corpus PERC the frequency was lower still, 13.18. On the other hand, the average frequency of phrasal verbs in the spoken register of the COCA corpus was 110.62. This reflects the general tendency for phrasal verbs to appear more often in spoken contexts than in academic or formal written ones. And it is also apparent that Japanese learners use less phrasal verbs than native speakers of English do: the average frequency of phrasal verbs in the Japanese corpora JEFLL, PERC, and NICE were rather low compared to those in the native corpora LOCNESS and COCA.

5.5 Semantic distinctions between phrasal verbs

Phrasal verbs, like all verbs, take on various meanings, whether concrete, abstract, metaphorical,

or figurative. Using a corpus methodology, I subcategorize the meanings of these verbs into two types, concrete and abstract, and in order to more closely characterize their usage, I give the proportions of concrete and abstract meanings for each verb.

Table 44

Comparison of object type percentages between COCA and JEFLL

	Object	COCA	JEFLL
take up	concrete object	21.1%	0
	abstract object	54.5%	100.0%
	person(s)	8.5%	0
	time	15.9%	0
run into	concrete object	24.5%	100.0%
	abstract object	48.3%	0
	person(s)	20.7%	0
	time	6.5%	0
get through	concrete object	12.8%	33.3%
	abstract object	22.2%	0
	person(s)	13.0%	0
	time	52.0%	66.6%
get over	concrete object	12.7%	0
	abstract object	50.9%	100.0%
	person(s)	20.7%	0
	time	15.7%	0

Table 44 shows the frequency analysis of some VPC object types in the JEFLL and COCA corpora. The wide variety of objects in the COCA corpus fell into four main types: concrete, abstract, person(s), and time. Concrete objects are nouns like *wall, house, arms, pens,* and so on. Abstract objects are represented as *cause, process, space, trouble, problem, fear, shock, idea*, and so on. Person(s) refer to human objects such as *people, women, children, father,* and so on. Time includes words such as *years, hours, week,* and so on.

As Table 44 indicates, the VPCs in the COCA corpus contain a wide variety of objects, while the ones in JEFLL have rather restricted objects. This may also be a vocabulary issue related to the limited number of phrasal verbs used by Japanese learners.

5.6 Elicitation test results

5.6.1 Particle movement among Japanese university students, senior high school students, and native speakers

In phrasal verbs, particles can come either right after the verb or directly after the object. Some linguists have tried to explain this distinction, but so far the problem has not been convincingly resolved. This study uses corpus data to help to clarify this linguistic issue.

I conducted elicitation test research upon 10 native speakers (all Americans in their twenties living as university exchange students in Japan, 8 males and 2 females) and Japanese learners of English (84 university students and 77 high school students, including 40 twelfth graders and 37 eleventh graders. All the elicitation test items in this study are shown in Appendix C. Table 45 shows the results of the particle movement test Question (4-1) in Appendix C.

Table 45

Comparison of correct answer percentages on particle movement between native speakers and Japanese learners (%)

		NS	JUS	JHS	JHSG12	JHSG11
1	get over it	90.0	34.4	23.4	35.0	10.8
2	use it up	100.0	76.6	54.5	62.5	45.9
3	sleep through it	70.0	46.8	40.3	30.0	51.4
4	cross them out	80.0	60.6	63.6	65.0	62.2
5	throw a coat on	90.0	36.2	48.1	42.5	54.1
6	stick at it	60.0	28.7	39.0	35.0	43.2
7	set about the problem	90.0	63.8	44.2	42.5	45.9
8	live for football	100.0	53.2	51.9	55.0	48.6
9	get through it	80.0	69.1	66.2	72.5	59.5
10	drink to our success	100.0	33.0	54.5	52.5	56.8
Number		10	84	77	40	37
Average		86.0	50.2	48.6	49.3	47.8

Note. NS＝Native speakers of English, JUS=Japanese university students, JHS=Japanese high school students, JHSG12=Grade 12 students at Japanese high school, JHSG11=Grade 11 students at Japanese high school.

As for the questions about particle position, the average score of native speakers was 86.0, but the ones of Japanese learners were 50.2 for university students, and 48.6 for senior high school students. Figure 22 below shows the average scores of native speakers, Japanese university students, and Japanese senior high school students in the elicitation test on particle position. As for idiomatic phrasal verbs such as *live for football* or *drink to our success*, native speakers' scores

are perfect, while Japanese learners' scores are rather low. Idiomatic expressions that are quite common for native speakers seem to pose difficulties for Japanese learners, who may have trouble imagining their meanings.

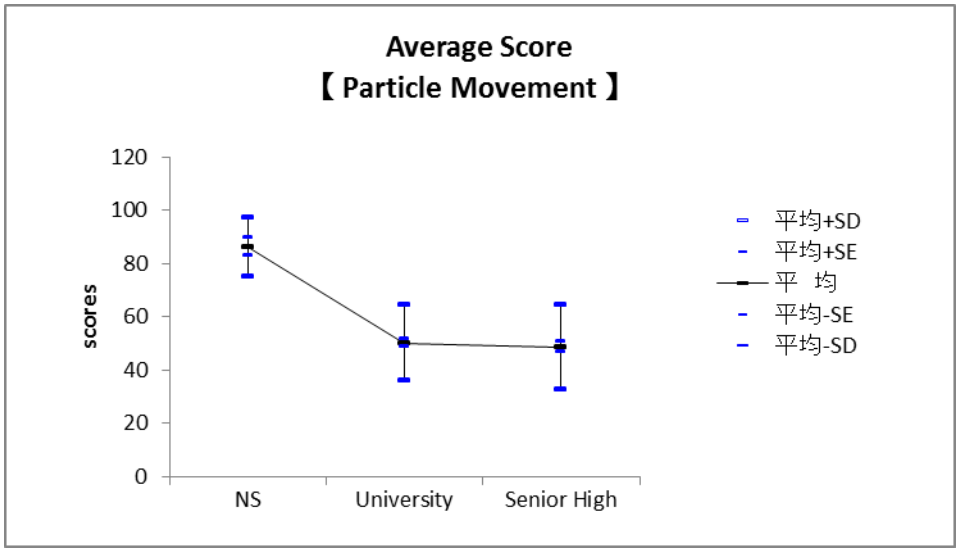

Figure 22. Comparison of the test scores on particle position: native speakers, Japanese university students, and Japanese senior high school students. In the graph, 平均 means average.

Using Excel, I conducted Kolmogolov-Smirnov (K-S) test on these scores in order to identify normal distribution. The result suggests that they do not distribute normally, with the fact that the participant size of native speakers in this research is very small in number and their histogram do not show normal distribution. Furthermore, Leven test was conducted to verify their homogeneity of variance, but the result did not clearly show their homoscedasticity. Thus, I carried out the method of the nonparametric statistics instead of the parametric one. As a result, Steel-Dwass, one of nonparametric statistical analysis, indicates that native speakers' scores and Japanese learners' scores are significantly different but there is no significant difference between Japanese university and high school students.

5.6.2 Comparison of elicitation test scores: understanding meanings of phrasal verbs

Next, I conducted elicitation tests to compare how native speakers and Japanese learners understand the meanings of phrasal verbs. Table 46 is the result of Question (4-2) in Appendix C.

Table 46

Percentages of correct answers for native speakers and Japanese learners: three meanings of "get through"

	NS		JUS		JHS	
complete	4/10	40%	25/90	28%	3/78	4%
finish	5/10	50%	41/90	46%	9/78	12%
get over	7/10	70%	46/90	51%	7/78	9%

Note. NS=Native speakers of English, JUS=Japanese university students, JHS=Japanese high school students.

Table 46 shows the scores of native speakers, Japanese high school students, and Japanese university students on test items assessing the three meanings of the phrasal verbs *get through.* The Japanese university students' scores are close to those of native speakers, while those of Japanese high school students are notably lower.

As shown in the table below, which is the result of Question (4-3) in Appendix C, native speakers' close suitable synonyms, but Japanese university and high school students did not. The verb *leave*, for example, native speakers chose *be off* as a synonym, while Japanese learners may have memorized *get off* as the meaning of *leave*, rather than the phrasal verb *be off* used by native speakers.

Table 47

Comparison of synonym understanding between native speakers and Japanese learners

		NS		JUS		JHSG12		JHSG11	
		#	%	#	%	#	%	#	%
switch on a light	turn on a light	9	90	64	74	24	63	6	18
	put on a light	1	10	20	24	9	24	8	24
	others	0	0	2	2	5	13	19	58
leave	be off	5	50	2	2	1	3	8	25
	go off	4	40	21	24	3	8	9	28
	get off	1	10	58	67	25	68	13	41
	others	0	0	5	6	8	22	2	6
write down	take down	6	55	17	20	10	27	15	45
	put down	5	45	53	64	16	43	5	15
	others	0	0	13	16	11	30	13	39
climb up the tree	go up the tree	9	90	40	49	5	14	9	27
	get up the tree	1	10	11	13	9	24	10	31
	others	0	0	31	38	23	62	14	42
swallow down the medicine	drink down the medicine	7	70	32	38	7	20	10	29
	get down the medicine	3	30	25	30	9	26	7	21
	others	0	0	27	32	19	54	16	47

Note. NS=Native speakers of English, JUS=Japanese university students, JHSG12=Japanese high school students (grade 12), JHSG12=Japanese high school students (grade 11).

5.6.3 Comparison of phrasal verb avoidance between native speakers and Japanese learners

On the basis of previous studies, this section concerns Research Questions 2 and 3, focusing on the results of the elicitation tests. The evidence here suggests that Japanese learners' avoidance of phrasal verbs may be affected by semantic type (i.e., figurative vs. literal usage): multiple-choice tests show that advanced Japanese learners of English are more prone to avoid figurative phrasal verbs than literal ones.

Table 48

Elicitation scores (multiple-choice) between native speakers and Japanese learners (%)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Av
NS15	100	93	73	73	73	73	93	93	87	80	80	93	100	73	80	79
NS10	100	100	90	70	90	80	70	100	70	100	100	70	80	60	90	85
JUS	94	28	41	27	12	57	47	77	34	29	28	28	65	43	37	43
JHSG12	85	26	33	13	21	51	51	54	28	18	36	5	49	21	31	33
JHSG11	62	10	23	23	21	33	33	28	21	23	28	15	15	23	23	25

Note. NS15 means native speakers (n=15) whose scores are cited from Liao and Fukuya (2004, pp.102-104). NS10 means native speakers (n=10) whose scores are from the present study. Av means average score.

The data from the multiple-choice test are shown in Tables 48 and 51. For all 15 questions, the Japanese learners have lower scores than the native speakers, which means that they used fewer phrasal verbs than the native speakers did. Among the 15 phrasal items, as shown in Appendix C, 11 are figurative and four are literal: (1) *get up*, (13) *go away*, (14) *take away*, and (15) *come in*. Table 51 shows that the difference between native speakers and Japanese learners is larger for figurative meanings than for literal meanings. Table 48 compares the average scores of the 15

questions for native speakers and for Japanese learners, which are represented in Figure 23.

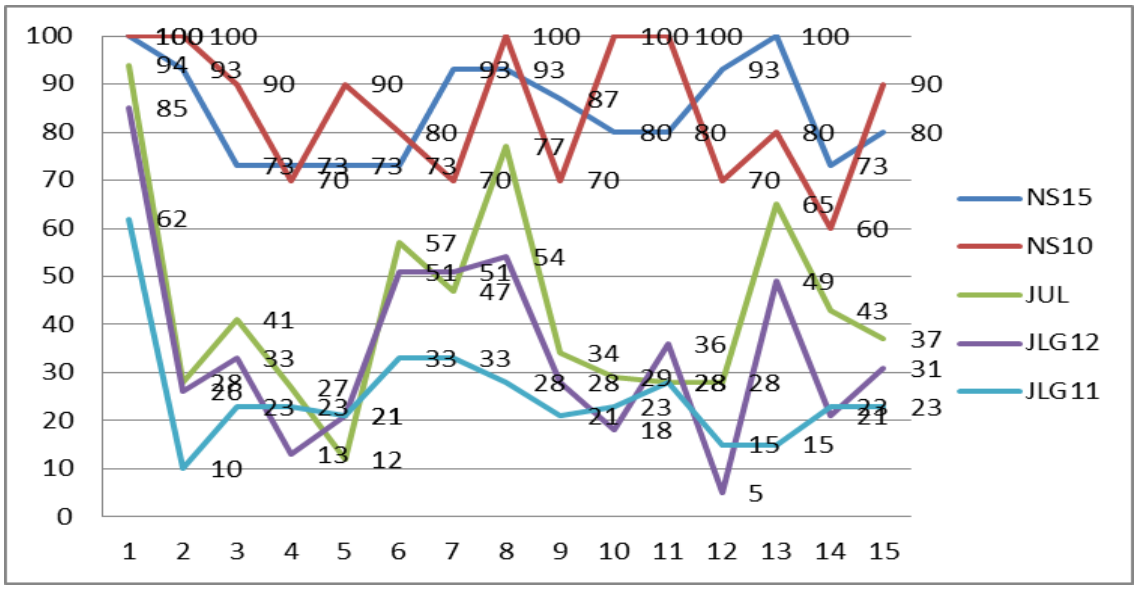

Figure 23. Comparison of elicitation scores (multiple choice) between native speakers and Japanese learners (%).

Following the methods of Liao and Fukuya (2004), other than multiple-choice test, I conducted a translation test and a recall test with a subset of the Japanese university students. The results are shown as follows.

Table 49

Comparison of multiple choice test and translation test scores (%) (Japanese university students, n=14)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Av
multiple	100	43	21	29	7	29	71	50	29	21	21	14	43	29	29	36
translation	57	0	0	0	0	0	0	0	0	0	0	0	7	0	7	4

Note. Av stands for Average.

As shown in Table 49, the scores of translation test were very low, almost zero, and it shows that it seems too difficult to compare. And the scores of the recall test were also lower than those of multiple-choice test. In this sense, the multiple choice tests seem most appropriate for measuring Japanese learners' tendency to use phrasal verbs.

Table 50

Scores on recall test (%) (Japanese university students, n=26)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Av
recall	92	27	0	0	4	23	15	35	12	4	4	4	19	8	15	17

In Table 51, the score difference between native speakers and Japanese learners for figurative meanings seems larger than the difference for literal meaning. This suggests the pedagogical implication that Japanese learners should focus more on figurative uses of phrasal verbs.

The table below shows that native speakers in general prefer to use phrasal verbs than Japanese learners of English. Their average scores were over eighty percent, while those of Japanese learners were about forty. Conversely, the average scores for the corresponding verbs of the native speakers were lower than those of Japanese learners. Native speakers made no mistakes in the test, choosing none of the distractor responses but Japanese learners made a few mistakes. On the average, the university students selected distractors in 15.6 % of responses, and the high school students selected them in 36.4% of responses. Another finding is that native speakers prefer figurative phrasal verbs and literal corresponding verbs, while Japanese learners use more of literal phrasal verbs and figurative corresponding verbs, according to the average scores in detail.

Table 51

Comparison of phrasal verb preference

		Phrasal verb (%)			Verb (%)			Distractor (%)		
		NS	JUL	JHL	NS	JUL	JHL	NS	JUL	JHL
1	get up*	100	94.0	77.0	0	2.4	8.1	0	3.6	14.9
2	show up	100	27.5	18.9	0	68.8	47.3	0	3.7	33.8
3	brush up upon	90	41.0	29.7	10	41.0	36.5	0	18.0	33.8
4	let down	70	27.4	19.2	30	57.1	34.2	0	15.5	46.6
5	go off	90	11.9	20.5	10	76.2	41.1	0	11.9	38.4
6	hold on	80	51.9	43.2	20	45.7	27.0	0	2.4	29.8
7	put out	70	47.0	44.6	30	39.8	16.2	0	13.2	39.2
8	make up	100	77.1	45.1	0	7.2	14.1	0	15.7	40.8
9	give in	70	34.1	25.7	30	39.0	29.7	0	26.9	44.6
10	turn down	100	29.1	23.4	0	50.6	34.4	0	20.3	42.2
11	run into	100	27.5	39.7	0	53.8	33.3	0	18.7	27.0
12	show off	70	28.4	14.3	30	39.5	33.3	0	32.1	52.4
13	go away*	80	65.0	42.2	20	20.0	28.1	0	15.0	29.7
14	take away*	60	43.2	28.1	40	37.0	31.3	0	19.8	40.6
15	come in*	90	36.7	33.3	10	45.6	34.9	0	17.7	31.8
Average		84.7	42.8	33.7	15.3	41.6	30.0	0.0	15.6	36.4
Literal average (*)		82.5	59.7	45.2	17.5	26.3	25.6	0.0	14.0	29.3
Figurative average		85.5	36.6	29.5	14.5	47.2	31.6	0.0	16.2	39.0

Note. NS=Native speakers of English, JUL=Japanese university learners, JHL=Japanese high school learners.

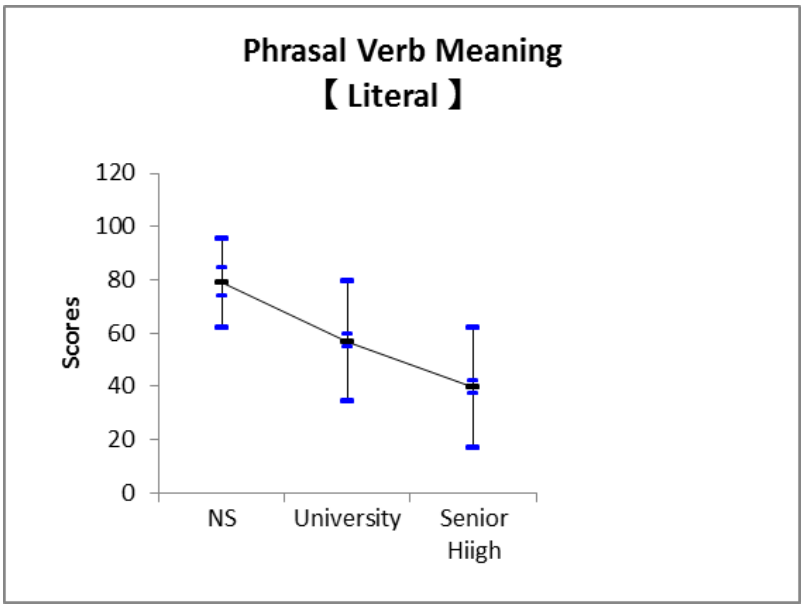

Figure 24. Comparison of the test scores for literal phrasal verb meanings between native speakers, Japanese university students, and Japanese senior high school students.

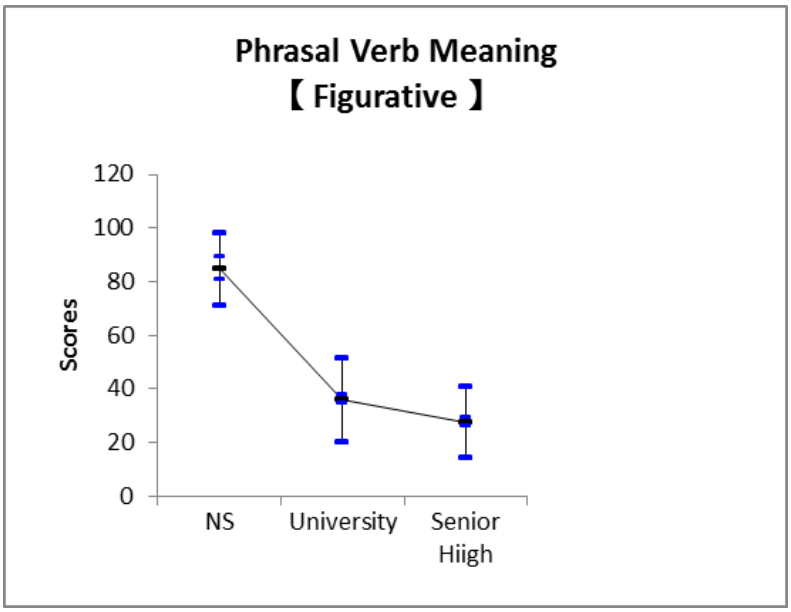

Figure 25. Comparison of the test scores for figurative phrasal verb meanings between native speakers, Japanese university students, and Japanese senior high school students.

Figures 24 and 25 compare the test scores for literal and figurative phrasal verb meanings

between native speakers, Japanese university students, and Japanese senior high school students. The score difference between native speakers and Japanese learners is greater for figurative meaning than for literal meaning. This gives evidence that Japanese learners may find it more difficult to learn figurative or idiomatic phrasal verbs than literal phrasal verbs. In addition, it seems to show the fact that there were statistically significant differences between native speakers and Japanese learners, and there were also significant differences between Japanese university students and Japanese high school students, both in terms of literal and figurative meanings.

Table 52

Comparison of phrasal verb usage between native speakers and Chinese learners (Multiple-choice test)

Group	n	PV Type	k	M	SD
NS	15	PV	225	0.84	0.10
		Figurative	165	0.82	0.12
		Literal	60	0.88	0.13
Chinese A	10	PV	150	0.75	0.15
		Figurative	110	0.73	0.19
		Literal	40	0.83	0.17
Chinese I	15	PV	225	0.45	0.19
		Figurative	165	0.43	0.20
		Literal	60	0.50	0.19

Note. k indicates the total number of verbs, M stands for Mean score, and SD for Standard Deviation. A is short for Advanced learners of English, and I for Intermediate learners of English.

Liao and Fukuya (2004, p.83)

Thus, I conducted both Kolmogolov-Smirnov test and Leven test on these scores in order to identify normal distribution and homoscedasticity. The result suggested that they did not distribute normally and it did not clearly show their homoscedasticity as well. Instead of parametric approach, therefore, I conducted nonparametric statistic tests including Kruskal-Wallis and Steel-Dwass test. The Kruskal-Wallis test showed significant differences between these three participant groups, that is, native speakers of English, Japanese university students, and Japanese high school students with $p<.05$. The multiple comparison test of Steel-Dwass also identified significant differences between them with $p<.05$, except for the case of particle position between Japanese university students and Japanese high school students. There was no significant difference between them with $p=0.429$ ($p>.05$).

Table 53

Comparison of phrasal verb usage between native speakers and Japanese learners (Multiple-choice test)

Group	n	PV Type	k	M	SD
NS	10	PV	150	0.84	0.12
		Figurative	110	0.85	0.13
		Literal	40	0.79	0.15
Japanese U	84	PV	1260	0.42	0.15
		Figurative	924	0.36	0.16
		Literal	336	0.57	0.23
Japanese H	75	PV	1125	0.31	0.12
		Figurative	825	0.28	0.13
		Literal	300	0.39	0.22

The above table presents the means and standard deviations of phrasal verb usage for all the groups of participants including native speakers, Chinese learners, and Japanese learners.

As shown in Table 54 below, Japanese learners belong to the same domain as Hebrew undergraduate and Chinese undergraduate and graduates, who have no phrasal verbs in their L1. However, according to Liao and Fukuya (2004), advanced Chinese learners did not show the same avoidance of phrasal verbs found among Japanese learners.

Table 54

A developmental shift from avoidance to non-avoidance of English PVs

Avoidance	**Non-avoidance**
(No PVs in L1) **Hebrew Undergraduate** **Chinese (Undergraduate & Graduate)** **Japanese (Undergraduate & High School Students)**	**Chinese Graduate**
Beginning	**Native-like**
(PVs in L1) **Dutch High School Students** **Italian Undergraduate**	**Dutch & Swedish Undergraduate**

Note. This table is based on Liao and Fukuya (2004, p.92).

Chapter 6 Discussion

The results of the corpus analysis and elicitation research were shown in the previous chapter. As for the corpus research, it was shown that Japanese learners underuse phrasal verbs in number and kind, compared to native speakers of English. As for the elicitation research, three research questions were answered.

With regard to Research Question 1, it was shown on the basis of corpus and elicitation evidence that Japanese learners of English avoid phrasal verbs. With regard to Research Question 2, elicitation tests have shown that this avoidance is affected by difference in semantic type (figurative vs. literal) and that these learners tend to avoid phrasal verbs with figurative meanings more than those with literal meanings. Finally, with regard to Research Question 3, multiple-choice tests showed greater avoidance of figurative phrasal verbs than literal phrasal verbs in Japanese advanced learners of English. These finding are in accordance with previous findings using different measures, such as those of Liao and Fukuya (2004), who found that literal phrasal verbs were manifested in the translation test alone among Chinese learners, or those of Dagut and Laufer (1985), who found greater avoidance of figurative than of literal phrasal verbs in all three tests (multiple-choice, translation, and memorization) in the case of intermediate Hebrew learners of English, whose native language lacks the phrasal verb structure.

Historically speaking, many phrasal verb combinations are originally derived from Germanic origins, and German contains many separable verbs, such as *ausgehen* (=go out), which are comparable with English phrasal verbs. In a consideration of these issues, Waibel (2007) investigated the percentages of Germanic-origin and Latin-origin verbs used in G-ICLE, and he found a high percentage of Germanic-origin words. He consequently argued that German learners naturally overuse English phrasal verbs originating from Germanic language because they are influenced by their mother tongue German. Through quantitative analysis, he showed that the percentage of phrasal verbs in G-ICLE (6.2%) is higher than that in the native corpus LOCNESS

(4.7%). On the other hand, for Japanese learners, the percentage of phrasal verbs is not nearly so high: at 2.9%, their usage is the same as that of Italian learners in I-ICLE, discussed in Waibel (2007).

In Table 42, the frequencies of phrasal verbs such as *carry out, point out, bring about,* and *go on* are compared to those of verbs both in native speakers' and non-native speakers' corpora. The frequencies show that where these phrasal verbs are concerned, non-native speakers, including Japanese, underuse phrasal verbs in general. Waibel (2007) pointed out that German learners tend to overuse phrasal verbs, but as far as these phrasal verbs are concerned, they underuse the phrasal verbs. It is of course possible that they use other phrasal verbs more frequently. In non-native speakers' corpora, such as I-ICLE and JEFLL, the phrasal verbs they use tend to be slightly different from each other.

Next, as Table 35 and Figure 16 show, Japanese learners acquire a wide range of vocabulary and use a variety of phrasal verbs as they grow older and proceed to higher grades. Furthermore, the percentage of phrasal verbs in the verb phrases becomes higher as the grade proceeds, but in grade 12, the uses of phrasal verbs are not so frequent. In the corpora of Japanese university students, this tendency persists. One of the reasons seems to be that Japanese learners may actually lack basic knowledge of English vocabulary, and it is assumed that Japanese learners should understand the polysemy of the basic words deeply enough to focus on the basic verbs when they are young. This may come to be a common task in teaching English to non-native speakers. Furthermore, it seems clear that the uses of phrasal verbs are slightly different, depending not only on the stages of learning such as high school, or university, but also on the registers used, whether the discourse is spoken or written, what fields or topics they are used to address, and whether they are produced by native speakers or non-native speakers, according to the corpora comparison.

As for the statistical comparison of the corpora, Ishikawa (2007) attempted to objectively summarize different frequencies using the statistical techniques of multivariate analysis such as

principal component analysis (PCA), factor analysis (FA), and correspondence analysis (CA). His study showed that correspondence analysis worked well for the purpose of identifying educational and basic communicative words. So, in this study, correspondence analysis was carried out for analyzing the corpus data.

It is also clear that native speakers use some phrasal verbs, e.g., *go on, take on, end up*, more frequently than non-native speakers do. Japanese learners prefer to use *carry out, go back, grow up,* and *give up*, but they underuse others like *point out* and *take away*. This suggests that the uses of specific phrasal verbs are slightly different between native speakers and non-native. It is advisable that we investigate the frequency of phrasal verbs used by native speakers more deeply and select some of the more frequent phrasal verbs to focus on more intensively in EFL classroom.

In Table 34, which describes common simple verbs, Japanese learners use *go*, *come*, *get*, and *say* frequently, and Chinese learners often use *bring*, *take*, and *show*. On the other hand, Thai learners use *make money*. This reminds us that language use is influenced by not only linguistic aspects but also by cultural background. Gass and Selinker (1983) and Okuda (2005) have pointed out the possible influences of L1 upon second language learning, but the question of whether and what degree cultural backgrounds influence second language use remains. Japanese learners may tend to use *go, come*, and *get* very often, because these verbs are well fixed in their memory. They also tend to use a narrow set of phrases after the verb *go* in the corpus research, showing that the number of possible complements for *go* may be quite small for this group of learners. They also use *say* frequently, but they tend not to use *point out*: in other words, they may choose the simple verb instead of the phrasal one. These questions are promising possibilities for future research on larger bodies of data, which may be used to confirm and possibly deepen the initial insights offered here.

Phrasal verbs are composed of a limited number of verbs and adverbial or prepositional particles. Though they are simple in form, they may have polysemous, figurative, or idiomatic

meanings that are complex for learners, who may choose to employ one-word synonymous verbs instead. And it is also questionable whether we can deal with phrasal verbs and prepositional verbs in the same way. Japanese learners, who are said to be poor at prepositions as well as articles, are thought to need repetition to practice these forms, and it takes time to master them.

Compared to native speakers of English, most non-native speakers, except for those with German L1, tend to use phrasal verbs less frequently, possibly due to L1 influence. L1 disadvantages could be overcome by helping promote learners' interest and involvement in producing native-like phrasal verbs. More concretely, our target materials should shift from oral to written focus at the appropriate stage of development, that is, spoken materials should be emphasized for beginners, while written materials should be used for advanced students. In all cases, learners' learning purposes and speech registers must be considered in detail. Students should be required to use phrasal verbs in various real-life situations or contexts, promoting a clear-cut image of the target vocabulary. In connection with this, Nakamura (2012) suggests that the strategy of expanding meanings outward from core images is advantageous in vocabulary learning, while so-called rote learning strategies do not result in learning phrasal verbs effectively. Hirano (2000) divides vocabulary learning strategies into four main types: (1) repetition and experience; (2) imaging; (3) interest and motivation; (4) pronunciation repetition. She argues that vocabulary learning strategies depends greatly upon individuals' differences such as gender, or grade, except for pronunciation repetition.

It has already been pointed out that corpus analysis is problematic in that it collects mass data and may not present a completely accurate picture of peculiar linguistic phenomena such as phrasal verbs（Aats, 1991; Mönnink, 1997）. Therefore, to compensate for the limitations of the corpus data, we can improve the validity of our findings by supplementing analysis with elicitation test research as experimental studies. It has also been said that intuition tests are necessary for linguistic usage studies (Quirk and Svartvik, 1979). Gilquin and Gries (2009) also pointed out that linguistic

acceptability is determined by using these intuitive grammatical judgment tests.

The issues of data-based versus theory-based (sometimes also called intuition-based) approaches to linguistic analysis have been subject to discussion for decades. The term corpus is used to refer to a collection of naturally occurring written or spoken stored in a machine readable format for the purposes of linguistic description and verifying hypotheses about language. In contrast, intuition-based approaches advocated by Chomsky and his successors insist on the priority of introspection. Elicitation tests are one way to introduce a native speaker informant to make such introspection available to the analyst.

Gries (2003) reports that speakers' choices about particle position can be achieved with his newly developed multifactorial techniques, general linear model (GLM), linear discriminant analysis (LDA) and classification and regression trees (CART). We do not draw on these techniques extensively here, but they may correctly explain the degree of the factors affecting particle movement, and they may have useful implications for elicitation test techniques. Thus, a corpus approach or a quantitative treatment of lexical semantics seems to demand the addition of elicitation, experimentation, and intuition. Furthermore, cognitive semantic studies such as Gries (2003) parallel the development of quantitative techniques in lexical research.

As we have seen, the corpus approach has a clear disadvantage for the description of language use, although corpora remain the primary source of data for the study of language use（Aats, 1991; Mönnink, 1997). Mönnink (1997) suggests that the inherent restrictedness of corpora becomes problematic when investigating a relatively infrequent phenomenon, and she offers the variation in the constituent structure of the noun phrase as an example. She argues that the combination of corpus and elicitation data forms a valuable contribution to the description of language use, and discusses a way of supplementing corpus data through elicitation techniques. She also discusses various design issues of elicitation experiments and presents some examples of actual tests, using the study of non-regular noun phrases as an example.

Traditionally, data for linguistic research is gained by sampling natural language corpora. However, Druskat (2010) also uses elicitation experiments to study the distribution of additive particles such as *also* and *too*. He created six online questionnaires to test three hypotheses about the distribution of *also* and *too*. The questionnaires offered important advantages, being both cost-effective and highly customizable.

The elicitation test techniques adopted in their research are reinforced by Mönnink (1997), and Gilquin and Gries (2009). Mönnink (1997) suggests three main reasons for using elicitation tests. First, elicitation data is a necessary component for a survey of English usage, since the exclusive use of corpus data would provide too narrow a basis for a profound study of relatively infrequent phenomena. It then follows that experimental data can serve to supplement corpus data. Second, the corpus linguist can use informants' acceptability judgments in order to decide which constructions to incorporate into the grammar. Third, the results may also suggest questions for further investigation through corpus searches or through additional elicitation experiments.

Elicitation tests can be divided into several types of performance test as well as some types of judgment test. The performance tests commonly given to non-native speakers may contain composition, operation, and completion items, while judgment tests administered to native speakers may elicit judgments of evaluation, preference, similarity, frequency, and normality. Gilquin and Gries (2009) offer arguments in support of these judgment tests. Further, they identify three main sources of linguistic data: corpora, fieldwork data, and experimental data. Finally, they argue strongly that corpus linguists should consider complementing their corpus studies with experimental data.

The results of this study point to the possibility of further linguistic research on VPCs using semantic gradience analysis on corpora. This could also be possibly done in the same way as in the elicitation approaches. Furthermore, this kind of analyses can be applied to the meaning of the words or the VPCs, enlarging their metaphorical connotations from concrete to abstract or

idiomatic, based on the cognitive approaches suggested by Nieda (2006). To date, there have been no corpus-based frequency studies focusing particularly on the use of English phrasal verbs by Japanese EFL learners although there have been some studies of native English speakers as discussed in Section 2.5.8. The evidence presented in Waibel (2007) implies that learners, who lack phrasal verbs in their L1, such as Japanese EF learners, tend to avoid using phrasal verbs in English, while those who have phrasal verbs in their L1, such as German learners, do not avoid using these in English. To test this claim, I assessed the frequency of phrasal verbs in Japanese EFL corpora, and compared it with native corpora. In addition, I investigated the Japanese learners' avoidance of English phrasal verbs by employing the same kind of elicitation tests used in Liao and Fukuya (2004) in order to compare non-native speakers with English native speakers. Most researchers have classified phrasal verbs as aspectual and nonaspectual, or literal and figurative but this study suggests that these kind of rigid distinctions may be insufficient for describing learners' usage: instead, corpus evidence suggests that these categories are gradient rather than discrete. Common verbs such as *make* appear in a number of phrasal and prepositional verbs and usually show a high degree of polysemy. In future research, I will classify the polysemous meanings of such verbs and use these categories to compare native English speakers' usage to Japanese EFL learners in order to clarify the characteristics of each one.

To objectively grasp the meanings of these phrasal verbs, we need objective criteria by which to measure their strength of transitivity, as pointed out by Hopper and Thompson (1980), as well as their degree of idiomaticity (Fraser, 1974; Makkai, 1972). Finally, we need to classify them in detail from the semantic point of view, as Levin (1993) does, to clarify in semantic terms the tendency of particular verbs to collocate with particular particles.

Based on the corpus approach suggested by Mochizuki (2007) and others, this chapter discusses the semantic nature of verbs such as *make* in relation to phrasal verbs and describes the elicitation test technique that is consequently concerned with Research Question 2. It also refers

to the semantic gradience analysis discussed in Chapter 2 and uses corpus evidence to clarify the differences in how native speakers and Japanese EFL learners use VPCs.

According to Mochizuki (2007), *make* is a high-frequency verb regardless of style or register, whereas *get* is high in frequency in spoken English but low in written English. Both *make* and *get* are used as activity verbs and in causative constructions, and both are difficult for EFL learners because they are polysemous and they are light verbs. Mochizuki (2007) compares differences in the use of *make* in academic prose written by Japanese university students and by American university students, with ICLE-J as the learner corpus and LOCNESS as a reference corpus. The results show that Japanese learners of English underuse causative *make* as well as phrasal-/prepositional-verb *make* but overuse idiomatic *make*, and that money *make* and light verb *make* are underused in *make* NP constructions and creative *make* is overused.

Table 55

Frequency of semantic classification of MAKE（per million words）

	LOCNESS	ICLE-J
light verb structure with MAKE	123. 58	91. 62
money MAKE	24. 36	2. 99
creative MAKE	23. 77	82. 66
linking MAKE	1. 78	0. 50
causative MAKE	143. 18	116. 52
phrasal/PP MAKE	15. 45	7. 97
idiomatic MAKE	3. 56	2. 60
other structures	2. 38	10. 95
total of MAKE	338. 06	313. 20

Mochizuki（2007，p.42）

Make falls into several semantic categories. Its core meaning is 'create' or 'produce', and it also has delexical or light verb uses such as *make a decision* and *make a mistake*. Causative uses are seen in sentences such as *What makes this country great?* The money meaning refers to usages such as 'earn money', while phrasal verbs are seen in phrases such as *make out* and *make up*. Linking verb uses, which have the meaning of 'have the right qualities for', are used in phrases such as *make a wife*, and *make a president.* Other conventional uses are also seen, as in phrases such as *in order to make ends meet.*

The main verb in such constructions is often called "light verb" (Huddleston & Pullum, 2002; Jespersen, 1965; Radford, 2004), and delexical verb is also used (Collins Cobuild, 1990; Sinclair & Renouf, 1988). Other than these, it is also called deverbal noun preceded by a common verb of general meaning by Quirk et al. (1985), and thin verb by Allerton (2002).

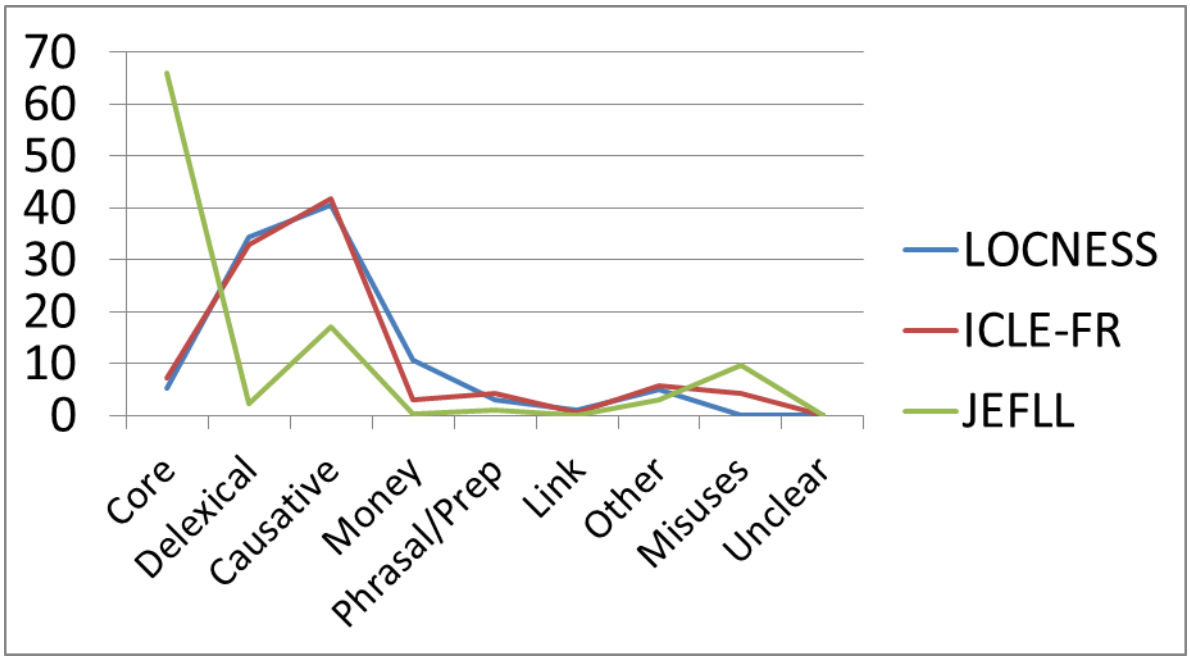

Figure 26. Comparison between native (LOCNESS), French (ICLE-FR), and Japanese (JEFLL) corpus. Figures indicate percentages. The data of LOCNESS and ICLE-FR are based on Mochizuki (2007) and Hugon (2008).

Similarly, Hugon (2008) compares the semantics of *make* in LOCNESS and in the French learners' corpus ICLE-FR. Building on studies like these, the present study makes a similar comparison between the Japanese learners' corpus JEFLL and these learner corpora. Results are shown in Figure 26 above.

As Figure 26 shows, the core meaning of *make* is used with higher frequency in JEFLL than in either LOCNESS or ICLE-FR. However, it is less commonly used as a delexical, causative, or phrasal verb in JEFLL. This suggests that Japanese learners of English tend to use the verb more concretely and less abstractly than native speakers (or French-speaking English learners).

Above, we touched on the possibility of using semantic gradience analysis in corpus approaches as well as in elicitation approaches to more fully understand the semantic characteristics and metaphorical connotations of VPCs. Take the phrasal verb *get over* for example. In one sense, it means to move or climb over someone or something concretely, but when used figuratively, it means to recover from difficulties regarding someone or something. In the JEFLL corpus, *get over* is used exclusively in a figurative sense (100%), while in the native corpus COCA (the Corpus of Contemporary American English) it is sometimes used literally (13%) but is predominantly figurative (87%). Similarly, the prepositional verb *live with* is only used literally in the JEFLL (100%), but native speakers in COCA use it both literally (75%) and figuratively as 'tolerate' (25%). This kind of comparison may offer deeper understandings of the differences in usage of VPCs by native English speakers and Japanese EFL learners. This sort of frequency analysis is also supported by elicitation test data, which makes the characteristics of the Japanese EFL learners' PVC usage even better.

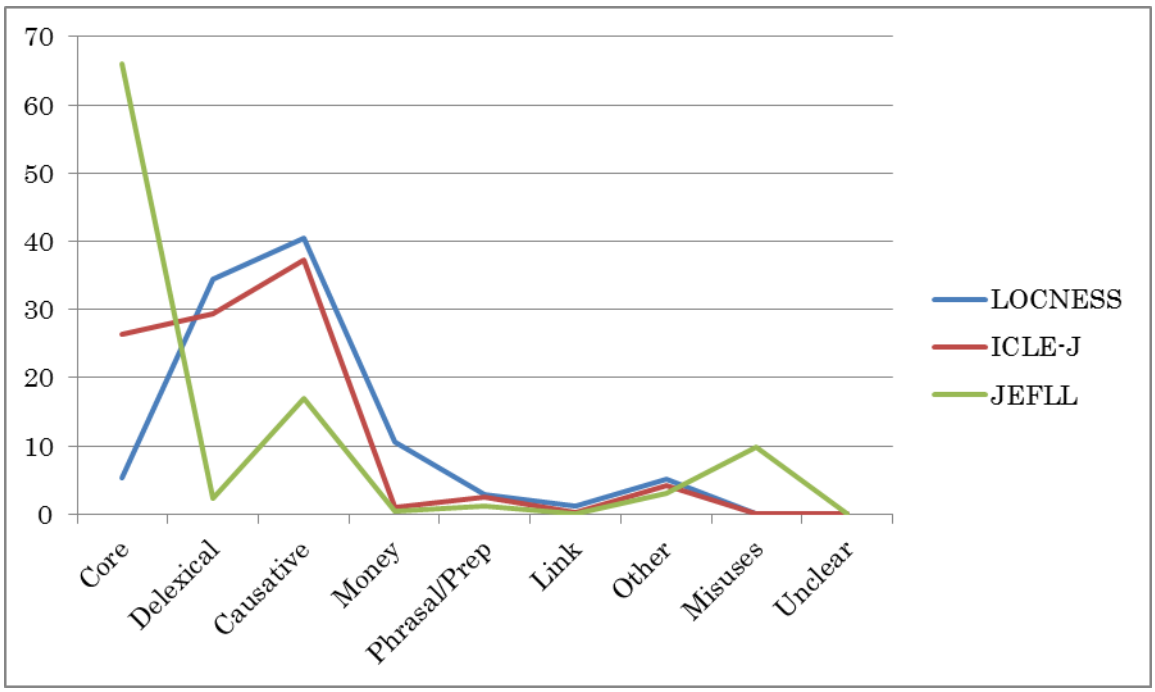

Figure 27. Comparison between native (LOCNESS), Japanese university students (ICLE-J), and Japanese high school students (JEFLL) corpus. Figures represent percentages. The data of LOCNESS and ICLE-J is based on Mochizuki (2007).

Figure 27 above, which presents data from the native corpus LOCNESS, the Japanese university students' corpus, ICLE-J, and the Japanese junior and senior high school students' corpus, JEFLL, shows that the Japanese learners of English at, both university and high school levels, tend to use core meanings of *make* with a higher frequency than native speakers in general. As educational level increases, the uses of core meanings seem to lessen, as delexical and causative meanings appear more frequently. The percentages of phrasal verbs are rather low but they, too, increase overtime.

In this way, we can see how corpus analysis that incorporates semantic classification makes it possible to identify important dimensions of learners' usage.

The JEFLL corpus contains the data from both junior high school students and senior high school students. Figure 28 below shows these data separately, and it is clear that both senior and

junior high school students display the same tendencies in their uses of the verb *make*.

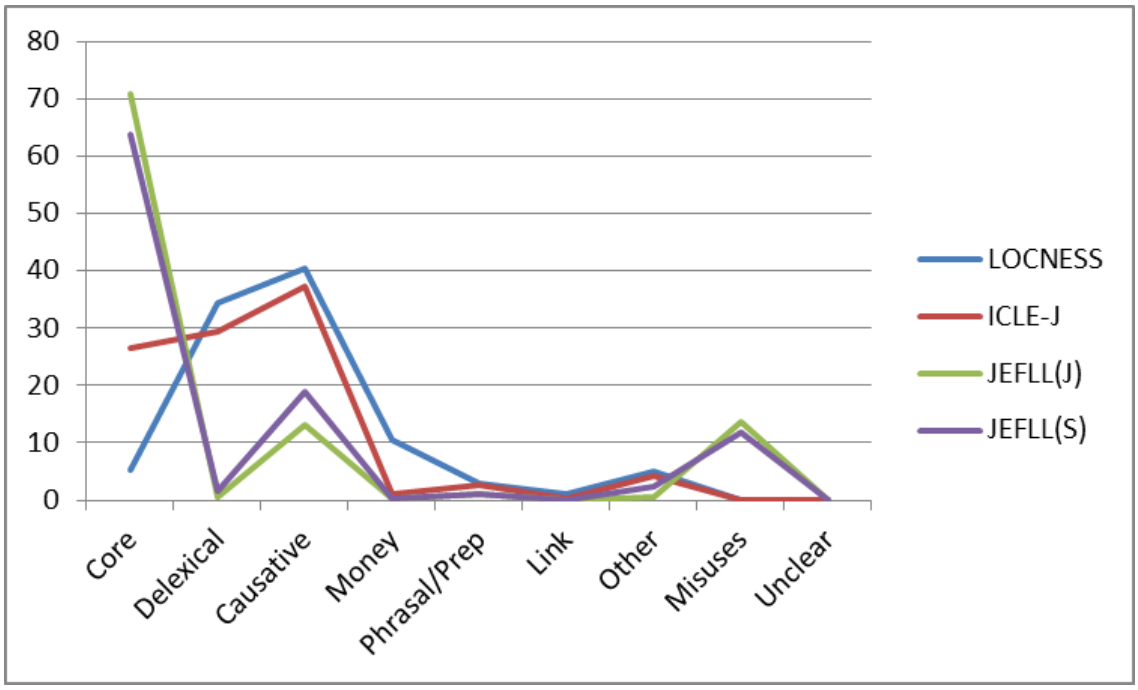

Figure 28. Comparison between native (LOCNESS), Japanese junior high school students (JEFLL(J)) and Japanese senior high school students (JEFLL(S)) corpus. Figures represent percentages. The data of LOCNESS and ICLE-J are based on Mochizuki (2007).

Chapter 7 Pedagogical Implications

One of the findings here is that phrasal verbs in Japanese learner corpora such as JEFLL and NICE show a lower frequency than in native speakers' corpora, and elicitation research indicates that Japanese learners prefer to use one-word verb equivalents rather than phrasal verbs.

The survey research indicated that many teachers think that high school textbooks do not sufficiently deal with teaching phrasal verbs and that they contain a number of problems, such as insufficient repetition and lack of systematic presentation. The number of phrasal verbs and prepositional verbs from first year to third year in junior high school textbooks were presented above in Figure 13, which illustrated how phrasal verbs and prepositional verbs both grow in number as grade level increases, but the number of phrasal verbs is always smaller than that of prepositional verbs. The 92 most common VPCs in seven textbooks were classified as either phrasal verbs or prepositional verbs and as Figure 12 showed, the 70 VPCs that appeared only once in the textbooks, more than 50 were phrasal verbs. In other words, low-frequency phrasal verbs outnumber low-frequency prepositional verbs. The relative lack of occurrences of phrasal verbs in the textbooks may contribute to learners' difficulties in acquiring them. It was also pointed out that another difficulty lies in the similarities among many of the phrasal verbs: students tend to confuse them and may have trouble understanding and using them. These problems suggest that students' basic vocabulary should cover phrasal verbs, allowing sufficient time for extensive repetition and maximizing cognitive exposure, perhaps by supplementing textbooks with other teaching materials that incorporate more easily understandable images. According to Katsuhuji (2010), the frequencies of verbs in textbooks were examined and it was shown that insufficiencies in the variation of psych verbs were observed in both textbooks and that learner corpora and a few easy expressions such as *interest* and *surprise* were repeatedly overused but other expressions were not so frequently used in textbooks.

Extensive research has focused on issues in second language vocabulary acquisition (Sinclair,

1991), and various effective vocabulary teaching methods have been suggested. For example, Zaid (2009) claims that memorization by means of vocabulary lists is not preferable; rather, vocabulary should be memorized in context, where words can be learned by heart in a network of meanings and where unknown words can be inferred from the context. Thornbury (2002) asserts that translation methods hinder SLA vocabulary building because they depend too much on L1 knowledge. Quite a few high school teachers stand on this position as shown in the preliminary research questionnaires used in this study. On the other hand, other researchers state that context-free word lists with translations are effective tools for memorizing vocabulary (Prince, 1996: Webb, 2007). Their results reveal a superiority of translation learning in terms of quantity, but an inability on the part of weaker learners to transfer their knowledge into L2 contexts.

The former strategy emphasized teaching students to derive word meanings from sentence context, rather than teaching specific meanings. The latter strategy emphasized direct teaching of individual meanings for a set of unfamiliar words.

Providing learners with the meanings of all new words or encouraging extensive and expansive dictionary work may not be appropriate or adequate for stimulating vocabulary acquisition. The reason may be that relying solely on “vocabulary lists” or “word-translation pairs” prevents learners from looking for and applying suitable strategies, such as speculation, meaning-guessing, or word analysis, when they encounter unknown words. EFL vocabulary learning guides and instructional methodologies typically advocate a “teach vocabulary in context” approach, which holds that EFL vocabulary should never be taught in isolation as word lists with L1 equivalents. Most scholars assume that vocabulary lists accompanied by translated meanings create less opportunity for EFL learners to achieve autonomy in second language learning or could lead to confusion in getting the right contextual meaning (McCarthy, 1990; Prince, 1996).

However, in the acquisition of a second language, unlike in L1 learning, context alone may not be adequate for presenting new lexical items to learners. Some researchers explain the problem in

terms of paucity of contextual clues or insufficiency of learners' proficiency levels (Kroll and Curley, 1988; Stein, 1993). Other factors include, but are not restricted to, age of learners, their transitive abilities, working memory load and other lexical factors (Cain, Lemmon, and Oakhill, 2004; Lynn and Posnansky, 1977; Paribakht and Wesche, 1999).

So far, previous research has been ambivalent about the advantages of inferencing and meaning-guessing as vocabulary strategies, especially when it comes to long-term retention and recall. For instance, some researchers (Jenkins, Matlock, and Slocum, 1989; Lynn and Posnansky, 1977; Nation, 1982) found that learning new words in context offers no significant advantages over the presentation of new vocabulary in isolation or in context-free word lists. According to Carter (1998), it is no simple task to determine when certain strategies, such as key-word techniques, translation-in-pairs, dictionary use, or context-based inferential strategies, are best instituted; Carter finds "no clearly marked stages of transition" in the learning process, and therefore recommends that "a mixture of approaches should be adopted" (p.213).

Zaid's (2009) experimental research used pre-test/post-test comparisons to assess the benefits of both vocabulary strategies, and found that both approaches were effective in helping students acquire, retain and further recall lexical items. These findings suggest that learners may benefit from an integration of both approaches: direct instruction of vocabulary has demonstrable effects on students' vocabulary learning and comprehension, but in most real-life situations, learners have to deal with unknown words in their natural contexts. Therefore, it is strongly recommended that teachers present new vocabulary in context using example sentences, and that they ensure that reading materials contain sufficient contextual clues for new items. Thus instruction could productively merge several presentational techniques, even including the limited use of context-free translation pairs, though this should not be the sole or primary vocabulary presentation technique.

According to research on L2 vocabulary acquisition in Japanese high school education (Kudo, 1999; Schmitt, 1996), Japanese learners are likely to have been exposed to limited vocabulary

learning strategies. Characteristic examples include a predominance of rote learning, and shallow cognitive strategies such as verbal repetition. Students are not to employ social strategies in L2 vocabulary acquisition, suggesting little or no collaboration in their learning process; the corresponding implication is that their learning is primarily a receptive process, possibly as a result of the top-down classroom organization that is characteristic of the Japanese school system.

English teachers at Japanese high schools seem to run into several typical limitations that have received occasional attention in recent studies. According to Dammacco (2012), these limitations can be roughly classified into three broad categories: time pressure, mandated national curriculum, and mandated testing schemes. The time allocated to the language program in the national curriculum seems to be insufficient: the volume of the syllabus to be covered in an academic year does not match the time span available for its implementation.

To address these issues, Takahashi and Matsuya (2012) suggest a systematic learning system for English phrasal verbs that draw on the framework of Cognitive Grammar advocated by Langacker (1987). Namely, in order to link L2 learners' cognitive abilities to their language faculty, they developed sense-stimulating lessons that incorporated several visual images and self-learning devices. Their experimental methods demonstrated the effectiveness of systematic teaching of phrasal verbs with the help of visual images.

These findings also have implications for English textbooks in Japan, where, as this study has shown, phrasal verbs appear less frequently than prepositional verbs. The textbook-based presentation of phrasal verbs could be improved through the systematic incorporation of visual images.

Chujo (2012) identifies two uses for corpora in L2 classrooms: they can be used indirectly, for example, when teaching materials are developed, based on the results of corpora analyses; or they can be used directly, through data-driven learning (DDL). DDL involves student-centered discovery learning through the observation of regularities. Some examples of indirect corpus

application were shown in this research. In future research, EFL DDL case studies may also provide examples of effective teaching through direct corpus application.

With the development of corpus linguistics, the distinction between lexicon and grammar has been said to be unclear and vague; indeed, this junction is sometimes called "lexicogrammar." Schmitt (2000) defines these two areas as "partners in synergy with no discrete boundary", and Willis (1990) advocates a lexical syllabus that treats grammar and lexicon simultaneously.

Chujo (2006, 2012) presented a DDL syllabus design combining a Japanese-English parallel corpus with a CALL program to produce a set of corpus-based lexico-grammatical learning activities for beginning EFL learners.

This syllabus design was grammar-centered, focusing mainly on noun phrases and verb phrases. As far as phrasal verbs are concerned, I would like to consider their frequency and semantic classification such as literal and figurative. The followings are part of the corpus-based text materials.

To collect example sentences of verb–particle combinations with literal and figurative meanings, such as *live with*, I have analyzed about 100 public-domain novels available through the free Internet site Project Gutenberg, using AntConc. Project Gutenberg has collected copyright-free materials. The following are example sentences from the resulting concordance.

of sympathy. Were authors obliged hereafter, to	live with	the characters they create, how few wo
tolerable motive. How insufferable it would be to	live with	a person whose affection depended on v
ing of my love in return. How much rather I would	live with	a poor man who is liberal, than with a ric
e like this by any purseproud finery! They almost	live with	Marion and the Granvilles; but I abhor th
till a part of our lives. There are hours when we	live with	the dead more than with the living, so th
y a pleasant and even a high social position, who	live with	intelligent people, and even with people
atherly harshness? Those who are condemned to	live with	people for whom scolding and quarrelling
of them which have been happily preserved, is to	live with	the courageous observer from day to da
ere is nothing else." "If Marushka will come and	live with	me I will care for her as my child," said
rovinces the very old and sick people are sent to	live with	the richest householders. Of course no

Figure 29. Example sentences with "live with" in native corpus (Project Gutenberg).

As seen in the above figure, most of the noun phrases following *live with* were people or concrete objects, indicating literal uses, and none were instances of abstract nouns (e.g., *fear*). Other suitable corpora were introduced as sources for examples of figurative meanings. The following figure is cited from the COCA corpus concordance line, containing the sequence *live with fear*.

I have got the permission of these uses of COCA corpus by communicating with Mark Davies who constructed the corpus.

if Lisa is going to take her away from me someday. I can't	live with	that fear.
Once you've been diagnosed with breast cancer, you	live with	the fear of recurrence forever.
They have learnt to deal with the police, and	live with	no fear. They are clear about t
People coming from Tibet always tell me they are	living with	great fear in their hearts.
Thousands of American women are	living with	fear, uncertainty, and unwaver
But I'll ask it anyway: Is Bloss right? Are we doomed to	live with	fear forever? I know that now
wasn't getting anywhere, so I had to walk away. I had to	live with	the fear: What if I don't ever co
People here say they are worried they will now	live with	suspicion and fear.
Another group of families will	live with	the fear of not knowing what's
Yes, you can do this surgery on my child,' and you	live with	the fear.

Figure 30. Example sentences with "live with" in native corpus (COCA corpus).

In this way, students can learn the literal and figurative usages of the target VPCs through these example sentences, drawing on corpora showing discourse of native speakers of English. Unfortunately, the texts based on Project Gutenberg and the COCA corpus are rather difficult for high school students, so these materials may be most suitable for university students.

Other teaching materials use example sentences with Japanese translations. Figure 31 below represents example sentences of *get through*, which can be made more easily understandable for Japanese learners through the addition of an L1 translation. These are cited from WebParaNews, a freeware, parallel concordancer that allows users to check word and phrase usage in an English and Japanese news corpus.

I wanted to write this article as I thought today's middle school boys and girls, too, must be desperately trying to get through that period of instability, feeling lost and confused--albeit in a different way, no doubt, from what I experienced in my youth. 私 たち の 時 と は 違っ た 意味 で 、 大変 な 時代 の 中 を 、 いま も 中学生 たち は 同じ よう に 不安定 に 、 迷い 傷つき ながら 懸命 に 生き て いる に 違い ない 、 と 思い 、 筆 を とる 気 に なり まし た 。
The prospects for rice growing will not improve if the government says that bad weather is the only justification for allowing imports and then uses emergency imports as a cosmetic measure to get through the current crisis. 緊急 輸入 を 異常 気象 の せい だけ に し て 、 当面 の 危機 を しのげ ば いい という 安易 な 政策 から 稲作 の 展望 は 開け ない 。
The author and the publisher had insisted that the main theme of the novel was "how to get through a life filled with difficulties," but that argument was not accepted. 柳 さん 側 は 、小説 の 主題 が「 困難 に 満ち た〈 生 〉 を いかに 生き抜く か 」だっ た と 主張 し た が 、 認め られ なかっ た 。
Because the line is so busy, those who get through have to wait 10 minutes or more before getting to speak to a staff member. しかし 、 電話 回線 は ほとんど 話し 中 で 、 ようやく つながっ て も サポート スタッフ が 出る まで 十 分 以上 かかる という 状態 。

Figure 31. Example sentences using “get through” with Japanese translation according to WebParaNews

WebParaNews, developed by Laurence Anthony (Waseda University, Japan) in collaboration with Kiyomi Chujo (Nihon University, Japan) with the support of a JSPS (Japan Society for the Promotion of Science) Grant-in-aid for Scientific Research, (B) No. 21320107, uses the

Japanese-English News Articles database of the National Institute of Information and Communications Technology (NICT). The permission of these uses of WebParaNews has been obtained after communicating with Kiyomi Chujo.

Other corpus-based teaching materials and task activities are shown in Appendix D. They provide examples of phrasal verbs such as *give up, grow up, put on* and *take off* in their contexts. For example, *give up* is frequently used in negative contexts with emphatic adverbs such as *completely, entirely,* or with subjective adverbs such as *easily. Put on* and *take off* are neutral expressions but there are a variety of other synonymous expressions such as *pull on, throw on, slip on,* or *pull off, throw off,* and *slip off*. Corpus-based teaching materials like these provide students with examples of real language use, helping learners to identify and use language that is appropriate in different contexts. However, because corpus-based materials or texts are examples of real language use, they may sometimes be rather difficult for beginners. In that case, then, we should make a judicious use of corpus-based materials, carefully considering the proficiency of the students. As more and more corpus-based materials become available, teachers can use them to provide students with information that will help them achieve their goals of L2 fluency. Corpus-based materials also help teachers brush up their own skills by allowing them to have ready access to examples of language use and variation in context. And it may also be very useful for non-native learners to learn English phrasal verbs in the same learning process of L1, which expands their vocabulary from concrete to abstract by using natural human cognitive process.

Chapter 8 Conclusion

This thesis has focused on a comparison of native and L2 English verb-particle combinations using a combined approach that draws on corpus linguistics as well as on elicitation research, with the goal of offering recommendations for teaching English as a foreign language. The theoretical approach employed here drew on the semantic scale analysis (69) suggested by Fukui (2006) and proposed that prepositional verbs lie in the same semantic scale-class as idiomatic phrasal verbs, although they are syntactically different in a number of respects. Corpus-based evidence enabled us to observe the syntactic and semantic gradience between them. In this chapter, I briefly review the trajectory of the study and summarize its key findings.

Chapter 1 stated the importance of English verb-particle combinations and described reasons why L2 learners struggle with these particular forms. The Chapter laid out the primary objectives: to employ an approach combining insights from corpus analysis with elicitation approaches to provide EFL teachers in Japan with much-needed guidance on the teaching of phrasal verbs. It also showed the purpose and research questions of this study.

Chapter 2 defined verb-particle combinations as combinations of both phrasal verbs and prepositional verbs. In a broad sense, phrasal verbs and prepositional verbs are regarded as the same grammatical category but, strictly speaking, there are a number of syntactic and semantic differences, including phonological ones, between them as shown by Baldwin and Villavicencio (2002), Bolinger (1971), and Darwin and Gray (1999). However, unclear exceptions suggest that these two categories may not simply be a matter of dichotomy. Chapter 2 discussed the grammatical and semantic properties of the particles in verb-particle combinations whether they are adverbials or prepositionals, for example, or as aspectual or non-aspectual. Gradient analysis, whose theoretical basis lies in the cognitive approach supported by Gries (2003) and Bolinger (1971), was proposed as an effective approach to these issues. In addition, the arguments in that chapter supported an approach combining corpus analysis with elicitation tests. Tables 1 and 2 and Figures

1 to 3 offered examples of how this analysis offers visual images of gradated frequency distribution. The semantic scale analysis suggested by Fukui (2006) bears theoretical similarities to gradient analysis, but Fukui's analysis is mainly based on grammatical judgment tests by native speakers of English, and it does not deal with prepositional verbs.

Chapter 3 described the initial steps of the study: a preliminary survey, which was administered to a group of junior and senior high school teachers, and an analysis of phrasal verbs in EFL textbooks. These inquiries provided initial insights into how phrasal verbs are introduced in Japanese EFL classrooms. Chapter 3 presented the results of both of these preliminary analyses, which indicate that, although Japanese EFL teachers identify phrasal verbs as an important EFL topic, many of them do not regard phrasal verbs as primary teaching concern. This is attributed to the limitations of available teaching time and a fixed school curriculum; further, teachers do not seem to teach phrasal verbs with much energy or enthusiasm. Instruction in this area is thus incomplete. Teachers stated that most of their Japanese junior high school students are poor at articles and prepositions and that many Japanese senior high school students struggle with relatives. Thus, phrasal verbs are not their main concern. Nor, according to the corpus analysis of EFL textbooks, are phrasal verbs frequently used in high school textbooks. As for the preposition acquisition, it is also apparent that spatial/directional *to* precedes the relational *with* in the error analysis chart. This also seems to suggest that directions or concrete spatial meanings are easier for learners to learn than relations or more abstract meanings.

Chapter 4 recounts the main research method for this study, that is, a combination of corpus analysis and elicitation research. Corpus analysis was employed to investigate the frequencies of native English speakers' and Japanese EFL learners' use of VPCs and to gain insight into the characteristics of their usages. Elicitation test research focused specifically on the three research questions.

Chapter 5 shows the results of the corpus analysis and elicitation research. The corpus

research showed that Japanese learners underuse phrasal verbs in number and kind compared to native speakers of English. The chapter claimed that the investigation and comparison of data from the various corpora are an important source of information on the objective uses of phrasal verbs in context. It also presented answers to the three questions cited above, which I briefly summarize below.

With regard to Research Question 1, it has been shown on the basis of corpus and elicitation evidence that Japanese learners of English do seem to avoid phrasal verbs. With regard to Research Question 2, elicitation tests have shown that this avoidance is affected by semantic differences (i.e., whether the phrasal verb's meaning is figurative or literal) and that these learners tend to avoid phrasal verbs with figurative meanings more than those with literal meanings. Finally, with regard to Research Question 3, multiple-choice tests showed a greater avoidance of figurative phrasal verbs than literal phrasal verbs among Japanese advanced learners of English. This is in accordance with previous findings using different measures, such as those of Liao and Fukuya (2004), who found that literal phrasal verbs alone were manifested in a translation test alone among Chinese learners, or those of Dagut and Laufer (1985). They found that intermediate EFL learners from Israel, whose native Hebrew lacks phrasal verbs, showed a greater avoidance of figurative than of literal phrasal verbs in three different types of tests (multiple-choice, translation, and memorization).

Chapter 6 dealt with the semantic analysis of the verb *make*, drawing on contributions by Mochizuki (2007) and Hugon (2008). Using the JEFLL corpus, it was revealed that Japanese learners are apt to rely on the core meanings of verbs like *make*, but that they do not tend to use the same verbs to convey abstract, delexical, or causative meanings. In this sense, phrasal verbs may be regarded as one of the more abstract verb forms. A related finding suggests that it is easier for Japanese learners to use literal phrasal verbs than figurative ones, but, conversely, native speakers tend to prefer to use figurative phrasal verbs rather than literal ones.

Chapter 7 described some of the pedagogical implications of this study for the teaching of phrasal verbs in Japanese EFL classrooms. In addition, it suggested ways in which corpus-based teaching materials could be used to facilitate student learning, drawing on examples from native speakers' corpora such as COCA and Project Gutenberg.

In summary, the results of this study show that Japanese learners of English use phrasal verbs less frequently than do native speakers of English, that they use the core meanings of verbs more often than native speakers do, and that they tend to use more concrete expressions and fewer abstract or delexical ones (e.g., light verbs as in *make a decision*, or phrasal verbs, such as *make up*).

Next, the contribution to the research field such as the corpus approach, including learner corpus research, is described as follows. This study offers potential foundations for important additional work. Clearly delineating the semantic borders between these meanings will require extensive, minutely detailed corpus research drawing on native corpora such as the BNC and COCA. Additional studies could offer more insight into the reasons why Japanese learners of English use phrasal verbs less than native speakers do—whether it is only because of the influence of their L1, or whether different English teaching methods or materials also have roles to play.

The questionnaires obtained from Japanese EFL teachers assessed their opinions regarding four language skills—listening, speaking, reading and writing—and the importance of factors affecting learning of grammar and vocabulary, with a focus on phrasal verbs. The results show that teachers find teaching phrasal verbs difficult because of various time and resource constraints. The comparison of high school textbooks with the JEFLL learner corpus showed relationships between teaching materials and learners' developmental stages. Certain correlations were also identified between learners' developmental stages and prepositional misuses in the JEFLL corpus, as with the preposition *to* and *with*, for example.

Thus, it should not be surprising that the corpus research shows that Japanese learners of English use phrasal verbs less frequently than native speakers do, because the Japanese learners tend

to use verbs in their core meanings. In other words, they learn phrasal verbs by rote, with one meaning for each, and thus these verbs have less utility for them than for native speakers, who use them in a wide range of meanings, from concrete or literal to abstract or figurative.

This helps to explain why Japanese learners may struggle with or avoid idiomatic phrases. Phrasal verbs have a wide range of meanings, so it is difficult for English learners to choose suitable particle combinations. In addition, the choice of particles is not reinforced in Japanese EFL textbooks, which present scant examples or explanations of phrasal verbs.

In the corpus analysis, the statistical techniques of log-likelihood analysis and correspondence analysis were used to identify the relationships between various items, including individual phrasal verbs as well as different corpora.

In this study, the author combined corpus data with elicited linguistic data. Corpus methods make it possible to study properties of language users' linguistic output, while elicitation research offers access to properties of the mental processes and structures underlying language production and comprehension. These two approaches can be used in combination to give us a more holistic view of second language education.

The contribution to English education is described as follows. The study has particular pedagogical implications for teaching phrasal verbs: because Japanese learners struggle with abstract meanings, these should be actively targeted in the classroom. Teachers should focus more on figurative meanings than literal in an effort to improve Japanese EFL students' use and understanding of abstract aspects of English usage.

Yasuda (2010) suggested that Japanese EFL learners need to be explicitly taught about the notion of orientational metaphors before they can actively comprehend and produce appropriate phrasal verbs. And Perdek (2010) looks at the organization of a phrasal verb entry in the most recent pedagogical dictionaries of English from the cognitive perspective, giving semantic network for phrasal verbs such as *get through*. Studies like these offer examples of how we can explore and

illustrate figurative meanings to help learners understand their precise nuances.

Native learners extend their vocabulary both in kind and number as their developmental stage progresses, but the vocabulary of Japanese learners tends to remain limited even among university students. Native speakers use VPCs with a variety of meanings, from concrete to abstract, but Japanese learners use them to convey a narrow range of meanings whether they are concrete or abstract. And considering the developmental stage of prepositional uses such as *to* and *with* in the JEFLL corpus, concrete meanings seem to be generally easier for Japanese learners to learn than abstract ones as expected.

Another finding based on the elicitation test is that, statistically speaking, there were significant differences between native speakers of English, Japanese university students, and Japanese high school students in terms of their preference for phrasal verbs. However, there were no significant differences between Japanese university students and Japanese high school students in terms of their performance on grammatical tests of particle position of phrasal verbs. In addition, the score difference between native speakers and Japanese learners shows that Japanese learners find it more difficult to learn figurative or idiomatic phrasal verbs than literal phrasal verbs.

Although corpus evidence showed that native speakers generally use phrasal verbs in spoken contexts more frequently than in written contexts, but there are some notable exceptions: verbs such as *carry out, point out,* and *bring about* are used more frequently in academic written contexts than in spoken ones.

Japanese learners of English overuse some familiar phrasal verbs such as *give up, go back, go out,* and *grow up*, but otherwise they generally underuse phrasal verbs, compared to native speakers. The most common phrasal verbs among native speakers of English include the figurative combinations *go on, take on,* and *end up,* while common phrasal verbs among Japanese high school students are more concrete, such as *go back, grow up,* and *give up*.

Phrasal verbs used are affected by themes or topics as well as registers such as spoken or

written whether they are used by native speakers or Japanese learners. Further, the usage of particular phrasal verbs is affected by discourse themes or topics, spoken or written registers, and linguistic background (i.e., native speakers or EFL learners).

Typical phrasal verbs used in American English and in British English differ. Based on Liu (2011), examples of common phrasal verbs in American English include *figure out, show up, check out, shut down, lay out, hang out, hang up, throw out, call out, start out,* and *pay off*. In British English, the list of frequent phrasal verbs includes *sort out, get on, fill in, carry on, hand over, go around, bring about, come around, build up, close down, pass on, write down, set off*, and *set out*.

A certain number of characteristic phrasal verbs in the specific corpus were searched for by comparing the frequencies between corpora. The use of statistical correspondence analysis can also capture these comparisons and relationships visually on a by-plot chart.

English verb-particle combinations, in a narrow sense, are divided into phrasal verbs and prepositional verbs. In every corpus in this study, prepositional verbs outnumber phrasal verbs.

In the survey of Japanese EFL textbooks, it was shown that among the top 92 VPCs, the number of phrasal verbs occurring only once is about twice that of prepositional verbs. This suggests that phrasal verbs lack repetition compared to prepositional verbs, and this may present obstacles that impede Japanese EFL students' learning of phrasal verb forms.

Corpus research on particles revealed that in both the native speakers' BNC corpus and in the non-native speakers' JEFLL corpus, forms such as *out, up, down,* and *back* tend to occur more often as adverbial particles than as prepositions. In contrast, certain others, like *under, by,* and *across,* appear more commonly as prepositions than as adverbial particles. These frequencies show gradient distribution as shown in Tables 1 and 2.

Pedagogical implications of this study echo calls made in other studies for supplementary classroom activities. In particular, these findings support the use of corpus-based instructional materials such as Chujo's (2012) DDL. This kind of method would be useful for Japanese

learners of English; however, many of the freely available DDL teaching materials are most appropriate for advanced learners, and care should be taken to incorporate corpus-based materials that are suited to students' proficiency level.

This study has a number of limitations concerning its size and scope. The discussion of semantic classification and corpus analysis dealt exclusively with the verb *make*, drawing on the data of Mochizuki (2007) and Hugon (2008). Certain phrasal verbs were also presented in some detail, but these were not treated as thoroughly as *make*. Further analysis of other basic verbs is needed to supplement these findings and provide more concise and accurate semantic descriptions of phrasal verb usages by native speakers and Japanese learners. In addition, the participants in the elicitation tests, especially native speakers of English, were limited in number, and it is possible that a larger pool of participants could have produced different results.

In the error analysis of VPCs, a limited number of prepositions and verbs were explored. Additional extensive research will be needed in order to identify further factors contributing to errors, especially those involving adverbial particles.

In addition, the contribution to the linguistic field is described as follows. In this thesis, we have seen how a single word can function in two or more ways, i.e., particles as both adverbials and prepositionals, spatial words as directional and positional, and so on.

This analysis indicates a degree of gradience between these functions, as shown in Tables 1 and 2. It was also shown that past research on VPCs has been more concerned with adverbial particles than prepositions or prepositional particles (e.g., Fraser, 1974).

Our current understanding of the kinds of relationships between dual or multiple functions therefore remains incomplete, and more research in this field is certainly in order to address these gaps in the literature. Future work will depend on more specific formulation of the remaining problems.

The main concern in this study has been the VPC subclass of phrasal verbs; prepositional verbs

and phrasal prepositional verbs were not dealt with in great detail here. Quirk et al. (1985) syntactically classified particles into three groups; adverbials, prepositionals, and a combination of the two. However, their discussion offered no insight into the usage levels of each type. Therefore, this study clarified the relative percentages of adverbial and prepositional particles in the corpora described here, as shown in Tables 1 and 2. In the course of this research, I proposed a gradient analysis, and, based on the gradience of the adverbial degree in the native BNC corpus, I presented a specific formulation (38). As stated in section 2.2, Kennedy (1920) pointed out that the two particles *up* and *out* are the most important among phrasal verbs but he did not present a definite reason for this predominance. Similarly, Uchikiba (2005) also took up these two as typical aspectual instances in (75), but here, too, no clear reason was given. This study, in contrast, clearly provides reasons. First, the particles *up* and *out* are the most frequent in number and in percentage as shown in Table 1 and in formulation as well (38). Second, according to my formulation (38), these frequent particles are structurally closer to verbs than to nouns. This means that they are therefore closer to typical phrasal verbs. In other words, if particles are less adverbial or more prepositional, they will be closer to object nouns, this in turn means that they are more like prepositional verbs. As shown in section 2.5.2, other than completive phrasal verbs there are a few types of aspectual verbs, such as inceptive, continuative, and iterative, but most researchers regard only completive as aspectual phrasal verbs. My study also clearly explains the reason why most researchers think of only completive as aspectual phrasal verbs. That is, a completive notion is related to this kind of typical verbal notion of the phrasal verbs and it is less connected to the nominal features of prepositional verbs. Fukui (2006) presents a semantic scale analysis of phrasal verbs using the notion of degree of idiomaticity, and he mainly addresses phrasal verbs, not prepositional verbs. Corpus linguists such as Liu (2011) also focus mainly on phrasal verbs rather than on prepositional verbs. As Table 3 suggests, more attention is needed to address this gap. Table 4 shows that many researchers classify phrasal verbs into three types, but these distinctions are

vague and not clearly delineated as Bolinger (1971) and Gries (2003) state (see section 2.5.7). In sentences (75) and (76) and in section 2.5.6, three kinds of phrasal verbs were identified: literal, idiomatic and aspectual. For prepositional verbs there are only two types: literal and idiomatic. This seems to be because phrasal verbs are close to verbs containing aspectual features, while prepositional verbs are close to nouns and therefore lack aspectual features. Finally, it is suggested that these distinctions are gradient ones, and their characteristics are accurately and clearly captured under this study's newly-established gradient analysis.

In future studies, I hope to extend this kind of combined corpus- and elicitation-based analysis to include a wider range of vocabulary and a larger pool of learners, thereby broadening our understanding of both semantic and learner characteristics and offering a more comprehensive set of meaningful pedagogical implications. In addition, more detailed comparison of high school textbooks and learner corpora may also show in greater detail the relationships between teaching materials and learners' linguistic proficiency.

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AntConc 3.2.2w. (A freeware concordance program for Windows, Macintosh OSX, and Linux) URL: http://www.antlab.sci.waseda.ac.jp/software.html

Excel (A statistic software program for Windows)

Paul Rayson Log-liklihood calculator

URL：http://ucrel.lancs.ac.uk/llwizard.html

SAKURA (A freeware concordance program for Windows)

URL: http://scn.jkn21.com/~scn2/

WebParaNews (a freeware, parallel concordancer)

URL:http://www.antlab.sci.waseda.ac.jp/software.html

Corpora used

BNC (British National Corpus)

URL: http://www.corpora.jp/~scn/information.html?page=top

CANCODE (The Cambridge and Nottingham Corpus of Discourse in English)

URL:http://www.cambridge.org/de/elt/catalogue/subject/custom/item3646595/Cambridge-International-Corpus-Cambridge-and-Nottingham-Corpus-of-Discourse-in-English-(CANCODE)/?site_locale=de_DE

COCA (The Corpus of Contemporary American English)

URL: http://corpus.byu.edu/coca/

G-ICLE (German Component of the International Corpus of Learner English)

In International Corpus of Learner English. Version 1.1. Louvain-la-Neuve: Presses Universitaires de Louvain. 2002.

ICNALE (International Corpus Network of Asian Learners of English)

URL: http://language.sakura.ne.jp/s/icnale.html

I-ICLE (Italian Component of the International Corpus of Learner English)

In International Corpus of Learner English. Version 1.1. Louvain-la-Neuve: Presses Universitaires de Louvain. 2002.

JEFLL (Japanese EFL Learner)

URL:http://jkn21.com/~jefll03/

LOCNESS (The Louvain Corpus of Native English Essays)

URL:www.fltr.ucl.ac.be/fltr/germ/etan/cecl/Cecl-Projects/Icle/locness1.htm

NICE (Nagoya Interlanguage Corpus of English)

URL: http://sugiura5.gsid.nagoya-u.ac.jp/~sakaue/nice/

PERC (Professional English Research Consortium)

URL: http://scn.jkn21.com/~perc04/index_j.html

Appendices

Appendix A

＜Questionnaires for English teachers about their teaching practice＞

These are questionnaires for the purpose of academic research on English teaching.

1　Which school do you belong to?

（ junior high school ・ senior high school ）

junior high	senior high	total
23	30	53

junior high	senior high	total (%)
43	57	100

2　How long have you been teaching English? （　　）years

	～5	5～10	10～15	15～20	20～25	25～30	unknown	total
J. H.	9	3	0	6	3	2	0	23
S. H.	5	9	3	3	4	3	3	30
total	14	12	3	9	7	5	3	53

	～5	5～10	10～15	15～20	20～25	25～30	unknown	total (%)
J. H.	39	13	0	26	13	9	0	100
S. H.	17	30	10	10	13	10	10	100
total	26	23	6	17	13	9	6	100

3 What are the students poor at?（multiple answers allowed）

listening speaking reading writing grammar vocabulary

	listening	speaking	reading	writing	grammar	vocabulary	total
J. H.	3	5	2	18	7	9	44
S. H.	14	24	9	21	16	13	97
average	17	29	11	39	23	22	141

	listening	speaking	reading	writing	grammar	vocabulary	total (%)
J. H.	7	11	5	41	16	20	100
S. H.	14	25	9	22	17	13	100
average	11	21	8	28	16	16	100

4 Which of these do you spend little time teaching?（multiple answers allowed）

listening speaking reading writing grammar vocabulary

	listening	speaking	reading	writing	grammar	vocabulary	total
J. H.	2	10	2	15	2	5	36
S. H.	12	22	2	19	1	3	59
average	14	32	4	34	3	8	95

	listening	speaking	reading	writing	grammar	vocaburary	total (%)
J. H.	6	27	6	41	6	14	100
S. H.	20	37	4	32	2	5	100
average	15	34	4	36	3	8	100

5 Which of these do you spend a lot of time teaching?（multiple answers allowed）

listening speaking reading writing grammar vocabulary

	listening	speaking	reading	writing	grammar	vocabulary	total
J.H.	5	8	9	5	11	6	44
S.H.	7	3	23	3	17	9	62
total	12	11	32	8	28	15	106

	listening	speaking	reading	writing	grammar	vocabulary	total (%)
J.H.	11	18	20	11	25	15	100
S.H.	11	5	37	5	27	15	100
total	11	10	30	8	26	15	100

6 Which parts of speech are the students worst at using?（multiple answers allowed）

nouns verbs adjectives adverbs conjunctions articles

prepositions auxiliary's relatives

	nouns	verbs	adjectives	adverbs	conjunctions	articles	prepositions	auxiliary's	relative	total
S.H.	0	4	3	7	2	14	15	2	8	55
S.H.	0	10	2	9	6	14	12	2	19	74
total	0	14	5	16	8	28	27	4	27	129

	nouns	verbs	adjectives	adverbs	conjunctions	articles	prepostions	auxiliary's	relative	total(%)
S.H.	0	7	5	13	4	25	27	4	15	100
S.H.	0	14	3	12	8	19	16	3	25	100
total	0	11	4	12	6	22	21	3	21	100

7 Which of the following are the students worst at?（multiple answers allowed）

tense aspect passive mood negation comparison phrasals

idiom infinitives gerunds participles questions inversion

ellipsis substitution emphasis amounts polysemy pronouns

clauses sentence patterns

	tense	aspect	passive	mood	negative	comparison	phrasals	idiom	infinitives	gerunds	participles
J.H.	7	1	1	3	2	2	0	1	1	5	4
S.H.	11	0	5	11	2	5	0	3	0	4	11
total	18	1	6	14	4	7	0	4	1	9	15

	questions	inversion	ellipsis	substitution	emphatic	amounts	polysemy	pronouns	clauses	sentence patterns	total
J.H.	2	0	0	0	0	3	2	5	2	2	43
S.H.	1	8	7	5	5	0	4	2	2	3	89
total	3	8	7	5	5	3	6	6	4	5	132

8 Which do you spend much time on teaching?

basic words derivative words collocations phrasal verbs

Pronunciation dictionary use

	basics	derivatives	collocations	phrasals	pronunciation	dictionary	total
J.H.	15	0	4	0	13	0	32
S.H.	20	9	1	2	13	2	47
total	35	9	5	2	26	2	79

	basics	derivatives	collocations	phrasals	pronunciation	dictionary	total (%)
J.H.	47	0	13	0	40	0	100
S.H	43	19	2	4	28	4	100
total	44	11	6	3	33	3	100

＜Questions about phrasal verbs（verb + particle, such as get up）＞

9　How do you teach phrasal verbs to your students?

・Use a lot of example sentences（#9）

・Give examples of core meanings and help them learn these meanings

・Have them learn core meaning images using pictures

・Instruction in common vocabulary

・No particular instruction methods besides the use of flash cards

・Make a memorization list of phrasal verbs and Japanese equivalents

・Use classroom English and textbooks

・Memorize words as a set of phrases

10　What are the problems (you have experienced) in phrasal verb instruction?

・Easy to confuse phrasal verbs

・Not enough image of (the meanings of) verbs and prepositions

・Difficult to imagine the meaning

・Difficult to use them

・No time to practice

・Phrasal verbs are easy to accidentally separate in slash reading

・Difficult usages

・Memory-centered instruction with many examples

・Too many similar examples

・Difficult to understand them

11　What are the problems with the textbooks?

・Insufficient

・Well studied

・Nothing in particular

・Little concern

・Need to take up more examples

・Not enough material related to entrance examinations

・Unclear whether the English in them is actually used by native speakers

・Low frequency

12　Do your students often use phrasal verbs?

Yes　　No　　Others（　　）

	Yes	No	Others	total
Junior High	5	12	6	23
Senior High	3	26	1	30
total	8	38	7	53

	Yes	No	Others	total (%)
Junior High	22	52	26	100
Senior High	10	87	3	100
total	15	72	13	100

13　Do your students know much about phrasal verbs?

Yes　　No　　Others（　　）

	Yes	No	Others	total
Junior High	4	14	5	23
Senior High	4	24	2	30
total	8	38	7	53

	Yes	No	Others	total (%)
Junior High	17	61	22	100
Senior High	13	80	7	100
total	15	72	13	100

14　Do you think it important to teach phrasal verbs to your students?

Yes　　No　　Others（　　）

	Yes	No	Others	total
Junior High	16	1	6	23
Senior High	28	1	1	30
total	44	2	7	53

	Yes	No	Others	total (%)
Junior High	70	4	26	100
Senior High	94	3	3	100
total	83	4	13	100

15　Do you spend much time teaching phrasal verbs?

Yes　　No　　Others（　　）

	Yes	No	Others	total
Junior High	0	20	3	23
Senior High	1	24	5	30
total	1	44	8	53

	Yes	No	Others	total (%)
Junior High	0	87	13	100
Senior High	3	80	17	100
total	2	83	15	100

16　What is the main reason you spend little time teaching phrasal verbs?

・There are a lot of teaching materials covering areas besides phrasal verbs (#24)

・Little time for teaching phrasal verbs (#4)

・Good to memorize them in sentences

・Difficult to find effective teaching methods

・There are many other words to memorize in the new curriculum

・They are regarded as vocabulary students study by themselves

Appendix B

Test items and the results of the native speakers in Liao and Fukuya (2004)

After each dialogue, the following information is added: in order of their appearance, the Chinese translation of the phrasal verbs and the four verbs presented in the multiple choice test. The percentage of native speaker preference for the phrasal verb is in the parentheses after its occurrence. The 15 informants were all adult, NSs of American English who were studying at the University of Hawai‘i at Mānoa.

1. –“When the weather is nice I love to ___ early.”

   –“Me, too. It’s good to enjoy the morning air.”

   A. rise B. release C. get up (100%) D. look after

2. –“I didn’t expect to see Emily at the party. I thought she had gone on vacation.”

   –“Me neither. I was also surprised when she ___.”

   A. claimed B. appeared C. showed up (93%) D. looked up

3. –“I heard that the company is sending you to Germany again.”

   –“Yes. It’s been a long time since I was there, so I guess it’s time to ___ my German.”

   A. abolish B. improve C. brush up on (73%) D. calm down

4. –“How do you like John?”

   –“He is one of those few people who never ___ their friends.”

   A. solve B. disappoint C. let down (73%) D. carry on

5. –“Did you hear about the bombing of the embassy in Nairobi?”

   –“That was a disaster. Fortunately, there weren’t that many people in the building when the bomb ___.”

   A. went off (73%) B. tuned in C. exploded D. replied

6. –“Hello, Jan!”

   –“Hi, Susan! How nice of you to call me!”

–“I want to ask some advice from you.”

–“No problem. Oh---, can you ___ a second? Someone is knocking at the door.”

A. hold on (73%) B. capture C. wait D. fall down

7. –“Michelle always forgets to ___ the fire when she leaves!”

–“That’s dangerous! You should talk to her about this.”

A. break into B. foresee C. put out (93%) D. extinguish

8. –“I was late for my date last night, so I ___ a story about a traffic jam.”

–“But did your girlfriend believe it at all? Better be frank next time.”

A. invented B. made up (93%) C. followed D. lay down

9. –“Robert and Paul were fighting on the street this morning.”

–“So I heard. Was it serious?”

–“They didn’t stop until Paul twisted his ankle and had to ___.”

A. realize B. give in (87%) C. surrender D. look up to

10. –“How is your business going?”

–“Pretty good. Though I have to ___ several good offers because I am just short of time.”

A. offend B. turn down (80%) C. cheer up D. refuse

11. –“When you think about it, most of your classmates will disappear forever from your life after you graduate.”

–“Yeah, but every now and then you will ___ one of them on the street.”

A. go over B. run into (80%) C. meet D. applaud

12. –“Do you notice that Marvin likes to ___?”

–“Yes. But I don’t think that he has anything to be proud of.”

A. lie B. boast C. show off (93%) D. break out

13. –“I’m sorry I hurt you. I didn’t mean to say those things. I was just angry.”

–“Just ___. I don’t want to see you for a while.”

A. leave B. sit C. go away (100%) C. move on

14. (in a restaurant)

–“Miss, could I get a bit more coffee when you’ve got a chance?”

–“Sure. Would you like me to ___ these plates first?”

A. remove B. take away (73%) C. mix D. drop in

15. –“How do you get in that bar?”

–“You have to ___ the back door.”

A. enter B. come in (80%) C. adopt D. put up

Appendix C

●Research Participation Consent Form

Elicitation Test Research

(Research Participant Consent Form)

Yutaka Iio

This is a research project for academic purposes. This research is conducted to learn about the tendencies of learners to study particular English vocabulary and grammar content. All the data will be used only for academic purposes, and your personal information will be dealt with secretly and will not be publicized in any papers. If you accept these terms and consent to this research plan, please write down your name, nationality and the date below.

Name

Nationality

Date ..... month ..... day ..... years

Note. This is the translated form from my original research participant consent form written in Japanese.

●Test items of the elicitation test research in this study

(1) Multiple-choice

Choose the most appropriate one from the below A through D and write the alphabet in the parentheses.

1. —"When the weather is nice I love to ( ) early."

   —"Me, too. It's good to enjoy the morning air."

   A. rise B. release C. get up D. look after

2. —"I didn't expect to see Emily at the party. I thought she had gone on vacation."

   —"Me neither. I was also surprised when she ( )."

   A. claimed B. appeared C. showed up D. looked up

3. —"I heard that the company is sending you to Germany again."

   —"Yes. It's been a long time since I was there, so I guess it's time to ( ) my German."

   A. abolish B. improve C. brush up on D. calm down.

4. —"How do you like John?"

   —"He is one of those few people who never ( ) his friends."

   A. solves B. disappoints C. lets down D. carries on

5. —"Did you hear about the bombing of the embassy in Nairobi?"

   —"That was a disaster. Fortunately, there weren't that many people in the building when the bomb ( )."

   A. went off B. tuned in C. exploded D. replied.

6. —"Hello, Jan!"

   —"Hi, Susan! How nice of you to call me!"

   —"I want to ask for some advice."

   —"No problem. Oh —, can you ( ) a second? Someone is knocking

at the door."

A. hold on. B. capture. C. wait. D. fall down.

7. —"Michelle sometimes forgets to ( ) the fire when she finishes cooking!"

—"That's dangerous! You should talk to her about this."

A. break into B. foresee C. put out D. extinguish

8. —"I was late for my date last night, so I ( ) a story about a traffic jam."

—"But did your girlfriend believe it at all? Better be frank next time."

A. invented B. made up C. followed D. lay down.

9. —"Robert and Paul were fighting on the street this morning."

—"So I heard. Was it serious?"

—"They didn't stop until Paul twisted his ankle and had to ( )."

A. realize B. give in C. surrender D. look up to

10. —"How is your business going?"

—"Pretty good, though I have to ( ) several good offers because I am just short of time."

A. offend B. turn down C. cheer up D. refuse

11. —"When you think about it, most of your classmates will disappear from your life forever after you graduate."

—"Yeah, but every now and then you will ( ) one of them on the street."

A. go over B. run into C. meet D. applaud

12. —"Do you notice that Marvin likes to ( )?"

—"Yes, but I don't think that he has anything to be proud of."

A. lie B. boast C. show off D. break out

13. —"I'm sorry I hurt you. I didn't mean to say those things. I was just angry."

—"Just ( ). I don't want to see you for a while."

A. leave B. sit C. go away. D. move on.

14. (in a restaurant)

—"Miss, could I get some more coffee when you've got a chance?"

—"Sure. Would you like me to ( ) these plates first?"

A. remove B. take away C. mix D. drop in

15. —"How do you get in the bar?"

—"You have to ( ) the back door."

A. enter B. come in C. adopt D. put up

(2) Translation

次の各文において日本語を参考にして（ ）内に適当な英語を書き入れなさい。

1. —"When the weather is nice I love to ( ) early."

—"Me, too. It's good to enjoy the morning air." (起きる)

2. —"I didn't expect to see Emily at the party. I thought she had gone on vacation."

—"Me neither. I was also surprised when she ( )."(現れる)

3. —"I heard that the company is sending you to Germany again."

—"Yes. It's been a long time since I was there, so I guess it's time to

( ) my German." (上達させる)

.

4. —"How do you like John?"

—"He is one of those few people who never ( ) his friends."（失望させる）

5. —"Did you hear about the bombing of the embassy in Nairobi?"

—”That was a disaster.　Fortunately, there weren’t that many people in the building when the bomb (　　).”（爆発する）

6. —”Hello, Jan!”

—”Hi, Susan!　How nice of you to call me!”

—”I want to ask for some advice.”

—”No problem.　Oh —, can you (　　) a second?　Someone is knocking at the door.”（待つ）

7. —”Michelle sometimes forgets to (　　) the fire when she finishes cooking!”

—”That’s dangerous!　You should talk to her about this.”（消す）

8. —”I was late for my date last night, so I (　　) a story about a traffic jam.”

—”But did your girlfriend believe it at all?　Better be frank next time.”（作り話する）

9. —”Robert and Paul were fighting on the street this morning.”

—”So I heard.　Was it serious?”

—”They didn’t stop until Paul twisted his ankle and had to (　　).”（降参する）

10. —”How is your business going?”

—”Pretty good, though I have to (　　) several good offers because I am just short of time.”（断る）

11. —”When you think about it, most of your classmates will disappear from your life forever after you graduate.”（出くわす）

—”Yeah, but every now and then you will (　　) one of them on the street.”

12. —”Do you notice that Marvin likes to (　　)?”

—”Yes, but I don’t think that he has anything to be proud of.”（見せびらかす）

13. —”I’m sorry I hurt you.　I didn’t mean to say those things.　I was just angry.”

—”Just (　　).　I don’t want to see you for a while.”（いなくなる）

14. (in a restaurant)

—”Miss, could I get some more coffee when you’ve got a chance?”

—”Sure.　Would you like me to (　　) these plates first?”（片付ける）

15. —”How do you get in the bar?”

—”You have to (　　) the back door.”（入る）

(3-1) Recall

Remember each expression in 10 minutes.

1. —”When the weather is nice I love to (　rise /　get up　) early.”

—”Me, too.　It’s good to enjoy the morning air.”（起きる）

2. —”I didn’t expect to see Emily at the party.　I thought she had gone on vacation.”

—”Me neither.　I was also surprised when she (　appeared /　showed up　).”(現れる)

3. —”I heard that the company is sending you to Germany again.”

—”Yes.　It’s been a long time since I was there, so I guess it’s time to (improve / brush up on　) my German.” (上達させる)

4. —”How do you like John?”

—”He is one of those few people who never (　disappoints / lets down　) his friends.”（失望させる）

5. —”Did you hear about the bombing of the embassy in Nairobi?”

—”That was a disaster.　Fortunately, there weren’t that many people in the building when the bomb (　exploded / went off　).”（爆発する）

.

6. —”Hello, Jan!”

—”Hi, Susan!　How nice of you to call me!”

—”I want to ask for some advice.”

—”No problem.　Oh —, can you (　wait /　hold on.　) a second?　Someone is knocking at the door.”（待つ）

.

7. —”Michelle sometimes forgets to (　extinguish / put out　) the fire when she finishes cooking!”

—”That’s dangerous!　You should talk to her about this.”（消す）

8. —”I was late for my date last night, so I (made up / invented) a story about a traffic jam.”

—”But did your girlfriend believe it at all?　Better be frank next time.”（作り話する）

.9. —”Robert and Paul were fighting on the street this morning.”

—”So I heard.　Was it serious?”

—”They didn’t stop until Paul twisted his ankle and had to (　give in　/ surrender　).”（降参する）

10. —”How is your business going?”

—”Pretty good, though I have to (　refuse / turn down　) several good offers because I am just short of time.”（断る）

11. —”When you think about it, most of your classmates will disappear from your life forever after you graduate.”（出くわす）

—”Yeah, but every now and then you will (　run into /　meet　) one of them on the street.”

12. —”Do you notice that Marvin likes to (　show off / boast　)?”

—”Yes, but I don’t think that he has anything to be proud of.”（見せびらかす）

13. —”I’m sorry I hurt you.　I didn’t mean to say those things.　I was just angry.”

—”Just (　go away. / leave　).　I don’t want to see you for a while.”（いなくなる）

.

14. (in a restaurant)

—”Miss, could I get some more coffee when you’ve got a chance?”

—”Sure.　Would you like me to (　take away / remove　) these plates first?”（片付ける）

15. —”How do you get in the bar?”

—”You have to (　come in /　enter　) the back door.”（入る）

(3-2) Recall

次の各文の（　　）内に適当な英語を書き入れなさい。

1. —”When you think about it, most of your classmates will disappear from your life forever after you graduate.”

   —”Yeah, but every now and then you will (　　) one of them on the street.”

2. —”How do you get in the bar?”

   —”You have to (　　) the back door.”

3. —”I was late for my date last night, so I (　　) a story about a traffic jam.”

   —”But did your girlfriend believe it at all?　Better be frank next time.”

4. —”I heard that the company is sending you to Germany again.”

   —”Yes.　It’s been a long time since I was there, so I guess it’s time to (　　) my German.”

5. —”I’m sorry I hurt you.　I didn’t mean to say those things.　I was just angry.”

   —”Just (　　).　I don’t want to see you for a while.”）

6. —”How do you like John?”

   —”He is one of those few people who never (　　) his friends.”

7. —"Michelle sometimes forgets to ( ) the fire when she finishes cooking!"

—"That's dangerous! You should talk to her about this."

8. —"Robert and Paul were fighting on the street this morning."

—"So I heard. Was it serious?"

—"They didn't stop until Paul twisted his ankle and had to ( )."

9. —"When the weather is nice I love to ( ) early."

—"Me, too. It's good to enjoy the morning air."

10.—"How is your business going?"

—"Pretty good, though I have to ( ) several good offers because I am just short of time."

11. —"Hello, Jan!"

—"Hi, Susan! How nice of you to call me!"

—"I want to ask for some advice."

—"No problem. Oh —, can you ( ) a second? Someone is knocking at the door."

12.—"Do you notice that Marvin likes to ( )?"

—"Yes, but I don't think that he has anything to be proud of."

13.—”I didn’t expect to see Emily at the party.　I thought she had gone on vacation.”

　—”Me neither.　I was also surprised when she (　　).”

14.—”Did you hear about the bombing of the embassy in Nairobi?”

　—”That was a disaster.　Fortunately, there weren’t that many people in the building when the bomb (　　).”

15. (in a restaurant)

　—”Miss, could I get some more coffee when you’ve got a chance?”

　—”Sure.　Would you like me to (　　) these plates first?”

（4-1）次の文を読んで、句動詞が正しく使われているものにはＴ、使い方が間違っているものにはＦを（　　）内に書きなさい。

1. She had a money problem, but she could get it over.　(　　)

2. There’s no fuel left －we use up it last winter.　(　　)

3. My town was struck by a heavy typhoon, but my brother slept it through.　(　　)

4. I found wrong answers, so I crossed them out.　(　　)

5. I’ll just throw a coat on and then I’ll be ready.　(　　)

6. Stick it at, and you’ll pass the exam.　(　　)

7. She set the problem about with her usual energy.　(　　)

8. The boys live for football and are always training and practicing.　(　　)

9. We made the syllabus.　We must get through it before the end of the year.　(　　)

10.Let’s drink to our success.　(　　)

(4-2) Translation

次の英文の意味を表すように（　　）内に適当な日本語を書き入れなさい。

a. He gets through the work. 彼は仕事を（　　）。

b. He gets through the test. 彼はテストに（　　）。

c. He gets through his suffering. 彼は苦しみを（　　）

(4-3)次の表現と同じ意味になるように(　　）内に適語を選んでその記号を書き入れなさい。

1. switch on a light =(　　) on a light

① put　② get　③ go　④ turn

2. leave = (　　) off

① be　② get　③ go　④ turn

3. write down = (　　) down

① take　② get　③ put　④ turn

4. climb up the tree = (　　) up the tree

① take　② get　③ put　④ go

5. swallow down the medicine = (　　) down the medicine

① drink　② get　③ put　④ go

Appendix D

● Examples of corpus-based teaching materials

(1) High- frequency adverbs with phrasal verb *give up*

1. Children with negative self images believe academic achievement is unlikely, and give up （quickly） when faced with a difficulty task. (COCA)

2. You don't necessarily have to give up meat （entirely） to see a benefit, (COCA)

3. Decreasing physical flexibility had forced the 76-year-olds to give up bicycling (altogether). (COCA)

4. That assertive step launched my new relationship with food and helped me give up dieting (altogether). (COCA)

5. I wouldn’t give up （altogether）.（Gutenberg）

6. You give up too （easily）.(COCA)

7. I don't want to give up hope（completely）.(COCA)

8. She could not give up (completely). (COCA)

(2) High- frequency objects with phrasal verb *give up*

1. But Jimmy's best friend Roger was not about to give up （hope）. (COCA)

2, Is it hard to give up the glamorous （life）? (COCA)

3. We tried to get Saddam Hussein to give up his （weapons） of mass destruction. (COCA)

4. He or she may quickly give up （trying） to manage a disruptive child's behavior. (COCA)

5. So I just gave up （trying） to remember her right name. (Gutenberg)

6. I'm not ready to give up （being） happy. (COCA)

7. He was trying to give up （smoking） again but not having much luck. (COCA)

8. The trouble was I thought that for a change I would give up （drinking）. (COCA)

(3) High-frequency verbs with *to give up*

1. So many people feel that they （want） to give up, that they've tried everything. (COCA)

2. Anytime you （want） to give up the bathroom is cool with me! (COCA)

3. I （refuse） to give up my optimism about Los Angeles. (COCA)

4. Democrats （refuse） to give up on reforming Wall Street. (COCA)

(4) High-frequency auxiliary verbs with phrasal verb *give up*

1. I（would） give up my doll and all my playthings.（Gutenberg）

2. You （will） give up this wretched practice at once.(Gutenberg)

3. Gorbachev （did） not give up his post as party general secretary until the party's control system was virtually dismantled.（WebParaNews）

4. Ishikawa contends that she （did） not give up her citizenship as she married against her will.（WebParaNews）

5. Then he felt so homesick that he feared he would （have） to give up his place. (Gutenberg)

6. I was not （going） to give up my rights to you. (Gutenberg)

(5) Various phrasal verbs with clothing meanings

1. Max （put） on his lucky clothes and immediately thought of some ideas. (COCA)

2. She quickly（put）on her clothes, and sprinted around the point back to Hana and Mara. (COCA)

3. I （pulled） on a pair of jeans, a work shirt, and my running shoes. (COCA)

4. Wearing a gown, Eckstein bent over to （pull） on a pair of socks and mooned his sister. (COCA)

5. Diccan was still （pulling） on his gloves when he saw Bertie raise the gun again. (COCA)

6. So he dressed, （pulled） on his boots, and did as Allie asked. (COCA)

7. They jumped up and （pulled） on the clothes closest to them. (COCA)

8. When he finally rolled off of me, I quickly （pulled） on my jeans. (COCA)

9. Joanna stood up and （slipped） on a pair of Louis Vuitton sunglasses. (COCA)

10. He had managed to escape by the roof, with just enough time to （slip） on a pair of pants and a shirt, no shoes. (COCA)

11. She silently crawled out of bed and （slipped） on some shoes. (COCA)

12. Billie sat on the edge of the futon and （slipped） on her shoes. (COCA)

13. I jumped out of bed, （threw） on some clothes and ran outside. (COCA)

14. When night fell, I （threw） on a jacket and cap and drove to the Augusta National Golf Club. (COCA)

(6) Various phrasal verbs with removal meanings

1. Why are you （taking） off your clothes? （COCA）

2. They lie down on the bed without （taking） off their coats or shoes. （COCA）

3. When Mom dropped me off, I hurried into the house and （took） off my hat, coat, and boots. （COCA）

4. She'd（slipped）off her shoes and tucked her slender feet against the brown leather cushion. （COCA）

5. She （slipped） off the jacket he had given her.（COCA）

6. He shivered and （threw） off the covers. （COCA）

7. Now I must（kick）off my boots and stockings. (Gutenberg)

8. Becky’s cap almost （fell） off entirely. (Gutenberg)

9. The red cap （came） off and remained floating on the surface. (Gutenberg)

(7) High- frequency adjectives with phrasal verb *grow up*

1. My dad wanted us to be safe, to grow up happy, （healthy） and strong. （COCA）

2. Fall cauliflower also needs plenty of room to grow up healthy and （strong）. （COCA）

3. I didn't grow up （poor）. （COCA）

4. Kids who are raised by one parent can obviously grow up （happy）. （COCA）

5. I mustn’t let them grow up （idle）. (Gutenberg)

6. I think he will grow up （pretty）, and perhaps be smaller. (Gutenberg)

(8) High- frequency adverbs with phrasal verb *grow up*

1. The baby birds are expected to grow up （fast） and fly on their own in about two months. （COCA）

2. Consider how the plants are going to grow up （together） and what they will look like in six months or a year. （COCA）

3. Did he grow up （here） in Yokohama? （COCA）

4. I had to grow up（quickly）. （COCA）

(9) High-frequency words with phrasal verb *grow up*

1. I feel sad that he doesn't get to watch his （children）grow up.（COCA）

2. That is how （people）grow up and heal the wounds of their childhood. （COCA）

3. When （people）grow up they forget the way. (Gutenberg)

4. The （children） will grow up in sunlight and fresh air instead of in a city filled with smoke. （COCA）

5. How do you think this （child） will grow up in his life? （COCA）

6. I would love to have my （boys）grow up to be like him. （COCA）

7. The older （son） will grow up and move to Memphis. （COCA）

8. （Girls）grow up to be women. （COCA）

9. It is important to note that artificial reproductive technology may encourage parents to want "excellent babies" instead of hoping that their （children） will grow up happily. (WebParaNews)

10. Likewise, I will also work to create an environment in which （children） can grow up safe and sound and to facilitate greater independence and social participation for the disabled. (WebParaNews)

(10) High-frequency auxiliary verbs with phrasal verb *grow up*

1. Maybe your daughter （will） grow up to be a spy, or a vigilante. （COCA）
2. I always figured I （would） grow up and live the same lifestyle. （COCA）
3. These vigorous vines （can） grow up to 30 feet long. （COCA）
4. I'm worried she'll （grow） up in a world where she'll never see a panda. （COCA）
5. I don't understand how any kid （could） grow up properly without any siblings. （COCA）

(11) High-frequency verbs with to *grow up*

1. So you don't （want） to grow up to be an astronaut anymore? （COCA）
2. I am never （going） to grow up, if that's what you mean.（COCA）.
3. You （have） to grow up sometime. （COCA）
4. How should you （like） to grow up a clever man, and write books, eh? (Gutenberg)
5. I'd nearly forgotten that I've （got） to grow up again! (Gutenberg)

● Examples of activity tasks for students

(1) What is the missing word in each of the parentheses?

(2) What is the meaning of each phrasal verb?

(3) What is the word collocated with each phrasal verb?

(4) Make a list of high-frequency words for each phrasal verb item.

(5) Write down the content words (nouns, verbs, adjectives, and adverbs) in each sentence.

● Example activities using COCA to explore the phrasal verbs *put on*

On the left-hand side of the screen, enter the following:

1. At DISPLAY, select CHART

2. At SEARCH STRING, WORD(S), enter *put on*

3. Click on POS LIST, from the drop-down menu select noun.ALL

4. At SEARCH STRING, click on SEARCH

5. Then, you will get the following list.

6. Write down the nouns of the clothing.

7. Write down the abstract nouns and their meanings.

8. Write down the concrete nouns and their meanings.

9. Calculate the percentage of the nouns with clothing meanings.

10. Write down the difficult expressions for you.

List of the 100 most frequent *put on noun* sequence

rank	noun	frequency	rank	noun	frequency
1	SHOW	442	51	SCREEN	58
2	HOLD	426	52	PLAY	57
3	WEIGHT	272	53	WOMEN	57
4	CLOTHES	264	54	SHOWS	56
5	TABLE	245	55	CAP	55
6	FACE	214	56	HOUSE	55
7	PRESSURE	214	57	LIFE	55
8	TRIAL	213	58	NOTICE	54
9	SHOES	186	59	MAN	53

10	COAT	171	60	YEARS	52
11	POUNDS	169	61	NIGHT	49
12	PEOPLE	162	62	THING	49
13	HAT	154	63	YEAR	48
14	SUIT	154	64	JEANS	46
15	DISPLAY	145	65	SPOT	46
16	MAKEUP	142	66	WORK	46
17	TIME	142	67	FLOOR	45
18	PAIR	130	68	MASKS	45
19	SHIRT	127	69	KIND	44
20	UNIFORM	123	70	AIRS	43
21	GLASSES	120	71	BED	43
22	JACKET	118	72	HEAD	43
23	DRESS	114	73	SOCKS	43
24	LIST	112	74	ACT	42
25	GLOVES	104	75	COFFEE	42
26	MUSIC	103	76	PROGRAM	42
27	EMPHASIS	94	77	SWEATER	42
28	ROBE	90	78	COATS	41
29	BOOTS	87	79	LEAVE	41
30	AIR	86	80	TAPE	41
31	DEFENSE	83	81	BURNER	39
32	DAY	79	82	WATER	39
33	EARTH	78	83	PEDESTAL	38

34	LIPSTICK	78	84	PLANE	38
35	HAIR	76	85	PRESIDENT	38
36	MASK	76	86	MEN	37
37	PROBATION	76	87	NAME	37
38	BACK	73	88	SCHOOL	37
39	LOT	73	89	KIDS	36
40	PERFORMANCE	67	90	SHELF	36
41	CASE	66	91	SHOWER	36
42	THINGS	65	92	SUNGLASSES	36
43	BRAKES	64	93	TELEVISION	35
44	PAPER	64	94	BELT	34
45	SMILE	62	95	PAJAMAS	34
46	MORNING	59	96	TOP	34
47	RECORD	59	97	BALLOT	33
48	MARKET	58	98	BODY	33
49	PANTS	58	99	GEAR	33
50	ROOM	58	100	HEADPHONES	33

● Examples of teaching materials using Japanese verb *kaburu* in WebParaNews

1.「外出時には、つば広の帽子をかぶること」「ひなたで過ごす時間を減らすように」といった警告が出された国があった。

Concerned by this disturbing development, some countries have issued warnings and instructed people to （wear） hats with wide brims when outside and to reduce the time they expose themselves to the sun.

2. 二 人組 は サングラス を かけ て い た だけ で なく 、タオル で 口元 を 隠し 、野球 帽 を かぶる など 完全 に 顔 を 覆う よう な 格好 だっ た こと も 判明 。

The two men （wore） sunglasses and baseball caps and had their mouths covered with towels.

3. だが 、証券 ・ 資本 市場 で は 、その 投資 リスク を 、個人 など 投資 家 が 直接 かぶる こと に なる 。

Instead, investors are the ones who are exposed to （risk） in security and capital markets.

4. 地方 の 厳しい 実情 に 配慮 し 、 税制 改正 で も 国 が ある程度 の 負担 を かぶる の は 、 やむを得 まい 。

The central government will no doubt have to （shoulder） a certain burden in the envisaged tax reform, given the poor fiscal conditions of local governments.