Consideration of the web-based learning method: English prepositions[1]

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Abstract

This study explores three web-based learning methods and discusses the existing issues in the advanced methods. One of the issues is the English preposition, which is almost always asked by learners of English even at the advanced level. In addition, some combinational use of prepositions is also one of the well-known requests raised by the learners. The use of prepositions is very flexible because they are used based on their original meanings in one way, but in another sense, their origins and fixed meanings cannot be easily noticed in many combinational structures such as phrasal verbs and idioms. Thus, this paper deals with an issue about English prepositions. The three web-based learning tools for this study are online dictionaries, web search engines and corpus programs. Through these web-based tools, learners may obtain not only the literal meanings of the prepositions but also additional information of their collocations and combinations. This method, however, does not give learners sufficient explanations about structural analyses which are necessary to understand what the expressions are used in what situations or contexts. This study, therefore, argues that more fundamental approaches such as syntactic and semantic analyses should be significantly considered for completing the explanation.

Keywords

web-based learning tool, online dictionary, web search engine, corpus data, English prepositions, phrasal verbs, syntactic analysis, semantic analysis

1 Introduction

In the area of the English language education, the use of prepositions is one of the trickiest issues for learners of English at almost all levels (Hargis, 2008). Using grammar books has been a typical way for a long time because grammar books are usually first given to the learners. Recently, it is the most convenient way for Korean learners of English to use web-based tools such as online dictionaries and web search engines. It is simply because the Internet access is always available in everywhere and at the same time learners can quickly obtain what they want to know from the massive data that the Internet provides. This study deals with one of the typical problems that Korean adult learners of English have in learning English prepositions. They almost always ask what kind of prepositions must be used in some situations or why certain prepositions must be used in the examples given to them. It is more often asked by learners when the prepositions occur with verbs or adjectives as in phrasal verbs and adjective + preposition combinations. It is because the prepositions do not seem to be easily predictable based on their meanings alone. The present study proposes that despite the abundance of web-based tools, syntactic and semantic analyses are still necessary for learners to properly comprehend the given sentences.

In the following sections, English prepositions will be first briefly discussed, based mainly on the definition and the delimitation of this paper. Next, the web-based learning tools will be introduced, including the search results from the tools. Lastly, the discussion section presents syntactic and semantic analyses of the results.

2 English prepositions

There are over 100 prepositions in English (Hall, 1982), but the 85 prepositions are more frequently used (as cited in Hargis, 2008). Only nine of the 85 occupy the 90 percent of the entire use of the prepositions: they are *at, by, for, from, in, of, on, to* and *with* (as cited in Hargis, 2008). This means that only a few prepositions

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are used in so many different ways, which can be troublesome to non-native English users (Lindstromberg, 1997). Thus, this study attempts to investigate English prepositions, especially their uses with verbs and adjectives. In this section, general discussion about English prepositions will be made, dealing with the definition and the delimitation of the terminology.

2.1   Definition and delimitation

Prepositions, as a closed word class, usually occur before noun phrases, having a function to relate two parts in a sentence (Berry, 2012). Semantically they inform the relationships in time, space or location, and direction between things and events (Altenberg & Vago, 2010; Hurford, 1994; Trask, 1993). Many research works are about the relationship between prepositions and particles or adverbs. It is because in English, all the three are formally the same, thus, they are differently argued by different scholars (Fernald, 1904; Lindstromberg, 1997; Puente, 2013).

Regarding particles, a linguistic dictionary says that the particle is a "preposition-like item", often occurring in phrasal verbs such as *make up*, *take off*, and so on (Trask, 1993). It is also considered as an element to bear the salient part of the meaning of the delexical verbs like *get, go, set,* and *take* that often occur in the phrasal verb category (Puente, 2013).

In this paper, the term *preposition* will be used for denoting both prepositions and particles including preposition-like particles. It is because they are formally the same and the term *particle* itself is not typically used by English language learners (Lindstromberg, 1997). Learners use *preposition* regardless of whether it is in the phrasal verb structure or a prepositional phrase (PP). Thus, this study keeps the term *prepositions* for all purposes.

Occurring with the prepositions, the verbs and the adjectives for the present study are as follows: *take, find, decide*, *surprise(d)*, *afraid*, and *familiar.* The first three verbs are selected from the list of the phrasal verbs investigated by Puente (2013), which are the most frequently combined with prepositions, possessing more than 100 tokens of their occurrence in phrasal verbs[2] searched in ARCHER (A Representative Corpus of Historical English Registers). The verb *surprised* (controversially called adjective) and the two adjectives are selected based on the ones frequently asked by my students in class.

3   Web-based learning tools

The web-based learning tools introduced in this paper are online dictionaries, web search engines, and corpus data collections. Online dictionaries are the most popularly used these days along with the introduction and spread of the Internet. Online dictionaries compile a collection of the most popularly used dictionaries, so foreign language learners easily look up vocabulary words and expressions, without carrying heavy paper dictionaries. Most Korean students possess internet networks to get access to the online dictionaries, and this is one of the most common ways of looking up words and expressions to study foreign languages. This study uses English Oxford Living Dictionary (henceforth, Oxford Dictionary) for the online dictionary investigation[3]. It is because this dictionary presents the meanings of the target words with various examples as well as their uses in phrasal verbs.

The second web-based learning tool is a web search engine like Google Search (google.com). This is a kind of second step of examining the combinations of the verbs/adjectives with prepositions. After finding some combinations in the online dictionaries, those combinations are checked in the Google website to figure out how often they are actually used by the native speakers of English and in what contexts they are often used, based on the frequency of the combinations. This web-based searching method takes only the base forms of the verbs with their paired prepositions because the hit results are for the possibility of the combinations themselves, not for the gap between the base and conjugated forms. The double quotation marks are used to identify the exactly matched phrase of each combination.

The third and last web-based tool is corpus data programs. The corpus programs selected for this study are the Corpus of Contemporary American English (COCA) and the iWeb corpus. The COCA[4], released in 2017, contains more than 560 million words of American English. The data were collected from 220,225 texts extracted from different sources from various contexts such as spoken data, sports news, fictions,

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[2] There are three more verbs other than *take* and *find* having the most frequent tokens: *go, come,* and *sit*. These are mainly used as an intransitive verb, which means they can more easily company with prepositions. This study selects the verbs that are often considered as transitive verbs to Korean learners of English.

[3] The online version of Cambridge Dictionary is also used to compare unclear ones in Oxford Dictionary.

[4] All information about COCA is quoted from the COCA website, https://corpus.byu.edu/coca/, and Wikipedia, https://en.wikipedia.org/wiki/Main_Page.

magazines, newspapers, and academic journals. It focuses on American variety. The iWeb corpus contains 14 billion words, which is approximately 25 times the size of COCA. It covers any types of varieties of English. The target verbs and adjectives will be first searched to see if we can actually find the expecting combinations in the massive data; to check how many target expressions are found in the data; and to see what we can obtain the search results[5].

3.1   Online dictionaries

The target verbs and adjectives with no prepositions were first looked up, and all prepositions occurring with them are shown in Table 1.

Table 1: The preposition results with the target verbs in Oxford Dictionary

	Oxford Dictionary
take	after, against, apart, away, away from, back, down, from, in, off, on, out, out on, over, to, up, and up with
find	against, for, in, out
decide	against, by, in, on
surprise	at, by, (to)

The prepositions for the *take*-combinations are as follows: *after*, *against*, *apart*, *away*, *away from*, *back*, *down*, *from*, *in*, *off*, *on*, *out*, *out on*, *over*, *to, up*, and *up with*. All of these also occur in the Puente's phrasal verbs list except for the preposition combinations such as *away from, out on,* and *up with* (Puente, 2013). The term that Puente uses for these prepositions is *particle*, which refers to small words that usually form the second part of phrasal verbs (Hurford, 1994). As mentioned above, some technical terms are not actually used by learners, and *particle* is one of them, so, this study considers the second part of phrasal verbs as prepositions.

The next verb *find* shows *against*, *for*, *in* and *out* for its prepositions. The three but *in* occur in the phrasal verb examples in Oxford Dictionary; *in* is found in the examples of the verb *find* alone, not in the *find*-combinations. Oxford Dictionary indicates that *decide* takes *against*, *by*, *in* and *on*, and all of them are found in the example section of the verb *decide*. However, *decide on* is actually classified into a phrasal verb in other dictionaries (Cambridge Dictionary[6]), and also it was asked by the learners of English who considered it more likely to be an idiom. Thus, this combination is categorized as a phrasal verb. The last verb in the list, *surprised* is analyzed in two different ways: as an adjective and a verb. The so-called *adjective* use often occurs before a noun or after the verb *look*, and Oxford Dictionary shows this use separately from its verbal use. The past participle form *surprised* mostly occurs after the *be* verb as in the passive construction, thus this study treats *surprised* as a verb (past participle) to deal with prepositions that the verb takes. Its prepositions are *at*, *by* and *to* in Table 1. Among the *surprised*-combinations, the *surprised-to* is left out since it is a *to*-infinitive structure (not a prepositional structure). Now, let's turn to the two target adjectives.

Table 2: The preposition results with the target adjectives in Oxford Dictionary

	Oxford Dictionary
afraid	of, for, (to)
familiar	to, with

The prepositions taken by the target adjectives are presented in Table 2. First, *afraid* is learned as an *of*-combination. Other elements such as *for* and *to* with *afraid* are also found in the dictionary, but many Korean students learn *afraid of* as an idiom. Thus, *afraid for* and *afraid to* are not commonly learned by the Korean learners of English. Regarding *afraid to*, this study does not deal with it because *to* is used with the

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basic verb as a *to*-infinitive clause[7].

The next adjective, *familiar* shows that it can occur with *to* and *with*. This is also relatively new to Korean students, because they learn *familiar with* as an idiomatic expression. Oxford Dictionary does not directly elicit the structural difference between the two combinations. In other words, the dictionary does not tell in what situation *familiar with* is used and in what context *familiar to* is used.

Through the online dictionaries, we found some possible (or commonly used) prepositions with the target verbs and adjectives, including their dictionary meanings and examples. There are no further explanations about the prepositions, which means that the dictionary assumes that the users may already have the ideas of what meanings and functions of the prepositions have affected the combinations. Based on these results, next section introduces the web search engine results of the combinations.

3.2　　Web search engines

Most web search engines contain their own online dictionaries, but in this study, those online dictionaries are not considered as part of the web search engines. Using the web search engines refers to the hit results of the target combinations in the web site. For example, if *"take after"* is entered into the search box, the hit results occur underneath the search box. The hit results in this study are taken from the *News* and *Books* sections because the searched combinations are regarded to be firmly used when found in more fixed contexts such as more written-style contexts. The online publication of web news and books is newly added every minute, so the hit numbers may be different depending on the searching date and time. The time of the search is presented in the tables.

Table 3: Hit results of the *verb-preposition* combinations

verbs	prepositions	Google hit results (Jan. 22, 2019)	
		News	Books
take	after	41,900	415,000
(5,820,000,000)	against	18,900	156,000
	apart	29,100	154,000
	away	10,400,000	12,500,000
	away from	664,000	2,400,000
	back	2,470,000	2,980,000
	down	7,880,000	2,230,000
	from	258,000	6,650,000
	in	27,400,000	16,100,000
	off	16,900,000	14,000,000
	on	87,300,000	22,100,000
	out	7,860,000	9,580,000
	out on	131,000	139,000
	over	34,400,000	18,100,000
	to	25,200,000	17,800,000
	up	17,400,000	36,700,000
	up with	252,000	1,890,000
find	against	2,790	94,000
(9,850,000,000)	for	55,100	4,090,000
	in	4,370,000	38,300,000
	out	665,000,000	53,700,000
decide	against	24,300	239,000
(735,000,000)	by	34,500	506,000
	in	90,400	2,480,000
	on	4,180,000	6,890,000
surprised	at	489,000	8,110,000
(334,000,000)	by	6,880,000	5,340,000

Note: The verb hits are examined with the double quotes for the exact search, as in "take", "find", and so on.

In the Google hit results, it can be easily recognized which combinations are more frequently used in the

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news and books sections. The squares in the table indicate the highest hit results in both combination sessions. For example, among *take*-combinations, the *take on* combination occurs most frequently in the sum of news and books, which is 109,400,000. Although *take up* has a higher result in the books, the sum of news and books is 54,100,000, which is almost half of that of *take on*. Likewise, the *find*-combinations shows the *find out* combination is the most frequent, and the *decide on* overwhelms the others in the *decide*-combinations. Interestingly, the *surprised* combinations are relatively competitive with each other. There is no clear and convincing reason for this result but according to the comments of some native speakers of English, American people use *surprised by* more, while British people prefer *surprised at*[8].

Table 4: Hit results of the *adjective-preposition* combinations

adjectives	prepositions	Google hit results (Jan. 22, 2019)	
		News	Books
afraid	of	9,560,000	24,600,000
(336,000,000)	for	46,700	1,080,000
familiar	to	468,000	12,900,000
(926,000,000)	with	31,300,000	42,000,000

The adjective combinations show the same hit result pattern in the news and books sections: *afraid* of and *familiar with* have higher results than the others in both news and books. What this tells is that one combination of each adjective is more used by the English speakers, and this information gives learners of English a chance to know they will encounter situations where *afraid of* and *familiar with* are more often used.

All this result inform learners of English of noticing additional information: for example, learners can take a look at the web pages producing the hit results and learn when and where the users actually use the combinations. The learners can also get numerous examples for the target expressions through the search engine. There is, however, a shortcoming that could be influential: quite often, learners can be accidentally exposed to the erroneous uses of the target expressions (because they still have some hits anyways) and may simply accept them as what they have to know.

To avoid such errors in the use of web search engines, learners can use another advantage of the web sites: a platform (e.g., the WordReference forum). The platform is a web space to share knowledge of some linguistic issues for language learners. For example, the *familiar*-combinations can be discussed in the WordReference Forums. Many native speakers of English visit and leave their intuitive messages about the target expression asked by the language learners, and the learners obtain explanations they want to get. In the forums, *to+someone* and *with+something* are clearly uploaded by many native speakers. The platform in the web search engine provides this information. Thus, learners can get something beyond dictionary meanings or hit results of the target expressions.

3.3   Corpus data collections

This section deals with the two corpus programs providing the target combinations. As introduced earlier, the COCA and the iWeb corpus are the ones of the most popular tools for the English corpus data: the former is for American English and the latter is for all English data sources. However, this type of tool is not widely known to Korean student learners because they easily get explanations through other sources such as grammar books and online tools including online dictionaries. Despite this fact, the reason for employing corpus programs in this study is that as the most expecting tool, they contain massive data results produced by native speakers of English, and the tools show almost all the structures of the target combinations. The numbers of the corpora in Table 5 and Table 6 are the normalization results with the average frequency of one million words (per million). A few samples of the concordance lines in the often used contexts of each corpus program are presented in Appendix A[9].

Table 5: Corpus data results of the *verb-preposition* combinations

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[8] This is based on the comments in the 2018 PAAL Japan conference. In order to double check this, I asked several native speakers of English from the U.S. and the UK who have been working at Busan University of Foreign Studies.
[9] Due to page restrictions, only a few samples of the concordance lines are introduced in the paper. All the rest of the concordance lines will be provided at any time if requested.

verbs	prepositions	Corpus program	
		COCA (per million)	iWeb (per million)
take	after	0.35	0.28
	against	0.08	0.06
	apart	0.26	0.47
	away*	6.23	6.42
	away from	1.21	1.56
	back	2.47	1.97
	down	1.96	2.88
	from	1.44	1.60
	in	6.47	8.59
	off	9.29	7.07
	on	20.43	25.94
	out	6.18	8.33
	out on	0.04	0.04
	over	11.61	9.07
	to	9.17	12.98
	up	9.02	13.06
	up with	0.15	0.05
find	against	0.02	0.01
	for	0.42	0.84
	in	5.62	7.54
	out	50.97	66.00
decide	against	0.12	0.10
	by	0.18	0.08
	in	0.49	0.30
	on	2.29	4.08
surprised	at	4.27	3.75
	by	5.99	4.07

Note: *take away** includes *take away from*. It is impossible to sort *take away from* out from *take away* phrases, so their normalization results are just as in the corpus data programs.

Table 6: Corpus data results of the *adjective-preposition* combinations

adjectives	prepositions	Corpus program	
		COCA(per million)	iWeb Corpus
afraid	of	18.78	9.40
	for	0.81	0.94
familiar	to	4.54	7.23
	with	16.84	15.26

Like the hit results of the web search engines, the combination patterns are the same in both corpus programs. The verb combinations *take on*, *find out*, *decide on*, and *surprised by* are the highest tokens in this corpus examination, and the *surprised by* combination is very close to *surprised at* in both COCA and iWeb. The highest adjective combinations are *afraid of* and *familiar with* in both corpus programs. This is the same as those of web search engines.

The great gap between the COCA and iWeb corpus is caused by the fact that the iWeb corpus has more availability of the data: it possesses 14 billion words from different English varieties, while COCA has 560 million *American* English words. However, the two the corpus results show a similar pattern. For example, *take on* in Table 5 is the highest results in both the COCA and the iWeb corpus.

A useful thing for this method is that learners can get a great collection of the target expressions at once. For example, the *familiar* combinations, despite the difference in their hit results, are both judged as

grammatical as described in dictionaries; the combinations have more chances to occur with more contextual information with must less accidental erroneous ones. Collocations for *familiar* meet an explanation about the difference between *familiar to* and *familiar with*: human nouns after *to* and other object nouns after *with.* What corpus data can provide more efficiently than the Google website is that the former has a massive collection of target phrases and sentences with the least erroneous use, so that learners do not need to try to scroll up and down in order to find the target expressions inside all the web pages.

Overall, all the three web-based learning tools obviously have usefulness in learning English: single words (verbs and adjectives) are shown in a dictionary, and it presents various expressions including the combinations with some possible prepositions; with the results of the dictionary search, the web search engines and the corpus tools show whether they are actually used or not, and inform in what situations and contexts they are used. This is a very useful method for learners of English (even other languages), but there is one question raised at this moment: where and why the prepositions in the combinations can occur with other word categories? What do the prepositions mean in the combinations? Are there any other meanings or functions of the prepositions in the combinations? The web-based learning tools, in fact, cannot cover all these questions. This study argues that syntactic and semantic analyses with respect to the prepositions must be preliminarily checked and accompanied with other web-based learning tools.

4   Discussion

Until now, we have investigated some *verb-preposition* and *adjective-preposition* combinations through the most popular web-based learning tools. Online dictionaries digitalize almost all dictionaries in the world and provide almost unlimited information. Web search engines also save all digitalized information (including online dictionaries that the search engines possess), and they are also cyber platforms to meet and share any queries within a few minutes. These platform web pages make learners possible to have intuitive knowledge from native speakers of English without the physical nearness with them. The corpus programs collect massive data produced by English speakers for a long period, so even many experts and teachers use this method to teach and make useful materials as well.

Regarding prepositions, however, this study attempts to drag out something so basic and necessary that it is often considered as a cliché: the syntactic and semantic analyses. The advanced online dictionaries provide several combinations of the verbs and prepositions under the name of "phrasal verbs", with various examples. In a linguistic sense of grammar, the term "phrasal verb" is controversial. As mentioned earlier, some scholars strictly say the second element of the phrasal verb is a particle not a preposition (Puente, 2013), but others use the term *preposition* in a broader sense because the term *particle* is not familiar to most lay people (Lindstromberg, 1997).

This study uses *preposition* for the same reason as Lindstromberg's, and also argues that syntactic and semantic analyses of English prepositions affect the *verb-preposition* and *adjective-preposition* combinations. Syntactic and semantic analyses, for example, indicate that the prepositions are more likely to be independent from the verb and the adjective; in other words, the preposition, as a head of a PP, is semantically bound more with the noun phrase in the PP (Fernald, 1904). Learners should first know the meanings and functions of the prepositions instead of simply memorizing phrasal verbs or idioms. When the preposition's original meaning and function has faded so that there is a closer bond with the verb[10], it's considered as a phrasal verb: in this case, learners must memorize the combination as a phrasal verb. To discuss this issue, we will take a closer look at the combinations, focusing on the prepositions. Let's start with the *find*-combinations first, because the *take*-combinations have the most prepositions in the combination list.

First, the prepositions with the verb *find* are *against, for, in,* and *out*. The verb *find* is a transitive verb, but there is an exceptional use as an intransitive verb: it's the case when used as a legal term (Cambridge Dictionary). The verb *find* in *find guilty* is an intransitive, meaning 'to make a judgment in a law court', not 'to discover something unexpectedly'; relatedly, *find against* is a court term, meaning "make a decision against". The preposition *against* keeps its meaning and function: "opposite to", "in opposition to", "in resistance to", etc. In short, the bond of *against*+NP more heavily functions in the combination *find against*. In fact, this is also found in *decide against*. *Decide against* is not classified into a phrasal verb in Cambridge Dictionary and Oxford Dictionary. In the combination of *decide-against*, syntactically and semantically, *against* is bound more with the NP as in the *find against* combination. This is even supported by the combination *find for*: it is also a legal term, as an opposite meaning to *find against*. The meanings of *for* and

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[10]   This is about *compositionality* (Griffiths, 2006), which will be discussed later.

against determine the meaning of each combination, and the meaning of *find* remains the same in both combinations. Similarly in a sense that the preposition is semantically strongly saved, *find in* follows the two *find*-combinations above. The preposition *in* with *find* only occurs when it is accompanied with a passive construction or with other PPs like *in favor of*. Thus, *in* in *found in* functions based on its prepositional meaning, "denoting something as limiting or specifying" (Fernald, 1904). *In* of the phrase *in favor of* belongs to the PP only, and has no special relation to the verb *find.* This can lead learners to have more effective ways to learn such various combinations: the independent use of the preposition means that learners can first guess the general meaning of the new expression based on the meanings of the verb and the preposition, respectively.

Lastly, *find out* as a phrasal verb is most frequently used among the *find*-combinations, and it is a little different from the other *find*-combinations. *Out* in *find out* has almost lost its original meaning and function, which is "source or origin" or "separation or away from" as usually in *out of.* The verb *find* and preposition *out* must be together to denote "to learn a fact or piece of information for the first time" (Cambridge Dictionary). To figure out the difference between *find* and *find out*, learners should rely more on Google or corpus data[11]. That is, more examples and collocations of the combination must be studied rather than the dictionary meaning or semantic and syntactic functions of the preposition *out*. In short, knowledge from the prepositions can figure out which combinations must be learned or looked up more in dictionaries; use more situational examples through the Google website or corpus data, including hit result gaps telling that it is more possibly a phrasal verb based on the fact that the combination hit results are much higher than the other combinations.

The next verb, *decide* is used as intransitive and transitive verbs unlike many Korean students have known it as a transitive verb only. Thus, prepositions right after the verb *decide* very possibly occur. The question is what prepositions may be used for *decide* and how the phrasal verb can be explained to learners if any. Regarding the three *decide*-combinations, first, *decide against* can similarly explained as *find against*; and *decide by* and *decide in* also have a similar pattern to *find in* just like occurring in a passive construction or the *by*-phrase as in *by the time* and *in*-phrase as in *decide in favor of*. The highest frequent one, *decide on* is just like *found out*, a phrasal verb: the function and meaning of *on* faded out, and the verb and the preposition together denote a meaning, "to choose something or someone after careful thought". In this case, learners also rely more on the web-based tools.

The next verb is *surprised*. Its prepositions are *at* and *by.* Most Korean students learn and memorize *surprised at*+NP at a high school level. My students asked about the cases with *by*. Cambridge dictionary, the Google web site and corpus data present numerous examples with *by*, but there are no explanations about in what situations each preposition may be used. Thus, syntactic and semantic analyses are required. First, *by* is the preposition for a passive construction so that the *by*-combination occurs when the Agent is necessarily mentioned. Second, *at* must be considered with its meaning: as a preposition, it has a non-spatial meaning for an NP to indicate a target as in *angry at me* (Lindstromberg, 1997). The preposition *at* often occurs with adjectives and past participle like *surprised* to express furious feelings and emotions such as *angry, mad, annoyed, astonished, amazed, startled,* etc. If such information is prior to a simple memory of the target expression, it would be more helpful for the learners to understand the combinations.

The biggest combination group is the *take*+prepositions*.* There are 17 sets of the combinations. Among them, *take back* could be left out because strictly speaking, *back* is not a preposition, but a directional adverb (Lindstromberg, 1997). Dictionaries also say that *back* is a noun, an adjective, an adverb, and a verb (Oxford Dictionary). However, some scholars classify *back* into an intransitive preposition (as cited in Coventry & Garrod, 2004), and also *take back* is considered as a phrasal verb by Puente (2013). The adverb *back* has a strong position in this pair, referring to a past time for *take someone back*, and retracting a statement for *take something back*. All the uses of *back* here are based on the meaning of 'return to a previous location and going back in time' (Lindstromberg, 1997). Whatever it may be (as mentioned earlier, adverb-like ones are not technically identified because they are combined with the target verbs in this study), *back* keeps its meaning in the combination *take back*. Thus, learners should know the semantic and syntactic use of *back* before memorizing the combination itself.

Most of the *take*-combinations, although there is a difference in a degree of the transparency of the prepositions, have some compositional sense of the paired prepositions: the meanings of the parts are put together to refer to the meaning of the whole (Griffiths, 2006). The prepositions of the phrasal verbs do not seem to keep their original meanings and functions: that is, the part of preposition is semantically reduced, so

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[11] According to the corpus results, *find out* takes more clauses such as *that* and *what* clauses, where are *find out + about* + NPs are similarly found as in *find* with simple noun phrases.

the combination becomes less compositional. Learners should rely on the dictionaries or other sources to get precise information. Interestingly but not necessarily relatedly, in the corpus data results, among all the *take*-combinations but *take up with*, the highest frequently used combinations (*take on/over/to/up*) seem to be less compositional (more likely to be phrasal verbs). Although there must be a situational factor, this may be because the combination itself is more often used as a whole instead of the separation between the verb and the preposition. The combinations *take out on* and *take up with* have the least frequency but seem the least compositional[12]; it may be because there are prepositional (or adverb) combinations such as *out on* and *up with*.

The other combinations have some degrees of the meanings of the prepositions: i) *after* in *take after* has a meaning of *after* "following and as a result of", so that 'resemble' has the meaning of a result of 'having a similar qualities'; ii) *against* in *take against*, as mentioned before, has the idea of opposition, thus, something opposed is relevant to 'dislike' it; iii) *apart* in *take apart* means 'separated by a distance or by time', so the meaning of this combination is 'dismantle something'; iv) *take away* is used when people buy food at a restaurant and eat elsewhere, which is also has the meaning of *away*[13] 'somewhere else'; v) *take away from* is different from *take away*, but it means 'detract from', which refers to the influence of *away from*; vi) *take down* has two meanings of 'taking a note' and 'dismantling and removing a structure', and *down* 'from higher level to lower' is somehow projected in the meaning of 'writing down from the spoken' and 'removing the structure', which basically means the removed parts must be put down anyways; vii) *take from* 'detract from' also has a meaning of *from* 'indicating the point in space at which a journey, motion, or action starts'; viii) the meaning of *take in* 'accommodate someone as a lodger or because they are homeless or in difficulties' has the meaning of *in*, that is, there is a direction of the inside; ix) *take off*, although it is a phrasal verb, is often used in the aircraft industry, but *off* 'away from or at a distance from' is partially influential; lastly, x) *take out*[14] partially has the meaning of *out*[15], which means 'moving away from a place' (Hall, 1982; Cambridge Dictionary; Oxford Dictionary)

Overall, as mentioned earlier, this sorting-out process can provide for learners more comprehensive ways to learn various combinations, not simple memorizing: studying the independent uses of the prepositions first, learners can predict some general meanings of the verb- or adjective-preposition combinations based on the meanings of the verb/adjective and the preposition. This step can help learners use the prepositions for applying their prior knowledge about the prepositions to other uses of the prepositions.

Now, let's discuss the *adjective-preposition* combinations. Many Korean learners of English regard *afraid of* as an idiom, recognizing a less possibility of being with other prepositions such as *for* and *to* as in Table 2. Although English-Korean bilingual dictionaries show some examples for *afraid+for* and *afraid+to* combinations, *afraid+for* is not actually distinguishable from *afraid+of* (the *afraid+to* combination is clearer than *afraid+for* because *to* is for *to*-infinitive as mentioned earlier). Semantically, *of* indicates 'result' as in 'die of cause', so *of* in *afraid of* is also related to this meaning. The preposition *for* is less frequently used with *afraid*, but it is used with emotion words such as *love, pity, sorry, care* and so on: *afraid for,* having the idea of *for* 'in place of, instead of' as in *I'm not afraid for me, but my children*, can be explained as such. These two combinations can be distinguished by the prepositions semantically influencing the meaning of the combinations. Thus, both combinations are marked as compositional in Table 8.

Lastly, the *familiar*-combinations are doubtful of whether they are compositional or not. As mentioned in WordReference Forums in 3.2 and corpus data in 3.3, the *familiar*-combinations are judged as *to+someone* and *with+something* by native speakers of English. As preposition-wise, both *to-something* and *to-someone* are very affirmative, and also *with-something* and *with-someone* are also positive. Thus, I leave these combinations behind as a conventional use by native speakers of English.

Until now, we have discussed all the combinations that presented in Table 1 and 2. To summarize all the mouthful explanations, the degree of transparency of the meanings of the prepositions is marked as something more compositional or less compositional. For convenience purposes, the abbreviations CP and

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[12] This result is based on a quick survey of four Korean college students who have been studying English for the academic purpose (for about 15 years) without going abroad more than 6 moths. I took the top 5 of unknown phrasal verbs: all four students selected *take up with* within the top 3 of the unknown phrasal verbs.
[13] The word *away* is also considered as an adverb (Dictionaries; Hall, 1982), but Landau & Jackendoff classify it as an intransitive preposition (as cited in Coventry & Garrod, 2004). Thus, this is just discussed here because the Oxford present it in the list of the *take*-phrasal verbs.
[14] In Korea, *take out* is generally used for food or drinks to *take out*, and many think that it is a combination of the meanings of "*take* the food and go *out*".
[15] The word *out* is the same as *away*: when independently used, it is an adverb, but Landau & Jackendoff also take this as a preposition (as cited in Coventry & Garrod, 2004).

NCP are used, standing for compositional preposition and non-compositional preposition. This does not mean that the combination is totally compositional or non-compositional; simple markers are simply used for the sake of learners.

Table 7: Comparison for verbs between the corpus data and syntactic/semantic analyses[16]

verbs	Oxford Dictionary prepositions	Corpus program COCA(per million)	iWeb Corpus(per million)	Syntactic/semantic info.
take	after	0.35	0.28	CP
	against	0.08	0.06	CP
	apart	0.26	0.47	CP
	away*	6.23	6.42	CP
	away from	1.21	1.56	CP
	back	2.47	1.97	CP
	down	1.96	2.88	CP
	from	1.44	1.60	CP
	in	6.47	8.59	CP
	off	9.29	7.07	CP
	on	20.43	25.94	NCP
	out	6.18	8.33	CP
	out on	0.04	0.04	NCP(adverb-preposition combination)
	over	11.61	9.07	NCP
	to	9.17	12.98	NCP
	up	9.02	13.06	NCP
	up with	0.15	0.05	NCP(adverb-preposition combination)
find	against	0.02	0.01	CP
	for	0.42	0.84	CP
	in	5.62	7.54	CP
	out	50.97	66.00	NCP
decide	against	0.12	0.10	CP
	by	0.18	0.08	CP
	in	0.49	0.30	CP
	on	2.29	4.08	NCP
surprised	at	4.27	3.75	CP
	by	5.99	4.07	CP

Table 8: Comparison for adjectives between the corpus data and syntactic/semantic analyses[17]

adjectives	Oxford Dictionary prepositions	Corpus program COCA(per million)	iWeb Corpus(per million)	Syntactic/semantic info.
afraid	of	18.78	9.40	CP
	for	0.81	0.94	CP
familiar	to	4.54	7.23	NCP
	with	16.84	15.26	NCP

5   Conclusion

This study first introduces three web-based learning methods to deal with English prepositions, and discusses some contentious issues that may occur in the web-based methods: where and why the prepositions occur with other word categories, showing a closer bound with the words? A lot of Korean student learners of English have difficulties to freely use prepositions except for very basic ones such as *in* in *in the room* and *to*

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[16] The squares indicate the most frequent combination in each combination session.
[17] The squares has the same indication as Table 7.

in *to me*. They, in particular, complain that prepositions with other word classes such as nouns, verbs, and adjectives are of the most difficult ones. As an EFL situation, the easiest access to figure this out is to use dictionaries. Since the vast spread of the Internet, online dictionaries have been so common that the student learners can more quickly get dictionary meanings of the target words and expressions. As a less-known but very powerful method, on the online platform pages, learners can discuss more sophisticated issues of the expressions. Without looking eagerly for native speakers of English around them, leaners simply upload their queries and many native speakers including language teachers all over the world leave their intuitive and trained knowledge on the platform. It becomes more popular because it is just like meeting with English speakers. The least popular but an escalating tool is corpus data programs. Learners do not actually use these tools, but can have other routes to the corpus data results, e.g., collocation dictionaries and materials invented by these tools. All of the three methods are so useful and powerful that they will never be taken down.

What this study concerns is that there is something that must be considered all the time. Syntactic and semantic analyses are somewhat traditional, but fundamental and necessary in studying closed categories like prepositions. Syntactically and semantically, the prepositions have their own functions and meanings: some prepositions often occur with various verbs and adjectives as the heads of the prepositional phrases (e.g., verb+*against*, verb+*for*, adjective+*of*, etc.); the meanings of the prepositions are projected to the phrasal verbs in some degrees (technical term is *compositional*), so it is still important to know the meanings and functions of the prepositions; and lastly, after this process, the least compositional phrasal verbs must be studied by using various web-based tools because the prepositions have lost their original meanings in the phrasal verbs. This judgment *per se* must be also based on the syntactic/semantic knowledge of the prepositions. This is also what Lindstromberg (1997) argues about prepositions: non-native speakers of English should study individual prepositions properly.

As a short pedagogical implication, after mastering the most popular prepositions (as mentioned earlier, only nine of them occupy the 90 percent of the most common use of the English prepositions), English learners can understand regular prepositional phrases, and this prior knowledge also reduces some burdens to study and memorize all prepositional combinations in every case where they occur.

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Appendix A – Concordance lines of the contexts of the combinations (KWIC)

<COCA>

<iWeb>

make-over " after some discussion , the beauty salon girls	decide	against	a butch five o'clock shadow (my face must have given
fuel economy is a bit much . I have seen customers	decide	against	a car because they found one that is .3 liters per
small . It might help you to relax . If you	decide	against	a CVS you should be able to do a diagnostic u/s
are seeking a partnership now , the health system leadership may	decide	against	a deal at the end of the year . # "
. The reservation deposit is fully refundable should you	decide	against	a purchase . # On September 15th we will start
right for you to consider a move . Even if you	decide	against	a sale or purchase , it is an honor for me
. # Attend Trade Shows and Industry Expos # If you	decide	against	a social media presence , you will have to meet potential
by a former landlord . For example , you ca n't	decide	against	a tenant applicant because their former landlord said
them the time to think things through a bit more and	decide	against	abortion . " she said . # Ms Sherlock said that
, and he could be assessing his options , should Wenger	decide	against	an extension next- term . # Arsene Wenger has guided