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Concept-Based Instruction: Imagistic and Metaphorical Understanding of Phrasal Verbs

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The current project investigated the effects of concept-based instruction (CBI) in phrasal verbs learning. CBI was carefully designed on the basis of two important principles of cognitive linguistics (CL): image-schemas and conceptual metaphors. The analysis focused on conceptual development in the participants who were graduate students registered in an ESL speaking course. Specifically, the influence of the image schema and conceptual metaphor was examined with various data sets. This study focuses on one of the datasets, verbalization tasks. They were provided as a homework assignment to familiarize participants with the new way of understanding particles and phrasal verbs and to internalize the relevant image schemas and conceptual metaphors by externalizing their understanding. The analysis showed that the metaphorical and imagistic associations that students made had a strong impact on their subsequent accounts of the meanings of the phrasal verbs. The metaphorical and imagistic performance of some students demonstrated that CBI can fundamentally impact on learner understanding of the semantics of particles and phrasal verbs.

Key words: concept-based instruction, cognitive linguistics, phrasal verb instruction, conceptual metaphors, image schema, verbalization

1. INTRODUCTION

Recently, interest in the role of explicit grammar instruction in foreign language classroom has been rekindled. The argument of so-called 'agrammatical' movement was that grammar instruction be removed from the school curriculum describing it as a useless activity (Lantolf & Thorne, 2006). However, removal of grammar instruction from FL classroom has frequently resulted in a lack of control over second language (L2) grammatical features after learners pass through formal educational programs (Harley,

Cummins, Swain & Allen, 1990; Lyster, 1999, 2004; Swain, 1997).

After witnessing negative consequences of the removal of grammar teaching, currently most researchers (Dekeyser, 1998; Dekeyser & Sokalski, 2001; Doughty, 1991; Ellis, 2001, 2002, 2006; Lantolf, 2006, 2007; Long 1983, 1988, 1991; Norris & Ortega, 2000; Terrell, 1991) agree that explicit grammar instruction can be beneficial for L2 learners, but only when properly organized. 'Properly organized' engenders two significant questions: 1) what should be taught? and 2) how should it be taught? Although these are fundamental questions to be explored, they have not received much attention from researchers with a few exceptions such as VanPatten's (1996) input processing approach.

2. REVIEW OF THE LITERATURE

2.1. Concept-Based Instruction: Materialization, Verbalization and Internalization

The current paper is an attempt to investigate possible answers to the two important questions based on the sociocultural theory (SCT) and cognitive linguistics (CL). Among the various SCT-oriented pedagogical approaches, Galperin's (1969) concept based instruction (CBI) was employed for the current project. Galperin is considered to be one of the prominent scholars who further developed Vygotsky's (1981, 1983) theory and attempted to transform the theory of human development into a model of the teaching-learning process. He elaborated Vygotsky's position of the social dimension of psychological functioning and investigated the mental actions and concepts to be learned in school. He paid special attention to the qualitative changes that school instruction has to undergo to promote learners' autonomous and independent performance in the target subject.

The first step toward self-regulated learning is to verbalize the concepts that are materialized as a form of physical objects or symbolic representations. Verbalization is important, because it is more than self-explaining. It is a means to bring concepts into consciousness by developing an ability to recontextualize the learned concepts beyond classroom activities (Lantolf & Thorne, 2006). Swain (2000) agrees that language is a cognitive tool and used the words 'verbalizing' and 'verbalization'. However, she points out that they have been misunderstood or misinterpreted as a synonym of 'speaking'. In order to encompass both speaking and writing, she began to use the word 'languaging'. Languaging refers to 'producing language, and, in particular, to producing language in an attempt to understand – to problem-solve – to make meaning' (p. 96). This discussion of languaging is particularly relevant to the current study, because in this project,

verbalization activities were conducted in written rather than spoken language.

Verbalization is expected to lead to internalization of external materials. According to Galperin (1992), internalization is about developing the ability to carry out mental action that has parallels on the material plane. Internalization enables mental planning, whether it be purely mental or symbolically assisted, and thus liberates humans from the need for direct manipulation of external objects. Through extensive and intensive use of these symbolic tools, one can internalize them, which leads to greater awareness and control of cognitive process. It is, from a Vygotskyan perspective, considered to be development (Kozulin, 1998).

As far as language learning is concerned, internalization would mean control of conceptual knowledge of the target linguistic community as well as of the linguistic code (e.g. morphosyntax, phonology, and referential meaning). This implies that the language learners become capable of communicating not just in the target language, but also through the target language (Lantolf & Thorne, 2006). Similarly, Kozulin (1998) contends that psychological tools, or internalized versions of symbolic tools result in fuller engagement in activities that require higher psychological abilities such as hypothetical reasoning, problem solving, experimentation and related abilities.

Instructors are responsible for creating the class atmosphere that can promote the internalization process. This is why materialization/visualization of abstract concepts plays a significant role in second language (L2) teaching. Galperin (1969) used the term "Scheme of a Complete Orienting Basis of an Action" (SCOBA) to refer to the complete set of conditions leading to the successful execution of an action. Specifically, L2 grammar instruction depends upon the quality of explicit knowledge provided to students and the manner the knowledge is presented (Lantolf, 2006). To find appropriate ways to materialize linguistic concepts, the current study referred to cognitive linguistics.

Cognitive linguistics is compatible at least in part with Galperin's pedagogical approach and with Vygotsky's general theory of semiotic mediation of development in that they value the quality of conceptual knowledge (Lantolf, 2006). Furthermore, as Pütz, Niemeier and Dirven (2001) stated cognitive linguistics, as usage-based language theory, is predestined to be useful for applied research areas such as language in society, language and ideology, language acquisition, FL/L2 learning and language pedagogy.

2.2. Cognitive Linguistics: Image-Schema and Conceptual Metaphors

Cognitive linguistics begins to yield meaningful results that can be suggestive for materialization of grammatical concepts. For example, Kövecses and Szabó (1996) studied idioms from a viewpoint of cognitive semantics. They distinguish three aspects of idiomatic meaning: general meaning determined by the particular 'source domains',

specific meaning provided by the 'ontological mapping' and connotative aspects of idioms. The result of this study reveals that cognitive semantic view can facilitate learning of L2 idioms. Tyler and Evans (2001) investigated polysemy networks of the English preposition, *over*. They found that the meaning of prepositions is a result of human interaction with the world, which in turn becomes abstract, imagistic conceptual representations. They attempted to apply their findings to pedagogical grammar and it looks quite promising for L2 learning.

Although researchers who identify themselves as cognitive semanticists have a diverse set of assumptions, the following are a number of principles that characterize cognitive semantics.

1. Conceptual structure is embodied.
2. Semantic structure is conceptual structure.
3. Meaning representation is encyclopedic.
4. Meaning construction is conceptualization.

(Evans & Green, 2006)

These assumptions function as guiding principles and give rise to relevant theories including image schema theory and conceptual metaphor theory. Image schema theory holds that embodied experiences are represented imagistically. The imagistic mental representation is referred to as image schemas. Langacker (2008) defined it as "schematized patterns of activity abstracted from everyday bodily experience especially pertaining to vision, space, motion, and force" (p. 32) and Johnson (1987) as "a recurring, dynamic pattern of our perceptual interactions and motor programs that gives coherence to our experience" (xix). Image-schemas are largely responsible for our understanding of the world. Without them, it is difficult to make sense of experience (Kövecses, 2006). Lakoff (1987) argues that image-schemas structure our conceptual system. That is, the conceptual system is organized by image schemas that structure physical space and these allow us to acquire most of our understanding from embodied spatial experience. It happens because spatial image schematic structure is mapped onto conceptual structure. If this is correct, we come to the conclusion that we cannot separate the mind and the body (Kövecses, 2006).

Kövecses proposed five important image-schemas: the CONTAINER schema, the PART-WHOLE schema, the LINK schema, the CENTER-PERIPHERY schema and the SOURCE-PATH-GOAL schema. They not only enable us to understand the outer world, but they also figure importantly in word meanings. They provide an alternative answer to the question of how symbols and linguistic expressions gain meaning. We rely on image-schemas in conceptualizing the world and image-schemas are established on the basis of bodily experiences. Therefore, symbols and expressions should be meaningful for us. As

Kövecses states, "Image-schemas provide an important interface between the body and the world and, at the same time, allow us to understand ourselves "through ourselves" (p. 225).

Conceptual metaphor theory was first proposed by Lakoff and Johnson (1980). It starts with the premise that metaphor is not simply a literary device, but that it is ubiquitous in everyday language. Furthermore, metaphor is not just a matter of language, but as Lakoff and Johnson argue, conceptual metaphor is "understanding and experiencing one kind of thing in terms of another" (p. 5). Conceptual metaphors are systematic with the systematicity originating from bodily experiences. That is, we find the metaphors natural, because they are motivated by embodied experience. Of the previous examples, AFFECTION IS WARMTH is fairly obvious in terms of bodily correlation. To be hugged or to be close to our beloved one is associated with the feeling of body temperature or warmth. This kind of experience occurred in the earlier period of one's life and continuously occurs throughout the whole lifespan, which accounts for the reason why conceptual metaphors are preconceptual, ubiquitous and by and large, unconscious. Lakoff and Johnson argue that seemingly purely intellectual, abstract concepts are in fact based on metaphors that have a physical basis. They go on to argue that metaphorization is so basic to our conceptual processing that it is difficult to find an alternative way to express abstract ideas.

Cognitive linguists began to apply the image-schema theory and the conceptual metaphor theories to investigate systematic conceptual motivation for the semantics of language. Especially, idioms have received special attention from CL researchers. Their overarching assumption is that idioms do not constitute a special set of linguistic items, but that they belong to a general conceptual system of human mind. In other words, seemingly arbitrary use of idiomatic expressions is based on principled, motivated mechanisms. Although semantic motivation does not refer to "semantic transparency," it has insightful pedagogical implications for language teaching (Kövecses & Szabó, 1996). The systematicity of language does not enable the learners to predict the usages of the target features, but empowers them to explain retrospectively. This requires us to rethink the teaching idioms in second or foreign language classrooms.

The current study focuses on one of the English idiomatic expressions, phrasal verbs, and attempts to implement CBI and CL in phrasal verb instruction. It also aligns itself to a series of studies of phrasal verb instruction in CL (Boers & Demecheleer, 1998; Condon, 2008; Condon & Kelly, 2002; Kurtyka, 2001; Tyler & Evans, 2004). These previous studies have demonstrated that CL instructions benefit L2 learners and that insights from cognitive linguistics provide valuable information for foreign language teaching methodology. However, theses previous studies employed a quantitative approach and could not show how the participants developed qualitatively different understandings of meanings of phrasal verbs or particles influenced by CL instruction. In order to fill this gap,

this study intends to show how CL, combined with CBI, can promote more conceptual understandings of phrasal verbs meanings which are seemingly random and unsystematic. In addition, previous research used either image-schema or conceptual metaphor.

Three questions to be investigated are as follows:

1. Is explicit instruction of English phrasal verbs beneficial for learners?
2. How do CL notions of conceptual metaphor and image-schema influence students' understanding of meanings of phrasal verbs accompanied by the particles *out* and *up*?
3. How do verbalization tasks, which are a significant procedure for systematic concept formation in CBI, promote theoretical thinking in students?

3. METHOD

The focus of the study is phrasal verbs accompanied by two particles: *out* and *up*. *Up* and *out* were chosen because of their productivity in English (Rudzka-Ostyn, 2003). Although previous research was successful in explicating systematicity in semantic motivation, the way it was presented was not learner-friendly. Boers and Lindstromberg (2006) pointed out that CL-inspired materials must be modified for learners to be adapted by the teaching community. Special jargons and intense semantic analyses commonly observed in CL could potentially inhibit learner comprehension of the concepts. For this reason the present project explored more learner-friendly presentations, including visualizations at SCOBA, without sacrificing theoretical precision.

In order to achieve the goal, the pedagogical framework to be used is organized according to Galperin's theory of CBI. Given that a key feature of this approach is the SCOBA, a SCOBA was constructed for each of the phrasal verbs selected for instructional focus. SCOBAs were expected to enable students to visualize the complex semantic networks of *out and up* to make as clear as possible the motivation behind the extended, abstract meanings of the particles.

3.1. Participants

Twenty-three graduate students participated in the study. They enrolled in an intermediate level ESL course for international teaching assistances at a North American university. In order to register for one of the course students are required to take the American English Oral Proficiency Test (AEOPT) administered by Department of Applied Linguistics immediately before the beginning of each semester. They are assigned to three

levels of ESL classes: ESL115G (beginner), ESL117G (intermediate) and ESL118G (advanced).

The rationale for choosing ESL117G for data collection is largely based on the researcher's teaching experience. From several years of teaching ESL courses for international teaching assistants, the researcher determined that despite their fluency, intermediate level students tend to sound somewhat bookish and unnatural. Since phrasal verbs are used more frequently in spoken language, the researcher believed that the current project would be helpful for improving students' oral English. Another reason for choosing this group of students concerns the curriculum. ESL118G classes prepare students for the exit exam that they must pass in order to complete the sequence of courses and to be certified to teach. Thus, its syllabus is comparatively established and fixed. However, ESL117G classes focus on general fluency and different types of classroom discourses and allows the instructor greater flexibility in topic selection. This led the researcher to choose the intermediate level classes for data collection.

Students are mainly from China, Korea and Thailand and major in math, statistics, chemistry, entomology, chemical, mechanical and civil engineering, computer science, information science and technology, forest resources, and economics and tourism. Nineteen of the participants had spent less than a year in the US at the time of the course, while one student had one-and-a-half years in residence, another had two years and a third had three years in the US. Students' names have been replaced with pseudonyms. A summary of participants' profile is shown in Appendix A.

3.2. General Procedure

Participants received a CL oriented CBI once a week for five weeks. Relevant conceptual metaphors and the SCOBAs for each particle were introduced in the earlier stage of the instruction. Then, the exemplary sentences for the SCOBAs were provided. The images and descriptors in the SCOBAs were mainly from Rudzka-Ostyn's (2003) workbook. Especially the *up* SCOBA was only slightly adapted from Rudzka-Ostyn (p. 103). The exemplary sentences were mainly taken from Rudzka-Ostyn's workbook and also from *The American Heritage Dictionary of Phrasal Verbs* (2005). Students had to engage themselves in four consecutive learning activities: collocation practice, phrasal verbs in discourse, plain verbs and phrasal verbs and timed-writing practice. 'Collocation practice' was inspired by a section of Rudzka-Ostyn's workbook and 'phrasal verbs in discourse' by McCarthy and O'Donell's (2007) self-learning material. Finally, verbalization tasks were given as a homework assignment. Verbalization tasks required students to explain meanings of phrasal verbs in sentential contexts and were expected to promote internalization of meanings of particles taught in class. Among the various

datasets collected at different stages, this paper reports the analysis of the verbalization task dataset. Here, students had to verbalize their understanding of the phrasal verb constructions. They were encouraged to refer to the SCOBAs to specify what image or images are conjured up by the particles or phrasal verbs. In case of *out*, one more question was added about conceptual metaphor. Participants were asked to identify what is conceptualized as the relevant container.

This way, students were expected to externalize their understanding of image schema and potentially conceptual metaphor, too. It does not guarantee that students take advantage of image schema and conceptual metaphor to figure out meanings of the particular phrasal verbs, because they can figure out meanings first and then try to find images that fit in their accounts. Nevertheless, it was expected to force students to use the SCOBAs more so that they can internalize the images and eventually can perform without the help of them.

TABLE 1

10 Steps for Concept-Based Instruction of Phrasal Verbs

Steps		Students' tasks
1	Pretest	The pretest consists of two parts: (1) an in-class exam that includes definition tasks and multiple choice items and (2) take-home exams that include short answer questions
2	Brainstorming	Students are encouraged to think about the meanings of the target particle in sentential contexts.
3	Introduction to the relevant conceptual metaphor	Relevant conceptual metaphors are introduced before the lessons of the individual particle.
4	Introduction to SCOBAs	The SCOBAs are introduced and explained with exemplary sentences (Appendices B and C).
5	Collocation practice	Students are provided with phrasal verbs and lists of (a) concrete and (b) figurative entities that can be used with the phrasal verbs. Students had to match them with the phrasal verbs that were provided.
6	Phrasal verbs in discourse	Students are provided with three reading passages that include a substantial amount of phrasal verbs with the target particles.
7	Plain vs. Phrasal verbs	Students are asked to identify differences or similarities between the plain and phrasal verb pairs that used the same main verb.
8	Timed-writing practice	Students are asked to create as many sentences as possible that include phrasal verbs of the target particle in a two-minute time span.
9	Verbalization Assignment	At the end of each class, a homework assignment was given to students. They were encouraged to explain (verbalize) the meanings of phrasal verbs in sentential contexts.
10	Posttest	The posttest is the same except that the new items, *in* and *down,* was added as antonymous particles.

Verbalization activity is generally carried out through spoken language, but in this study, written language was considered to be a better mode for the verbalizations for two reasons. First, it was felt that the spatial nature of particles would make it difficult for L2 learners to

explain their meanings in spoken language. The second reason concerns the students' comfort level with English. Due to the fact that English was not their first language, it would have been somewhat stressful for them to explicate the meanings of the polysemous spatial words in English. Written language was expected to be somewhat more comfortable for the learners to explain their understanding and use of particle verbs than was spoken language. Furthermore, as it was given as a homework assignment, participants did not have to rush in terms of time. Given that verbalization was considered as a significant process for learning or internalization in Galperin's term, it was important that students had sufficient time and low level of anxiety. Table 1 summarizes 10 steps of concept-based instruction conducted in this study.

4. ANALYSIS AND DISCUSSION

Since the relevant metaphors and image-schemas are different for each particle, students' verbalization data were analyzed according to the particles.

4.1. Out

The analysis focused on whether students' accounts of meanings of *out* phrasal verbs reflect understanding of the CONTAINER metaphor and how the *out* SCOBA (Appendix A) influenced students' understanding of the phrasal verbs.

In the following, it will be discussed how students' choice of different images interact with their subsequent verbal accounts and whether one or more preferred images should be focused on for instructional purposes. Sentences where students did not have a consensus will receive special attention. One of them is sentence 1 shown below.

1. She is good at *fishing* things *out*.

Table 2 shows answers given by the students who chose image #2 from the SCOBA. This group of students mostly identified (lots of, group of) things as CONTAINER and subsequently their account included words such as 'sort', 'pick', 'things', etc.

Table 3 lists student responses for image #3. Here CONTAINER ranges from water, pool, pond, sea to ignorance and invisibility. The water-related response is likely to originate from the main verb 'fish'. Although water is not physically involved, identifying water as CONTAINER should not hinder students from figuring out its metaphorical application. However, their explanation does not show evidence of such extended understanding. Dohyun and Hyejin's accounts include the words, 'fishes' and 'fish'

indicating that they took it literally. Other students did not take it literally, but failed to exactly figure out the meaning of the phrasal verbs.

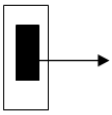
TABLE 2

Students' Account of *fish out*: With a Choice of Image #2

Participants	Image #	CONTAINER	Meaning
Lihua		n/a	Sort out
Jaeseok		Lots of things	Select something out of lots of them
Chien-Lien		Things	Find things she's looking for
Huan		Group of things	Arrange things by kind
Ning		Sets, groups of things	Sort things out
Taeho		Things	Pick something out
Jaidee		Group of things	Sort things that she needs out of thing that she doesn't need or want

TABLE 3

Students' Account of *fish out*: With a Choice of Image #3

Participants	Image #	CONTAINER	Meaning
Dohyun		Water or sea	Catering fishes
Hyejin		Pond, ocean	Take fished
Dongjoon		Water (river, sea)	Pick
Yi-Han		The pool	Attract something
Ru		Ignorance	Make something clear
Liwei		Invisible	Discover something

Interestingly, student performance was varied, depending on the item. Students are likely to have difficulty identifying the nature of the CONTAINER operating with certain phrasal verbs, whereas with others they easily identified the underlying conceptual metaphor. In the former case, student responses diverged from each other or included synonyms or dictionary-like accounts that do not reflect much evidence of the impact of CBI.

2. We could just ***make out*** a building through the trees.

This sentence seems to be somewhat difficult for students to figure out with regard to the nature of the CONTAINER. Some students conceived of the CONTAINER as a cluster of tress or buildings, while others failed to conceive of a CONTAINER of any kind. In 8, *out* is likely to indicate a shift from invisibility to visibility. Since the invisibility is physically caused by the trees, it is possible to view the trees as CONTAINER. Table 4 lists a group of students who identified building as CONTAINER with a choice of SCOBA image #4, which indicates that they understood *out* as an expansion sense. It is not clear how identifying building as CONTAINER leads them to think that *out* denotes a sense of

expansion or vice versa. Kamnan's account reflects a sense of expansion, but does not fit in the sentential context. Explanations of the other two participants, Ning and Taeho, include no elements that are related to an expansion sense. They may have not been able to find a reasonable explanation to justify their choice of the SCOBA image and identification of CONTAINER and at the same time to fit it into the context. It is also possible that they were not able to figure out the meaning of *make out* in the sentence and thus were not able to identify what CONTAINER is.

Students who identified trees as CONTAINER certainly reached a clearer understanding of the sentence (Table 5). Use of verbs such as *discern, identify*, *see* and *come out* in defining the meaning of the phrasal verb in 8 indicates that the student managed to figure out the meanings of the phrasal verb.

TABLE 4

Students' Account of *make out*: Building as CONTAINER

Participants	Image #	CONTAINER	Meaning
Kamnan		Building	Expand/increase area of the building
Ning		Building	Make
Taeho		Building	Complete

TABLE 5

Students' Account of *make out*: Trees as CONTAINER

Participants	Image #	CONTAINER	Meaning
Chien-Lien		Trees	To see with difficulty
Liwei		Trees	To discern
Cheng		Trees	Build
Jaeseok		Trees	Build
Zhian	n/a	Trees	Identify, make sth visible
Feng	n/a	Tree	See building in woods, See something
Shanyuan	n/a	The trees	See
Jisu	n/a	Tree?	Make something Make something and come out

Table 6 shows a group of students who identified ignorance or non-existence as CONTAINER. Although their identification corresponds to that of the researcher, their explanations do not seem to take advantage of such metaphoric understanding. Ru tried to apply CONTAINER to his explanation, but was not so successful. It seems like he is confusing the meaning with "make up." Jaidee's explanation was the most successful attempt. She understood the concept of shift from invisibility/inexistence to visibility/existence.

TABLE 6

Students' Account of *make out*: Non-Existence as CONTAINER

Participants	Image #	CONTAINER	Meaning
Dohyun		Ignorance	Estimate the size of something
Jin-Hua		Non-existence	Let something totally organized
Ru		Non-existence	Set up from non-existing
Jaidee		unexistence	Bring to exist, presence

Sentence 3 is another example where the participants had difficulty figuring out CONTAINER and did not reach clear understanding of the phrasal verb.

3. Our food ***held out*** during the blizzard.

Here, the particle *out* is likely to concern a span of time rather than the food itself or to the place where it is stored. Students who chose #3 (Table 7) or a sense of outward movement failed to reach proper understanding, while those who selected image #4 (Table 8) succeeded in figuring out meaning of 'hold out'. Students' choice of SCOBA images seems to be related to their identification of CONTAINER, too. Out of 6 students who chose #3, one student (Lihua) identified food as container and three students (Cheng, Ning and Kamnan) identified food storage as container. Among the students who chose #4, Dohyun and Jaeseok also identified food and food storage as container, respectively. What differs from the previous group is that three students managed to figure out that duration time is CONTAINER in this sentence.

Although they might be closely interrelated, it is not clear which of the two, images and CONATINER, comes to the learners' mind first and if the former summons the latter or vice versa. Furthermore, it is not clear, either, whether they benefit students' understanding of phrasal verbs, since it could be that their understanding allows them to select the proper image and to identify CONTAINER. Given that the image and metaphor oriented instruction of phrasal verbs are new to participants, it is possible that they automatically figured out the meanings of the phrasal verbs first and then went back to the image and metaphor part. However, regardless of their temporal sequence and cause-effect relationship, this practice can be meaningful and beneficial to students in that it can familiarize students to imagistic and metaphoric thinking.

This particular instance seems to show that SCOBA images play a significant role in phrasal verb learning, since the SCOBA images they choose influenced their subsequent understanding and explanation of the phrasal verbs.[1] As explained before, distinction

[1] It is possible that their understanding allowed them to select the proper image. Students could work with previous knowledge and then choose the SCOBA images.

between the images are sometimes of little importance, but under certain circumstances, it functions as a decisive factor for proper or improper understanding.

TABLE 7

Students' Account of *hold out*: With the Choice of Image #3

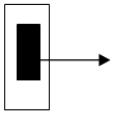
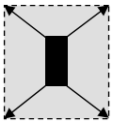
Participants	Image #	CONTAINER	Meaning
Lihua		Food	Use up
Liwei		To continue	To exist
Cheng		Our house	Deliver out
Ning		The place where the food was stored	Gone
Kamnan		Food storage	Scatter
Hyejin		?	Remains

TABLE 8

Students' Account of *hold out*: With the Choice of Image #4

Participants	Image #	CONTAINER	Meaning
Dohyun		Time or freshness	Be retained
Jin-Hua		Food	Maintain/keep
Jaeseok		Food storage	Continue, last
Chien-Lien		n/a	Continue to be in supply
Huan		Time period	Enough until the last
Jaidee		Duration of food before it expires	Remain, last

4.2. Up

The *up* SCOBA (Appendix B) includes five distinctive senses and corresponding images. Number 1 is the primary sense from which the other four are derived. Similar to the particle, *out*, their interrelatedness is fairly obvious. Except for number 2, all the images implicate upward movement although they emphasize different aspects of such movement. Even the second image can be viewed having a close relation to the other images, especially with regard to image #4. They would look quite similar if either of them is rotated 90 degrees. Thus, it seems quite natural that *up* exhibits a complex pattern in terms of students' choice of SCOBA images. There were items in which a large majority of the students agreed, while for the remaining items, they showed greater divergence in their selection. Special attention was paid to the latter items. Sentence 4, for example, elicited five different answers. Some meaningful examples are shown in Table 9.

4. At the sergeant's command, the troops ***formed up*** into a single line.

What the researcher had in mind for the "form up" in this particular sentence was image #3 that emphasizes an increase in visibility and accessibility. Students answers diverged

TABLE 9

Students' Account of *form up* (Images # 1, 2, 3, 4 and 5 in a Downward Direction)

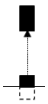
Participants	Image #	Meaning
Guowei		From chaos to order
Dongjoon		The goal is a single line.
Cheng		Reaching the end of the forming
Liwei		The troops move to make a line of their positions.
Jia		After the command, the troop in a single line become more visible or orderly
Kamnan		The row of the troops is formed into a single line, before that, it's not a line.
Yi-Han		To be more visible
Feng		After formed, the line became visible.
Jaeseok		Make a single line perfectly.
Dohyun		Make something to be perfect form
Huan		All the troops form a single line
Ning		Complete covery

TABLE 10

Students' Account of *shape up* (Images # 1, 2, 3, 4, and 5 in a Downward Direction)

Participants	Image#	Meaning
Guowei		From chaos to order
Dongjoon		The goal is a single line.
Cheng		Reaching the end of the forming
Liwei		The troops move to make a line of their positions.
Jia		After the command, the troop in a single line become more visible or orderly
Kamnan		The row of the troops is formed into a single line, before that, it's not a line.
Yi-Han		To be more visible
Feng		After formed, the line became visible.
Jaeseok		Make a single line perfectly.
Dohyun		Make something to be perfect form
Huan		All the troops form a single line
Ning		Complete covery

into across five different images and interestingly their explanations reflect the different image schemas they selected. For instance, Guowei's choice of #1 well matches his verbal account "from chaos to order". Here, the conceptual metaphor, UP IS GOOD, seems to be working, because he the student associates upward movement with the increase of orderliness. Dongjoon, Cheng and Liwei chose #2 assuming that "a single line" is the goal to be reached. Participants who chose #3, as expected, emphasized visibility and

accessibility. As we saw in table 6-9, #2 and #3 were chosen by 6 students each and the accounts provided by the two groups of students are likely to be acceptable. Jaeseok chose #4 and his explanation includes the word "perfectly" reflecting his awareness of the completion sense of *up*. Finally, the answers of the #5 group include words that are related to "covering", e.g. all, covery, perfect, etc.

What should receive attention is the fact that students' choice is a result of reasonable and conceptual understanding whether it corresponds to dictionary definitions or to the researcher's expectations. This pattern was more frequently observed in the *up* phrasal verbs than in the other phrasal verbs. Sentence 5 is another example (Table 10).

5. I'm glad that your project is ***shaping up*** so nicely.

Ru chose image #1and associated upward movement to getting better. Explanations of the #3 group commonly include words such as 'visible', 'possible', 'accessible', 'known' and 'real', indicating that they associate upward movement to an increase in visibility and accessibility. Dohyun who chose #4 used the word 'best' reflecting the imagistic representation of reaching the limit. Yi-Han who chose # 5 emphasized a sense of completion. Item #5 is usually associated with a covering sense, but it is not completely unrelated to a sense of completion since its implication is 'complete covering'. Therefore, Yi-Han's account should not be regarded to be entirely inappropriate.

4.3. An individual student's performance: Jaidee

This subsection considers the responses of an individual learner whose accounts contain rich metaphoric and imagistic elements, revealing in dramatic fashion the effects of CBI on how students think about and externalize their knowledge of a concept.

TABLE 11

Jaidee's Account of the *out* Phrasal Verbs

	Image#	Container	Meaning
2. She is good at *fishing* things *out*.		Group of things	Sort things that she needs out of thing that she doesn't need or wants
5. *Count* me *out*, I'm afraid: I won't be able to come to your party.		Group of guests	Remove his/her name from the list of guest who would come party
1. She looks *worn out*, doesn't she?		Cloth = her body	This symbolize she as a cloth. Worn out cloth is like old cloth with pale color. So she should very tired, lack of energy.
7. Nobody knows how the secret *leaked out*.		secret keeper	To be known by other people This symbolize secret as liquid or gas in container Gas/water leak out of container is like secret leak out from the keepers.

Jaidee presented explanations that are not only elaborate, but quite metaphorical (Table 11). She seems to have developed a clear understanding of the metaphorical properties of phrasal particles and is able to think through it. Her explanations of *worn out* and *leaked out* is especially impressive in that she is explicitly using metaphor-related terms such as 'symbolize' and 'container', although they may not be entirely appropriate and correct.

4.3.1. The implications of the student performance

During the course of analysis, it became clearer that even seemingly inappropriate explanations are nevertheless based on conceptual reasoning and thus, should not be entirely overlooked as an indication of non-development. Certainly there were cases where their understanding or reasoning was completely unacceptable, but in many cases students' answers included elements that are acceptable to some extent, and in most cases they reasoned to a conclusion rather instead of making a random guess. They were thinking conceptually about the meaning of the phrasal verbs.

Another important finding is that explicit instruction, when properly organized and implemented, could promote theoretical thinking in students. Some participants, if not all, have developed awareness that particles have substantial meanings and semantic contributions to phrasal verbs. Their accounts frequently included words (e.g. completely, thoroughly, perfectly, all, control, excess, limit, etc.) which specify meanings of phrasal verbs and they often reflect, represent or even correspond to what was described in the SCOBAs. On the other hand, some words (e.g. accessible, visible, better, increase, etc.) show that conceptual metaphor played a significant role in understanding the phrasal verbs. Although it is true that a trace of development was observed in many students, it should be noted that the purpose of this particular activity was not to test students' development, but to provide an opportunity for practice by pushing them to verbalize their understanding. The fact that they began to notice semantic contribution of particles and tried to attempt to provide verbal accounts in written form can certainly be regarded as a major gain of this practice.

However, it should be noted that although many students mentioned in the exit interview that the provided images were helpful, no one explicitly pointed out the role of conceptual metaphor in phrasal verb learning. It seemed that conceptual metaphor was more abstract and less salient for most students. Alternatively, metaphorical thinking is so prevalent and universal (Lakoff & Johnson, 1980; Parprotté & Dirven, 1985; Tyler, 2012) that it is hard for students to recognize it unless it is overemphasized by the instructor. For this reason, not many students thought conceptual metaphor played an important role in understanding semantics of phrasal verbs. For this reason, it was surprising that Jaidee explicitly referred to words such as 'symbolize, symbol and metaphor'.

Finally, individual differences were quite dramatic and consistent throughout the practice. Some participants refused to identify the SCOBA images or kept providing synonyms or short answers that did not exhibit any trace of conceptual development. This may be attributable not only to individuals' learning style, but also to the nature of the practice. As explained before, it was given to students as a homework assignment. Unlike in-class activities or face-to-face oral practices, take-home activities may not force students fully to do their best, although it has advantages in that it can provide enough time and create less stressful conditions for students.

5. CONCLUSION

This paper analyzed students' verbalization practice. In this practice, students were encouraged or even pushed to refer to the SCOBAs when explaining meanings of the phrasal verbs provided. This procedure was expected to enhance conceptual understanding of the particles and to create an opportunity to externalize that understanding. As discussed above, students were able to take advantage of the image-schema and related conceptual metaphors, although they were sometimes confused and misguided.

It is undeniable that some students' explanations failed to include any reflection of conceptual metaphor or image schema, but consisted of a mere repetition of what they already knew. A list of synonyms or dictionary-like accounts may be another indication that the participants were not entirely successful in taking advantage of conceptual metaphors and image schemas. Even though the goal of the assignment was to elicit a detailed written explanation of their understanding of phrasal verb constructions, most of the explanations were not as detailed as had been expected. This may be attributable to the fact that the participants were not familiar with verbalizing practice and that the spatial nature of particles made it more difficult for the learners to explain the relevant meanings regardless of modality of the explanation.

Some students also pointed out that explaining meanings of the particles in English was not so easy for them. Although the participants were fairly advanced in terms of proficiency, they had difficulty unpacking the meanings of *out* and *up* in English. The spatial nature of them may have worsened the situation. This explains why imagistic explanation might have been more amenable to explanation, as some students clearly demonstrated. Since the verbalization task was designed to promote internalization of scientific concepts, it is possible that L2 verbalization was not fully functional. Thus, the future study may investigate the effects of L1 verbalization and compares them to those of L2 verbalization.

Another suggestion for future research concerns the mode of verbalization. In this

project, verbalization was conducted in written tasks due to the time limit and the nature of the target items, while previous CBI studies employed spoken language as a means of verbalization. Although Galperin (1969) did not specify modality for verbalization activities and written language is also a powerful means for verbalization, the effects could be different. It will be worth investigating whether student performance will differ according to the modality. Moreover, if oral verbalization is to be compared to written verbalization, gestures surely must be part of the analysis.

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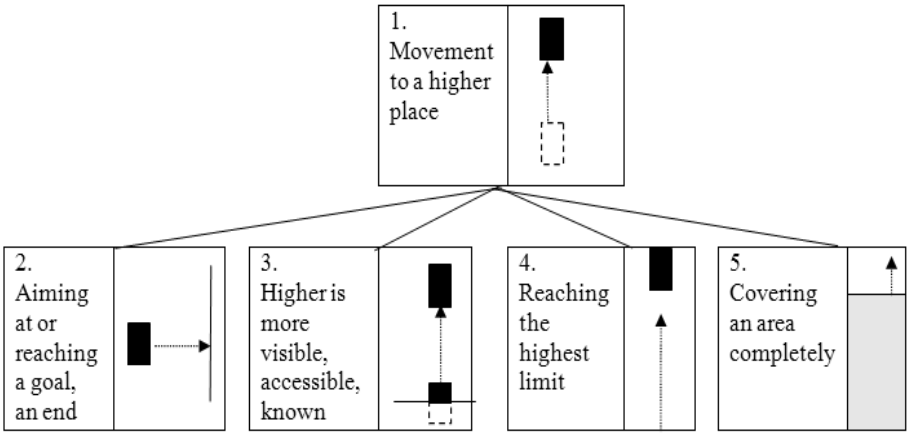
APPENDIX A

A Summary of Students' Profile

Name	Nationality	L1	Field of Study	Degree	Years in the US
Jianguo	China	Chinese	Economics	PhD	1.5 years
Hyejin	Korea	Korean	Biochemistry & Microbiology	PhD	3 years
Kamnan	Thailand	Thai	Structural Engineering	PhD	5 months
Dohyun	Korea	Korean	Chemical Engineering	PhD	5 months
Zhian	China	Chinese	Biochemistry and Molecular Biology	PhD	6 months
Jin-hua	Taiwan	Chinese	Recreation, Park and Tourism Management	PhD	6 months
Jisu	Korea	Korean	Chemistry	PhD	5 months
Ning	China	Chinese	Chemical Engineering	MA	N/A
Taeho	Korea	Korean	Chemical Engineering	PhD	5 months
Jaidee	Thailand	Thai	Ecology	PhD	5 months
Seungho	Korea	Korean	Entomology	PhD	2 years
Feng	China	Chinese	Forest Resources	PhD	5 months
Ru	China	Chinese	Biomechanics	PhD	6 months
Liwei	China	Chinese	Engineering Science Mechanics	PhD	5 months
Jia	China	China	Information Science and Technology	PhD	6 months
Lihua	China	Chinese	Meteorology	PhD	6 months
Huan	China	Chinese	Meteorology	PhD	6 months
Dongjoon	Korea	Korean	Statistics	PhD	6 months
Yi-han	Taiwan	Chinese	Statistics	PhD	6 months
Chien-lien	Taiwan	Chinese	Mechanical Engineering	MA	6 months
Guowei	China	Chinese	Engineering Science and Mechanics	PhD	6 months
Cheng	China	Chinese	Computer Science	PhD	6 months
Shanyuan	China	Chinese	Math	PhD	6 months

APPENDIX B

The SCOBA for *Up* and the Exemplary sentences



1. Movement from a lower to a higher place (depicted in 1 in the *up* SCOBA)
   a. Could you go up and see whether the baby is asleep?
   b. He rolled up the sleeves of his shirt.
2. Reference to reaching the goal, the end (depicted in 2 in the *up* SCOBA)

- *Up* does not only denote spatial upward motion; in some cases, it indicates motion towards the goal or the limit of the motion. It is often expanded to situations, habits, emotional states and the like where the 'moving entity' also reaches its boundaries or limits.
  a. At the sight of the stranger the children ran up to their mother.
  b. A good start is fine, but now you have to follow up your initiative.

3. Indication of visibility/accessibility (depicted in 3 in the *up* SCOBA)

- When the entity is at or comes to a higher level or location, it is noticed more easily. This is true both for physical and forabstract entities. Therefore, verbs with *up* denote that what was hidden or unknown becomes visible or known.
  a. After the dress was made, the flaw in the fabric showed up and she had to discard the dress.
  b. His position on the budget was never brought up until the final day.

4. Reference to reaching the highest limit, often suggesting completion (depicted in 4 in the *up* SCOBA)

- *Up* expresses arrival at the very top, the highest point along a vertical path, or at the boundary of the given location. The notion of top or boundary can be metaphorically extended to any abstract limit.

a. It has been so hot that the pond has dried up.
b. The gang of hooligans beat up the innocent bystander.

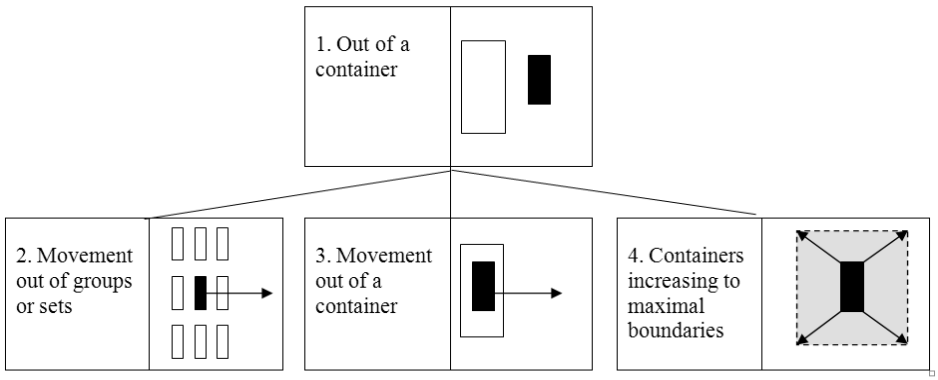
5. Reference to complete covering (depicted in 5 in the *up* SCOBA)

- *Up* indicates not only that an abstract boundary or limit has been reached but also that a whole object has been affected by an action

a. Cut up all of the meat.
b. We all think the government is trying to cover up the scandal.

APPENDIX C

The SCOBA for *Out* and the Exemplary sentences



1. Prototypical meaning (depicted in 1 in the *out* SCOBA)

a. The child's shoulders were out, so his mother pulled the blanket up.
b. The secret is out.

2. SETS, GROUPS ARE CONTAINERS (depicted in 2 in the *out* SCOBA)

- Sets/groups of objects or of people are viewed as containers inside of which there are members or elements. In some cases members can be rearranged or given a new position. In others, the member does not remain inside the set or group but moves out (of it).

a. Count me out, I'm afraid; I won't be able to come to the party.
b. Cross out the word that does not fit in each series.

3. Entities moving out of containers (depicted in 3 in the *out* SCOBA)

3.1 PHYSICAL ENTTITIES ARE CONTAINERS

- Physical objects such as a building, a room, a car, a cup, a pot, a nest, a hole, a shell, a

tunnel, an outer cover, a field or any other enclosed area can be viewed as containers. In addition, substances such as water, wood, or rock can be conceptualized as containers.

a. The accident happened as he jumped out of the train while it was still moving.
b. He sprang out of bed when the alarm clock rang.

3.2 HOME IS A CONTAINER

- The groups we are members of, our professional jobs are viewed as containers in(side) which we spend a lot of time.

a. I might eat out with you tonight, but unfortunately I can't.
b. I would like to ask you out to lunch.

3.3 BODIES, MINDS, MOUTHS ARE CONTAINERS

- In Western cultures, a person's body or his mind can be seen as a container, and one's feelings, thought, ideas as entities which fill the container. Expressing one's feelings verbally is very much like *taking money out of one's pocket*. In both cases, the moving object which is inside the container (one's pocket, one's mind) moves out of it.

a. He held out his hand to greet us.
b. He was so moved he could barely stammer out a few words of thanks.

3.4 EXISTNECE/KNOWLEDGE/VISIBILITY ARE CONTAINERS

- State of existence, work, duty, knowledge, consciousness or awareness, possession, accessibility, visibility, etc. are seen as containers or entities with boundaries.

a. She managed to talk him out of this stupid project.
b. It is high time the two parties hammered out their differences and made peace.

3.5 NON-EXISTENCE/IGNORANCE/INVISIBILITY ARE CONTAINERS

- Interestingly, the states of non-existence, being unknown, invisible/silent, etc. can also be conceptualized as containers. With *out,* the state of non-existence, ignorance, invisibility and silence comes into existence, becomes known, becomes visible, and becomes to be heard, respectively.

a. I wonder how he figured out the content of the letter.
b. The trip turned out to be a disaster.

4 Containers increasing to maximal boundaries (depicted in 4 in the *out* SCOBA)

- Concrete objects (as in 'a') with a minimal shape when not in use (a map is folded, nets are rolled up) expand to their maximal shape when used with *out*. The same can be done with abstract or figurative verbs + *out* (as in 'b) relating to time periods and intrinsic physical properties with a potential for stretching.

a. Please spread out the map on the table, it'll make it easier to find the place.
b. He was lucky: he sat out World War II in America.

Applicable levels: Tertiary

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