

On the Contribution of Argument Structure Constructions to Sentence Meaning for Korean Learners of English*

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This paper replicates the sorting task conducted on Bencini and Goldberg (2000) to examine whether Korean learners of English only concentrate on the meaning of verbs or they also pay attention to constructional meanings in English sentence processing. The results were broadly consistent with the original study — Korean learners of English were able to recognize the existence of English argument structure constructions and utilize the configurations in sentence interpretation. However, the experiment detected discrepancy in learners' understanding constructions according to the types. Language learners generally have a sense of English argument structure constructions and try to make full use of the representations, but their cognitive ability has not been sufficiently trained to access the internal relation among the constructions. Consequently, the learners feel difficulty in interpreting other types of argument structure constructions except transitive constructions and they tend to stick to the representations. Constructionists regard argument structure constructions as impetus and facilitator in language acquisition. Based on the perspective, the materials and the instructions provided to language learners need to be developed in a way that promotes the learners' access to the characteristics of English argument structure constructions.

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I. INTRODUCTION

What types of linguistic devices do people commonly use to understand the meaning of sentences? According to Bencini and Goldberg (2000), most linguistic theories and psycholinguistic models of sentence comprehension assumed that the main determinant of sentence meaning was the verb. They claimed, however, that this view could not be totally sufficient. They conducted an experiment using the sorting paradigm on Healy and Miller (1970), verifying the fact that it is the constructional meaning that has a critical impact on sentence interpretation. The study provided "a sufficiency proof that types of complement configurations play a crucial role in sentence interpretation, independent of the contribution of the main verb." (Bencini & Goldberg, 2000, p. 649)

The experiment has been replicated by many researchers including Liang (2002), Martínez Vázquez (2004), and Gries and Wulff (2005) to canvass the role of English argument structure constructions on sentence interpretation of EFL learners. Most of the results showed general consistency in terms of dependency on constructional meaning rather than the verb meaning alone; nevertheless, several remarkable discrepancies were also found in terms of recognition on argument structure constructions, influence of L1, learners' language competence, or the like (the details will be dealt with in section 2). Then, the question arises how Korean learners of English recognize and take advantage of the sentence configurations in English sentence processing.

This paper replicates the sorting task conducted on Bencini and Goldberg (2000) to examine whether Korean learners of English only concentrate on the meaning of verbs or they also pay attention to constructional meanings in processing English sentences. Studies on the acquisition of specific constructions have been vigorously carried out (Childers & Tomasello, 2001; Dodson & Tomasello, 1998; Joo, 2003; McDonough & Kim, 2009; Ninio, 1999; Oh, 2006; Sethuraman & Goodman, 2004; Year & Gordon, 2009); however, little research has been dealt with in view of the acquisition process and the consequences of a bunch of related constructions, particularly aimed at (adult) Korean learners of English. Goldberg (2006) states that English relies more on constructional meanings than other languages do. It implies that knowledge on constructions should be fully contemplated when it comes to English comprehension and production. Thus, it is meaningful work to investigate Korean learners' recognition on English constructional meanings and their reliance on knowledge of the sentence configurations. Furthermore, it is expected to confirm the unignorable contribution of constructional meanings to sentence interpretation and processing in EFL situation, yielding a more desirable and powerful approach to language learning and teaching.

II. LITERATURE REVIEW

1. English Argument Structure Constructions

According to Goldberg (1995), constructions are defined as "form-meaning correspondences that exist independently of particular verbs" (p. 1). A massive amount of literature well-documented the nature and the characteristics of constructions (Bencini & Goldberg, 2000; Boyd & Goldberg, 2009; Ellis, 2002; Ellis & Ferreira-junior, 2009; Goldberg, 1995, 1999, 2003, 2006; Goldberg, Casenhiser, & Sethuraman, 2004; Schulze & Penner, 2008; Sethuraman, 2002; Tomasello, 2000, 2003), and some major findings are as follows: Constructions have their own meanings, independent of the verbs in those configurations; constructions are contained in a lexicon, forming structured inventories of speaker's (grammatical) knowledge; constructions are generally accepted as a convention in a speech community; and constructions are symbolic in that they blend morphological, syntactic, and lexical form with semantic, pragmatic, and discourse functions associated with them.

TABLE 1
English Argument Structure Constructions

Type	Example	Abstract form	Meaning
Intransitive	The sun disappeared.	Subject Verb	X acts
Transitive	Ryu loves him.	Subject Verb Object	X acts on Y
Ditransitive	He faxed him a letter.	Subject Verb Object1 Object2	X causes Y to receive Z
Caused-motion	She sneezed the foam off the cappuccino.	Subject Verb Object PrepositionalPhrase	X causes Y to move to Z
Resultative	She talked herself blue in the face.	Subject Verb Object ResultPhrase	X causes Y to become Z
Intransitive-motion	The motorcycle roared down the street.	Subject Verb PrepositionalPhrase	X moves to Y
Intransitive-resultative	His face turned red.	Subject Verb ResultPhrase	X becomes Y

Among constructions, there is a group of form-meaning-function mixtures to "provide the means of expressing simple propositions in a language" (Goldberg, Casenhiser, & White, 2007, p. 74). It is referred to as argument structure constructions¹ (hereafter ASCs,

¹ In this paper, the term 'sentence patterns' is distinguished from the term 'ASCs'. The former only means syntactic properties of the sentences (i.e., surface forms); the latter follows from the constructionists' side, which means a set of form-meaning-function mixtures encoding the basic experience of human.

see Table 1²). Sethuraman (2002) states that the meanings related to argument structures are directly connected to the ASCs, not entirely to individual verbs. The concept of the ASCs is widely accepted in the field of cognitive linguistics as a highly explanatory theoretical construct (Eddington & Francisco, in press). Particularly in the field of language acquisition, it seems that the ASCs function as a starting point and a facilitator in that their central senses are linked to basic experience of human (Goldberg, 1995, 2006; Shin, 2009). Those aspects can be utilized as a tool to make learners' access to language system much easier and suitably motivate language acquisition.

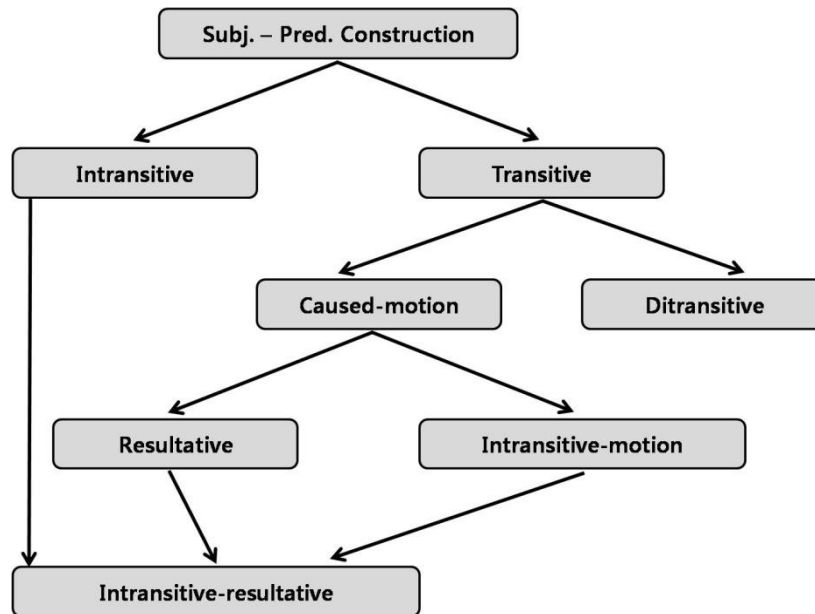
Moreover, Goldberg (1995) further depicts the general relations among English ASCs (see Figure 1³). Based on the diagram, it is inferred that hierarchy among the ASCs exist. For example, intransitive and transitive constructions mark upper layer of the chart compared to the other ASCs, which means that they are simpler in terms of forms and implied meanings. In particular, simple transitive constructions are said to be the most productive representations on the research of child language acquisition because of their fundamental relationship of human behavior (i.e., transitivity) (Akhtar & Tomasello, 1997; Dodson & Tomasello, 1998; Olguin & Tomasello, 1993; Tomasello & Brooks, 1998). Resultative constructions, on the other hand, are regarded as a derivation of caused-motion constructions: the surface structure of resultative constructions is similar to that of caused-motion constructions, and the meaning of resultative constructions emerges from the transition (or movement) of abstract concept (i.e., result) from X to Y.

Information such as word order facts, case-marking properties, links syntactic-semantic relations, and other linguistic features can indeed be inherited from the high node constructions into dominated ones (Goldberg, 1995). Interestingly, Sethuraman (2002) found a certain relationship among the ASCs in her study on child language acquisition, emphasizing the developmental hierarchy and gradual progression in learning constructions. In that sense, it is probable predictions that the degree to which the participants understand constructions will differ in accordance with the type of the ASCs, and that these constructions learned earlier will help language learners acquire more complex patterns to a great extent.

² The terms, the examples, the abstract forms, and the meanings of each ASC were borrowed and adapted from Goldberg (1995).

³ The diagram was adapted from Goldberg (1995).

FIGURE 1
The General Relations among English ASCs



2. Previous Studies on the Sorting Task in EFL Settings

As mentioned before in section 1, there are many supportive EFL-based replications using the sorting task in Bencini and Goldberg (2000). Among the studies, three representative experiments are introduced. First of all, Liang (2002) conducted the research with Chinese learners of English to observe if they comprehend sentences by verb-centered approach or construction-based approach. The learners were categorized as three groups according to their English proficiency levels. The procedure of the study was composed of two parts. One was the sorting task closely modeled in the research of Bencini and Goldberg (2000), and the other adopted the think-aloud protocol to get the process-oriented quality on how the participants did their sorting task. The results prove that participants produce more construction-based sorts as their proficiency level goes up. Her study also suggests that language proficiency plays quite an important role for language learners to rely on the meaning of verbs or constructions to sentence comprehension (personal conversation with Liang (July 1, 2009)).

Martínez Vázquez (2004) aimed to find out how Spanish learners of English sorted sentences in terms of their meanings. Sixteen participants were firstly asked to translate the English sentences to maintain focus on their meanings, and then sort them into four piles. The results of the experiment show that Spanish learners of English recognize the

constructional meaning of English sentences. The interesting point is that inconsistencies exist in the comprehension of the constructions. For example, the resultative and the caused-motion constructions were explained as "constructions that were not redundant with the verb meaning and which did not have an equivalent in Spanish" (Martínez Vázquez, 2008, p. 46).

Gries and Wulff (2005) replicated the same kind of sorting task to twenty-two German learners of English. They hypothesized that, if they produced construction-based sortings on the test, "this would constitute a strong additional evidence for the kind of semantic representation required for 'having constructions'" (p. 191). The study proves a strong tendency toward a construction-based sorting. In addition, the degree of the participants' relying on the constructional meanings is observed to be higher than the degree of English native speakers' is Bencini and Goldberg (2000). They conclude that the participants depend more on the ASCs and corresponding semantics than just on the lexical similarity (i.e., the form and the meaning of the verbs) in sentence interpretation.

The three experiments commonly report that language learners in EFL situations recognize and make use of constructional meanings of the sentences as much as verbs alone in order to process English sentences. There exist variables, though, such as learner level, language differences between mother tongue and target language, and the like. The studies also show the discrepancy of the degree of recognition among the ASCs. Based on the observations, it is positively assumed that Korean learners of English distinguish the semantics of sentence representations and make use of them as much as the meanings from the verbs. It is also predicted that the learners show discrepancy in understanding each type of the ASCs.

III. METHOD

1. Participants & Stimuli

Eleven male participants took part in this study. Their age ranged from 21 to 23. All of them were freshmen or sophomore university students. None of them learned about or even heard of linguistic jargons such as constructions or argument structures. English proficiency of the participants varied from the first to fifth grade in CSAT (the College Scholastic Aptitude Test) English.⁴ All the participants asserted that they had no experience of travelling, living or studying English speaking countries. The details are in Table 2.

TABLE 2
Participants

Code ⁵	Age	Educational background (major / grade)	CSAT English grade / score	Other tests
A	22	university student (law / sophomore)	4 / 71	250 (TOEIC)
B	22	university student (engineering / sophomore)	3 / 86	None
C	22	university student (administration / sophomore)	3 / 84	None
D	22	university student (hotel tourism / freshmen)	5 / not sure	None
E	22	university student (law / sophomore)	4 / 73	700 (TOEIC)
F	22	student at junior college (cosmetics / freshmen)	3 / not sure	None
G	23	university student (economy / sophomore)	1 / 95	None
H	21	university student (administration / freshmen)	1 / 100	730 (TOEIC)
I	23	university student (sports administration / sophomore)	4 / 82	321 (TOEIC)
J	23	university student (education / sophomore)	2 / 93	None
K	22	student at junior college (architecture / freshmen)	None	None

The participants were given the same sixteen-sentence stimuli as those in Bencini and Goldberg (2000) by crossing four verbs (THROW, GET, SLICE, and TAKE) and four ASCs (ditransitive, caused-motion, resultative, and transitive constructions). Table 3 illustrates the sentence stimuli used in this experiment. When the participants had

⁴ The researcher chose CSAT English grade and score as reliable tools of the participants' present language proficiency. CSAT, a standardized national examination managed by Korea Institute of Curriculum and Examination (KICE), is generally taken by high-school students who seek higher education and is regarded as an important requirement when applying for the universities. CSAT English score is also likely to be linked to English achievement of college students (Son, 2004). Most importantly, not all the participants obtained other well-known reputable English tests results (e.g., TOEIC, TEPS, TOEFL, etc.). Therefore, CSAT English grade and score were seen as the most standardized means for estimating the participants' language competence.

⁵ The participants were randomly coded as alphabets for the purpose of anonymity.

difficulty grasping the meaning of a word, the researcher gave them clues to guess the meaning; however, the meaning of the verbs and the ASCs were never mentioned in order not to influence the participants' performances.

TABLE 3
Sentences Used

Verb	Constructions			
	Transitive	Ditransitive	Caused-motion	Resultative
THROW	Anita threw the hammer.	Chris threw Linda the pencil.	Pat threw the keys onto the roof.	Lyn threw the box apart.
GET	Michelle got the book.	Beth got Liz an invitation.	Laura got the ball into the net.	Dana got the mattress inflated.
SLICE	Barbara sliced the bread.	Jennifer sliced Terry an apple.	Meg sliced the ham onto the plate.	Nancy sliced the tire open.
TAKE	Audrey took the watch.	Paula took Sue a message.	Kim took the rose into the house.	Rachel took the wall down.

2. Procedure

The participants were tested individually for around 30 minutes. Before starting the sorting task, the researcher (i.e., the writer) explained to the participants the point that this survey was intended to investigate how the participants process sentences in accordance with their meanings. The researcher also emphasized that there was no right or wrong answer. Firstly they were asked to translate the sixteen English sentences into Korean ones to maintain their focus on the sentence meaning. They were then instructed to sort the sentences into four piles. When they finished sorting the sentences, they were finally asked to describe how they performed the work, what rationale they had during the task, and what they thought about the common characteristics of each pile. For further analyses, the participants' translation papers were submitted to the researcher and the conversation between the researcher and the participants were recorded.⁶

⁶ An anonymous reviewer commented that the research design forced the participants to collect sentences in accordance with the ASCs, resulting in skewedness of their responses. There is little possibility, however, that the participants produced biased results. The researcher clearly explained to the participants that the experiment was about their process on sentence meaning—not constructional meaning (the term 'sentence meaning' is not equal to 'constructional meaning'). The researcher did not give any clue about the ASCs and verbs; what the researcher did was explain the test, watch the participants' behavior, ask them how they performed the task, and record the conversation. Thus, it is hard to say that the experimental design impelled the participants to create biased piles.

3. The Concept of Vdev & Cdev

In order to analyze the data statistically, the concepts of verb deviation score (Vdev) and construction deviation score (Cdev) were borrowed from Bencini and Goldberg (2000). According to them, Vdev was computed by counting the number of changes that would have to be made for a sort to be completely constructed by verb; Cdev was calculated by counting the number of changes that would have to be made for a sort to be completely formulated by construction (Bencini & Goldberg, 2000). To illustrate, if a participant produced a pile as in Table 4, this sort would get a score of 2 Vdev and 1 Cdev because the maximum number of changes to make a completely verb-based sort was 2 and the maximum number of changes to make a completely construction-based sort was simply 1.

TABLE 4
Examples of Vdev and Cdev

Sorting		Score
Dana got the mattress inflated	Barbara sliced the bread.	Vdev: 2
Nancy sliced the tire open	Lyn threw the box apart.	Cdev: 1

IV. RESULT

Of eleven participants, two sorted entirely by verb (18%), four sorted entirely by construction (36%), and five performed mixed sorts (46%). According to quantitative analyses in Table 5, the mean difference between Vdev and Cdev was quite huge. Moreover, the mean score of Cdev was much lower than that of Vdev. It demonstrates that the participants were engaged in the sortings more by construction-centered performance than by verb-centered behavior. In addition, one-sample t-test proved significance of the difference between the two sorting paradigms. In all, the results indicate that the participants generally produce more construction-based sorts rather than verb-based sorts. The results also support the idea that the participants are more influenced by shared constructions than shared verbs in sentence interpretation.⁷

TABLE 5
The result of Vdev and Cdev

	Mean	Std. dev.	t	df	Sig. (2-tailed)
Vdev	8.09	4.527	2.397	10	.038*
Cdev	4.82	4.834			

There could be a possibility, though, that the participants did not sort a bunch of sentences following our intentions, or they might not have proper rationale to classify the stimuli such as just by their surface structures without paying attention to their meanings. The last but most important point is that the number of the participants might not be enough to bring us reliable quantitative results. In order to deal with the possible restrictions and unveil hidden aspects of the results, in-depth qualitative analyses were conducted with the participants' translation papers and the recorded conversation between the researcher and the participants during the task.

The analysis of the translation papers indicated the fact that there was a discrepancy of recognition among four construction types. Table 6 details the number and the proportion of correct identification of the four ASCs. The participants fully recognized transitive constructions. Caused-motion constructions were the second type to be correctly understood. Ditransitive constructions marked the third type for the participants to get the exact meaning. Resultative constructions were the most difficult ones for the participants to accurately comprehend.

⁷ Marginal variability of each participant's Vdev and Cdev score existed; however, it did not have a critical influence on the general interpretation of the result.

TABLE 6
Participants' Correct Recognition of the Four ASCs

Construction	Correct sentence / Total sentence (n)	Proportion (%)
Ttransitive	44 / 44	100
Ditransitive	26 / 44	59
Caused-motion	34 / 44	77
Resultative	12 / 44	27

Furthermore, as Table 7 shows, the participants had a tendency to mistake ditransitive, caused-motion, and resultative constructions for transitive constructions. In most cases, the participants combined the second object or the oblique with the (first) object, making the relationships such as possession or modification. Subsequently they understand the sentences as transitive constructions.⁸ Several participants grouped certain words together to make collocations. For example, 'got' was blended with 'invitation', forming the meaning of 'invite'. Table 8 exemplifies the cases of misinterpretations.

TABLE 7
Participants' Misinterpretation of the Three ASCs as Transitive Constructions

Construction	Misunderstanding / Total sentence (n)	Proportion (%)
Ditransitive	18 / 44	41
Caused-motion	7 / 44	16
Resultative	25 / 44	57

TABLE 8
Examples of Misinterpretations

Code	Examples
D	Paula took Sue a message. → polla-neun su-ui munja-reul ba-dat-da. (Paula received Sue's text message.)
E	Laura got the ball into the net. → Lora-neun neteu-e geolin gong-eul ppae-naet-da. (Laura pulled out the ball hanging on the net.)
K	Lyn threw the box apart. → Lin-eun bagseu jogak-eul deon-jyeot-da. (Lyn threw a piece of box.)

⁸ An anonymous reviewer discussed that the misunderstandings meant learners' not knowing the verb meaning. It might be possible, but it is not very suitable explanation because misinterpretation of ASCs is never equal to unknowingness of verb meaning. In fact, the participants witnessed that they generally caught the characteristics of the verbs but did not easily understand the relations between the elements after the verb. From their responses, we can rather validate the fact that sentence configurations and corresponding semantics play an important role in the sorting task in that they tried to rely on constructional relations during the task. We can also illustrate the possible difficulties in understanding the relations between the elements of sentence representations. Those points will be thoroughly dealt with on the section 5.

The analysis of the recording data reported that nine participants tried to focus on the sentence meaning, but seven of them were likely to do the task in accordance with the similarity of sentence forms. Out of the seven participants, however, five said later that they kept the sentence meaning in mind as much as the sentence form as it is. One of the participants said that he used his own strategy irrespective of sentence meanings. In all, the participants tried to concentrate on sentence meanings as much as other cues to sorting sentences.

It is noteworthy that the majority of the participants dimly grasped the basic meaning of the ASCs and the relationship between the elements in the configurations. Moreover, some participants showed expert-like description of the meanings and characteristics of the ASCs, and this point was not expected throughout the experiment. Some of the participants' responses on the constructional meanings are given in Table 9.

TABLE 9
Participants' Responses on the Meaning of the ASCs

Transitive constructions
A: Just an act. Nothing is added.
H: A person does something, but that's an end.
Ditransitive constructions
C: A person is doing something to someone.
G: He or she gives something to others.
H: The person in the first slot does an act to the other person.
Caused-motion constructions
A: There is an action, and there is an exact place or location.
C: I don't understand the exact meaning of the sentence, but I feel that the meaning of verb does not explain the whole interpretation of the sentence ... Something like place or location is always included in the sentences.
H: A person does something, and more actions follow.
J: A person performs an act toward something, and the result takes place in certain locations.
Resultative constructions
E: The combination of the third and the fourth elements (i.e. the object and the complement) seem to make another meaning in a sentence.
G: The verbs (i.e. got and took) have little meaning, but the last slot word makes the meaning of the verbs more concrete.
H: A person does something, and more actions occur.

One interesting point lies on the analysis in accordance with the learners' language competence. Table 10 demonstrates the relationship between the participants' CSAT English grades and their misunderstandings on other three constructions for transitive constructions. It reveals that learners' language proficiency seems to be related to the correct recognition on the ASCs. Although the phenomenon might be hard to generalize due to the insufficient number of participants, it can be a meaningful observation of the close relationship between language competence and constructional meanings.

TABLE 10
Participants' English Grade and Their Misinterpretations on the ASCs

	A	B	C	D	E	F	G	H	I	J	K
CSAT English grade	4	3	3	5	4	3	1	1	4	2	4
Misunderstanding ⁹	di→tr	2	1	0	4	2	1	1	2	1	3
	cm→tr	3	0	0	0	3	0	0	1	0	0
	rs→tr	2	4	2	3	3	3	0	3	1	3
Sum	7	5	2	7	8	4	1	4	4	2	6

V. GENERAL DISCUSSION

The results of the experiment are broadly consistent with Bencini and Goldberg (2000) and other EFL-based replications. The mean Vdev and Cdev scores show significant differences, indicating that the participants paid attention to the constructional meanings rather than the verb meanings alone. The participants did not know the concept of the ASCs, but they could catch the meaning of the sentence configurations through the experiment. Some of the participants did understand the constructional meanings quite clearly. Just as native speakers of English "see both verbs and constructions as relevant to establishing meaning" (Bencini & Goldberg, 2000, p. 648), Korean learners of English were also able to recognize the existence of the English ASCs and utilize their meanings in sentence interpretation.

However, there seemed to exist remarkable disparities between Bencini and Goldberg (2000) and the present replication study. First of all, the degree of understanding the ASCs showed discrepancy between the two experiments. For instance, the percentage of correct recognition on the target ASCs except transitive constructions tended to be low. In some cases, the three ASCs were regarded as transitive constructions. Interestingly, the similar phenomena were often observed on the same replication studies in EFL situations such as Martínez Vázquez (2004). In addition, language proficiency appeared to play a supportive role in making use of the semantics of the ASCs in sentence interpretation. The result was in line with Liang (2002), which verified the positive relationship between learners' language competence and their reliance on constructional meanings to sentence comprehension.

One possible explanation of the reason why this happens stems from the problem of learners' access to the relation between the English ASCs. According to Goldberg et al.

⁹ 'di' means 'Ditransitive construction', 'cm' means 'Caused-motion construction', 'rs' means 'Resultative construction', and 'tr' means 'Transitive construction'.

(2004), the ASCs are viewed as very abstract linguistic entity and English does not seem to have overt morphological cues; therefore, the constructions can only be recognized by a mixture of argument types and word orders. Moreover, as mentioned before in section 1, it has been suggested that English makes more use of semantics of lexical configurations than other languages (Goldberg, 2006). Although EFL learners have a sense of the English ASCs and struggle to make full use of them, their cognitive ability has not been sufficiently trained to notice and access the relation of English ASCs. Therefore, EFL learners feel difficulty to interpret the other types of ASCs except transitive constructions and they stick to the representations, which are the simplest configurations among the four ASCs and thus easily accessible to them.

Some people could say that the results came from learners' strategies to exploit the meanings of the elements in order to make plausible interpretation of the sentences. It might be a reasonable explanation on the learners' behavior, but the point is that the learners perceive the semantics of the ASCs. For example, the recording data revealed that the learners generally reported quite suitable interpretations on the features of each ASC. Following section 2, constructions are said to be a mixture of form, meaning, and use. If the learners try to use clues from the elements to comprehend sentences, it rather reflects their effort on making use of the characteristics of constructions. Just because the learners have not been trained enough to access and utilize the characteristics of constructions in educational settings, they do not seem to actively make full use of the linguistic knowledge on English.

We have confirmed that complement configurations and corresponding semantics play a relevant role in sentence interpretation. Korean learners of English show reliance on English constructional meanings either implicitly or explicitly, and the dependency is one of the most important characteristics in language processing. However, the learners do not seem to freely access the linguistic system of the English ASCs, resulting in inadequate interpretation except for the transitive constructions. The fact that language learners showed disparate degree of comprehending each ASC gives us indirect yet supportive evidence on the influence or the existence of the relations (i.e., hierarchy) among the English ASCs on the learners. Furthermore, language learners' restricted cognitive access to the target language system seems to prevent the learner from making full use of the nature of the configurations.

In the perspective of constructionist approach, language acquisition is regarded as a process from piecemeal learning of concrete exemplars to a huge collection of memories of previously-experienced utterances through learners' cognitive development including categorization, generalization, abstraction, or the like (Ellis, 2002; Ellis & Ferreira-junior, 2009; Goldberg, 2006; Goldberg et al., 2004, 2007; McDonough & Kim, 2009; Tomasello, 2000, 2003; Tomasello & Brooks, 1999). Under those circumstances, ASCs function as a

starting point and an assistant (see section 2). Based on the consideration of the role of the ASCs in language acquisition, the materials and the instructions provided to language learners need to be developed in a way that accelerates the learners' ability to access the characteristics of the English ASCs. If we consider linguistic features of English and the benefits of utilizing the ASCs in language comprehension and production, activating the learners' access to the characteristics of the English ASCs will become impetus to effectively learn the target language.

It is true that the 7th and the revised 7th Korean National Curriculum of English have provided Korean learners of English with sentential input as a string of “seven sentence types for communication” (Ministry of Education, 1997; Ministry of Education & Human Resources Development, 2007). Thus, it might be likely that the learners have already learned ASCs to some degree. In reality, however, there are no practical specifications on how those sentence types have to be presented, organized, utilized, or instructed to language learners. Just loading a bunch of sentence types in the curricula does not mean that the learners are being taught the entities; it rather implies our ignorance or lack of the consideration on the nature of ASCs and the learners' insufficient exposure on the sentential input. As discussed in section 2, ASCs are characterized as three-dimensional concept (i.e., form-meaning-function) and are seen as a reasonable linguistic entity functioning as a pulley or steppingstone to language acquisition. In that sense, it is no exaggeration that Korean learners of English have difficulty in freely accessing the target language system and making full use of the configurations under the present naïve sentence structure system.¹⁰

This leads us to another important issue: the matter of input the learners receive. EFL learners are not exposed to as much input as children learning their native language (Martínez Vázquez, 2004). Besides, English curricula in Korea do not seem to provide the learners with sufficient sentential input (Shin, 2009). As Gries and Wulff (2005) argues, however, the learners can arrive at generalizations that allow themselves to construction-based explanations; they alternatively suggest the vital role of frequency of exposure to the target constructions. Indeed, most of the cognitive linguists including constructionists agree on the idea that input frequency seems to be the central factor affecting the extent of abstraction of a substantial inventory of constructions (Boyd & Goldberg, 2009; Ellis, 2002; Ellis & Collins, 2009; Ellis & Ferreira-junior, 2009; Larsen-Freeman, 2002; McDonough & Kim, 2009; Tarone, 2002; Year & Gordon, 2009). In particular, input

¹⁰ Based on the usage-based accounts of language acquisition, adults still learn something from step-by-step piecemeal fashion through cognitive mechanisms (Goldberg et al, 2004; Goldberg, 2006). That is to say, biological concept of 'adult' does not mean the end-state of learning. Thus, the same explanation above would also be applied in the case of adult Korean learners of English.

frequency aid learners in acquiring lexical frames and extending those frames to generalized abstract representations (Bybee, 1995, 2008; Childers & Tomasello, 2001; Ellis, 2002, 2005; Robinson & Ellis, 2008). In this perspective, language learners will receive powerful assistance on language acquisition if the input given to them is well-organized, reflecting the characteristics of input frequency and the learners' linguistic or cognitive levels.¹¹

In fact, there has been an attempt to validate the effectiveness of ASCs instruction on the Korean learners of English. Shin (forthcoming) conducted an experiment whether ASCs instruction with input frequency manipulation operates as a reasonable force to effective language acquisition. The 15-week instruction confirms that the knowledge of ASCs provides learners with a much easier access to the system of the target language, driving them to understand and use the language more fluently and accurately in a much more balanced manner. Although the experiment was targeted to adult learners, the implications shed light on the idea that putting the knowledge of argument structure constructions to practical use directly links to effective language acquisition and processing by activating learners' cognitive mechanisms.

VI. CONCLUDING REMARKS

This paper was motivated by Bencini and Goldberg (2000) and other replication studies in EFL situations to explore how Korean learners of English construct the meaning of English sentences. Based on the experiment, it proved that the learners significantly depended on constructional meanings rather than verb meanings alone. Moreover, even though they were not taught the concept and the characteristics of the ASCs, they recognized the abstract semantics of complement configurations both implicitly and explicitly. However, the degree to which the learners understood each English ASC was not likely to be constant. The findings throw light on the matter of the learners' access to the relation between the ASCs, that is, language system. Martínez Vázquez (2004) asserts that L2 learner of English generally requires a higher cognitive effort to fully understand constructional meanings. Thus, giving language learners more chances to promote and maximize their access to the relations among the ASCs with input frequency manipulation

¹¹ An anonymous reviewer raised a question on the matter of effectiveness of rule-based instruction vs. input frequency manipulation. This point is not our main concern here, so the discussion will not be thoroughly dealt with. What should be noted is that the two concepts are separate and different from each other, so they can not be contradictory; consideration on input frequency can be implemented on any instruction types whether they are rule-based or exemplar-based.

will become a desirable and powerful approach to effectively learn the target language.

The restrictive range of the participants' age and gender is a possible weakness in the experimental design, and further studies including various age and gender groups will support the findings of the paper. The relation among ASCs was indirectly sustained by the way of learners' different comprehension degree on the configurations, but successive studies have to be extensively conducted in order to directly prove out the relations. The number of participants is not likely to be enough to continuously carry out quantitative analyses, so in-depth qualitative analyses compensated for the defect which may come from the insufficient number of participants. Constructions are "psychologically real linguistic categories" (Bencini & Goldberg, 2000, pp. 649-650) which play a significant role in language processing, regardless of the learners' mother tongue or linguistic environments. For effective language acquisition, we need to cogitate on implementing the nature of the English ASCs into the field of language learning and teaching in Korea.

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