Morphological Passivization and the Change of Lexical-Semantic Structures in Korean

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Abstract

The purpose of this paper is to analyze the lexical-semantic structure of morphologically derived passive verbs in Korean based on Pustejovsky (1995)'s Generative Lexicon Theory (GL) and to explain the change of the root verb's lexical-semantic structure by means of passivization. Passivization in this paper is defined as the unaccusaztivization. In Argument Structure of derived passive verbs, the agent argument is deleted and the theme argument is realized as a syntactic subject. As for Event Structure, derived passives express left-headed event (achievement), whereas their roots denote right-headed event (accomplishment). In Qualia Structure, passive verbs and root ones have the same Fomal Role, but in Agentive Role of passive verbs, an act weakens to a process. Both Formal and Agentive Roles have the same theme argument.

1   Introduction

Many previous studies treated passivization as a part of syntactic phenomena. But in Korean, many passive verbs are morphologically derived from root stems by affixing '-i-, -hi-, -li-, -gi-'[1], such as 'yel-ta' (to open) – 'yel-li-ta' (to be opened), or 'cap-ta' (to catch) – 'cap-hi-ta' (to be caught), and behave as independent lexical items. I call this process the morphological passivization. But passive verbs and their roots are very closely related to each other in their semantics and morphology. There are also argument changes and aspectual changes resulting form morphological

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[1] In Korean, causative morphemes have the same forms as passive ones. Thus some passive verbs are similar to causative ones. But this paper will not mention about that similarity to just focus on derived passive. There is also another device for passivization, '-e cita' (to become). But this device is not morphological but syntactical. Therefore, this paper will not treat the syntactic passivization by '-e cita' (to become).

passivization. It is noticed that these changes have some tendency. Therefore, the argument realizations of the passive verbs can be predicted according to verbal forms.

Passivization is usually treated as a syntactic process in many studies. But at least in Korean, a passive form of a verb is an independent word, but in English and many other European languages, a passive form is realized just as a past participle of a active verbs. Thus, passivization can be analyzed as a morphological process in some languages such as Korean, Japanese, while it is a syntactic process in other languages such as English. I also assume that morphologically derived passive verbs must be examined as lexical items and morphological passivization is related to their lexical-semantic structures.

This paper proposes the lexical-semantic structures of the morphologically derived passive verbs in Korean, based on Pustejovsky (1995)'s Generative Lexicon Theory (GL). As well, the basic lexical-relationship between derived passive verbs and their roots will be suggested through observing and the change of the lexical-semantic structure resulting from passivization. In the following, I begin with the outline of the Lexical-Semantic Structure of GL. In this section 2, I also mention that GL's Lexical-Semantic Structure is a very useful device to represent the relationship between morphologically related lexical items. Then, in section 3 and 4, I will suggest the change of Argument Structure and Event Structure by passivization and the Lexical-Semantic Structure of the derived passive verbs and their roots.

2   The Lexical-Semantic Structure of GL

Pustejovsky (1995) criticizes that the Lexicon of the previous lexical semantics, such as Generative Semantics, is not enough to explain the creative use or words, the permeability of word senses, and the expression of multiple syntactic forms because it is a Sense Enumeration Lexicon and uses a lexical decomposition into a specific number of primitive. Thus, Pustejovsky (1995) suggests Generative Lexicon (GL) to represent lexical meaning by means of generative devices and to proposes a new way of viewing lexical decomposition, focusing on the compositionality of lexical semantics.

Pustejovsky (1995) also represents the lexical-semantic structure with greater internal structure in order to show the compositionality and generative aspect of lexical meaning. GL's lexical-semantic structure has three substructures: Event Structure, Argument Structure and Qualia Structure. Event Structure defines the event type of a lexical item and does not characterizes only the basic event type, such as process or state, but also the subeventual structure composed of at least two subevents. Argument Structure specifies the number and type of the logical and syntactic arguments. In GL, Argument Structure has four types of arguments: true argument, default argument, shadow argument and true adjunct. From this Argument Structure, we can know that GL assumes the broad range of arguments, including even true adjunct. As Pustejovsky (1995), Qualia Structure represents the set of properties or event associated with a lexical item. Event Structure

and Argument Structure are related to each other in this sub structure, Qualia.

The headedness, which represents the prominency of a subevent in the Event Structure, is a generative mechanism to realize arguments syntactically and show the verbal polysemy. In particular, complex events, which are composed of a process and a state, can express left-headed events (accomplishments), right-headed events (achievements), and headless events (causative/ inchoative alternation), depending on the position of the headedness. Let me suggest the examples pplying this lexical-semantic structure. 'sink' shows a polysemyous behavior, causative/inchoative alternation.

(1)

$$
\text{sink}
$$

$$
\text{EVENTSTR} = \begin{bmatrix} E_1 = e_1: \text{process} \\ E_2 = e_2: \text{state} \\ \text{HEAD} = \\ \text{RESTR} =< \end{bmatrix}
$$

$$
\text{ARGSTR} = \begin{bmatrix} \text{ARG}_1 = x: \text{human} \\ \text{ARG}_2 = y: \text{phys\_obj} \end{bmatrix}
$$

$$
\text{QUALIA} = \begin{bmatrix} \textit{default\_causative-lcp} \\ \text{FORMAL} = \text{sink\_result}(e_2, y) \\ \text{AGENTIVE} = \text{sink\_act}(e_1, x, y) \end{bmatrix}
$$

(2) (a) The enemy sank the boat.

   (b) The boat sank.

As we know in (1) and (2) 'sink' has only one lexical-semantic structure but two meanings and syntactic realization. If the process event, e_1, has the headedness, a causative sentence (2a) is realized, whereas if the state event, e_2, is headed, an inchoative sentence (2b) is the surface sentence of 'sink'.

GL also suggests the Default Causative Paradigm (DCP) in order to explain causative/inchoative alternation verbs like in (1). I think that if the verbs belong neither to direct causation nor to indirect causation, Pustejovsky (1995) classifies those verbs as DCP. The typical DCP verbs are unaccusative verbs, whether they show causative/inchoative alternation or not. So it can be inferred that the lexical-semantic structure of complex event verbs is based on DCP.

Now let me think in what point GL is useful to characterize the relationship between morphologically related lexical items. First, GL's lexical-semantic structure has systematic substructures and offers an analytic tool. Thus GL's lexical-semantic representation captures similarities and differences between lexical items more concretely and more clearly than other structure. We can infer that morphologically related lexical items share some parts of the lexical-semantic structures.

Second, GL's representation indicates the relationship between form and meaning. We can assume that in Korean, root active verbs are corresponding to causative verbs in (2a), while morphological derived passive verbs are similar to inchoative verbs in (2b). Their forms, however, are different from each other, whereas English counterparts have the same forms. GL provides one representation for causative/inchoative alternation verbs in English, but two related representations for active verbs and derived passive verbs.

3 The Change of Argument Structure: deletion of the agent argument

Generally, the object argument of the active is realized as the subject of the passive and the subject of the active is mapping in to the oblique argument of the passive. That is, the agent argument is obligatory in the active, while it is optional in the passive. So passive verbs has one less true argument than active ones.

(3) (a) tutie   kyengchalkwan-i   ku   totwuk-ul   cap-ass-ta
         at last the police officer-NOM that thief-ACC   catch-Past-Dec
         "At last the police officer caught that thief."

    (b) tutie   ku   totwuk-i   (kyengchalkwan-eygey)   cap-hi-ess-ta
         at last that thief-NOM   police officer-DAT   catch-Passive-Past-Dec
         "At last that thief was caught by the police officer."

But there are some questions about the status of the agent argument in Korean. First, in Korean morphological passive, the agent argument has the different status from that of other languages. In English passive, the agent argument is syntactically optional but semantically and logically necessary. The argument like this is a default argument in GL. In Korean morphological passive, however, the agent argument is both syntactically and logically optional. Consider the following examples:

(4) (a) John-i   pangmun-ul   yel-ess-ta
         John-NOM   the door-ACC   open-Past-Dec
         Lit. "John opened the door."

    (b) pangmun-i   ?*John-eygye/??John-eyuyhay   yel-li-ess-ta
         the door-NOM   ?*John-DAT/??John.by   open-Passive-Past-Dec
         Lit. "The door was opend (by John)

(5) (a) Mary-ka   ˙sakwa-lul   mek-ess-ta
         Mary-NOM   apple-ACC   eat-Past-Dec
         Lit. "Mary ate an apple."

    (b) ??sakwa-ka   Mary-eygey   mek-hi-ess-ta
         apple-NOM   Mary-DAT   eat-Passive-Past-Dec
         Lit. "An apple was eaten by Mary."

Korean passive verbs such as 'yel-li-ta' (to be opened), 'mek-hi-ta' (to be eaten) do not take the oblique agent argument. (4b) and (5b) are less natural and acceptable than (4a) and (5a). In addition, it is anomalous that the oblique agent argument occurs in the question like (6a), while it is very natural in English like (4b).[2]

(6) (a)   ??nwukwu-ey uyhay   totwuk-i   cap-hi-ess-ni?
           Whom-by   the tiefe-NOM   catch-Passive-Past-Q
    (b)   By whom was the thief caught?

Second, the agent argument is often said to have the dative marker like '-eygey, -hante' in Korean passive. Actually, the argument having the dative marker in passive is interpreted rather a goal that an agent. This argument may be both an agent and a goal in the active as follows:

(7) (a)   totwuk-i   swunkyeng-eygey   cap-hi-ess-ta
           the thief-NOM   a police officer-DAT   catch-Passive-Past-Dec
           Lit. "The thief was caught by Mary."
    (b)   ai-ka   kay-hantey   mul-li-ess-ta
           noise-NOM   dog-DAT   bite-Passive-Past-Dec
           Lit. "The child was bitten by the dog."

In some cases, however, a passive verb itself requires a goal argument logically. Consider the followings:

(8) (a)   paechwu-ka   cuputwul-eygey   pal-li-ess-ta   .
           cabbage-NOM   housewives-DAT   sell-Passive-Past-Dec
           Lit. "Cabbages were sold to housewives."
    (b)   pungtay-ka   Mary-hante   kam-ki-ess-ta
           the bandage-NOM   Mary-DAT   wind-Passive-Past-Dec
           Lit. "The bandage was wounded on Mary."
(9) (a)   *paechwu-ka   sangin-eygey   cuputwul-eygey   pal-li-ess-ta
           cabbage-NOM   seller-DAT   housewives-DAT   sell-Passive-Past-Dec
           Lit. "*Cabbages were sold to the seller to housewives."
    (b)   *pungtay-ka   John-hante   Mary-hante   kam-ki-ess-ta
           the band-NOM   John-DAT   Mary-DAT   wind-Passive-Past-Dec
           Lit. "*The bandage was wounded on John on Mary."
(10)(a)   paechwu-ka   sangin-eyuyhay cuputwul-eygey   pal-li-ess-ta
           cabbage-NOM   seller.by   housewives-DAT   sell-Passive-Past-Dec
           Lit. "Cabbages were sold to housewives by the seller."

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[2] Prof. Chungmin Lee (p.c)

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(b)   pungtay-ka   John-eyuyhay   Mary-hante   kam-ki-ess-ta

the band-NOM   John.by   Mary-DAT   wind-Passive-Past-Dec

Lit. "The bandage was wound on Mary by John."

As we see in (8), if the agent argument is not a goal in the active, the dative argument with '*-eygey*' or '*-hante*' is just a goal, not an optional agent. So if another dative argument occurs like in (9), the sentence is ungrammatical. However, the adjunct with '*-ey uyhae*', which marks the agent, can be added like in (10). From these facts, I suggest that the dative argument in the passive is not an agent but a goal and that this argument is a default argument because it is syntactically optional but logically necessary.

As well, sentences are ungrammatical when the dative arguments occur as we see in (11). If these sentences can be interpreted, they means that somebody (agent) does something for the dative argument. Therefore, the dative argument is not an agent.

(11)(a)   ?*pangmun-i   Mary-eygey   yel-li-ess-ta

the door-NOM   Mary-DAT   open-Passive-Past-Dec

(b)   ?*ku kwumeng-i   John-hante   mak-hi-ess-ta

the hole-NOM   John-DAT   stop up-Passive-Past-Dec

As we know from these argument structures and other facts, the argument structure of the active verb changes into that of the passive verbs through morphological passivization like in (12). The agent in the active is deleted in the passive. So the subject in the active is an agent but the subject in the passive is a theme. In this point, the passive verb is an unaccusative verbs and passivization is unaccusativization.

(12)(a)   the active verbs

$$\text{ARGSTR} \ = \ \begin{bmatrix} \text{ARG}_1 = \text{x (agent)} \\ \text{ARG}_2 = \text{y (theme)} \\ (\text{D-ARG}_1 = \text{z (goal)}) \end{bmatrix}$$

↓   Passivization

(b)   the passive verbs

$$\text{ARGSTR} \ = \ \begin{bmatrix} \text{ARG}_1 = \text{y (theme)} \\ (\text{D-ARG}_1 = \text{z (goal)}) \end{bmatrix}$$

4   The Change of Event Structure and Qualia

As Comrie(1981) mentioned, the passive expresses the perfective event and has a complex event structure. In the passive, the event is described from the end point. Y-S. Kim, et al (2000) and Y-S. Kim (2001) suggest that the result state is a prominent subevent and has the headedness in the

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passive. That is, the event of the passive verb is the right-headed event, achievement. The examples in (13) support this suggestion.

(13)(a) ??Mary-ka   10 pun tong-an   John-eygey   cap-hi-ess-ta
      Mary-NOM   for 10 minutes   John-DAT   catch-Passive-Past-Dec
      Lit. "Mary was caught by John for 10 minutes."

(b) Mary-ka   10 pun-maney   John-eygey   cap-hi-ess-ta
    Mary-NOM   in 10 minutes   John-DAT   catch-Passive-Past-Dec
    Lit. "Mary was caught by John in 10 minutes."

(c) *Mary-ka   cemcem   John-eygey   cap-hi-ess-ta
    Mary-NOM   gradually   John-DAT   catch-Passive-Past-Dec
    Lit. "Mary was caught gradually by Mary."

(d) Mary-ka   keuy   John-eygey   cap-hi-ess-ta
    Mary-NOM   almost   John-DAT   catch-Passive-Past-Dec
    Lit. "Mary was almost caught by John."

Achievement verbs cannot occur with adverbial phrases, which modify the process of the complex event. With a durative adverbial, (13a) can mean that the result state continue "for 10 minutes". Except that cast, it is somewhat unacceptable and unnatural. 'cemcem'(gradually) in (13c) is a manner modifier which express the manner of the process, and it cannot occur with achievement verbs. Whereas (13b) has a frame adverbial, '10 pun-maney'. This is the typical example that support the telicity of the event. And 'keuy' (almost) in (13d) also modify the telicity.

The event of the active is, however, focused on the process subevent. Therefore, it indicates the left-headed event (accomplishment verb). The following example proves this fact.

(14)   John-i   10 il-dongan John-lul   cap-ko iss-ta
     Mary-NOM   for 10 days   Mary-ACC   catch-Asp-Dec
     Lit. "John try to catch Mary for 10 days."

Sentence (14) shows that the process subevent is continued. That means that the process subevent is prominent in Event Structure of 'cap-ta' (to catch) and has the event headedness. Comparing with the active counterpart, the change of Event Structure by passivization is as follows[3]:

(15)(a)   'cap-ta' (catch)   (b)   'cap-hi-ta' (be caught)

e_0 (=T)<   Passivization e_0 (=T)<
                  $\rightarrow$

e_1* (=P*) e_2 (=S) e_1 (=P) e_2* (=S*)

We can suggest that the event frame does not change whether the verb is passivized or not, but

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[3] In (12), 'P' means 'progress' and 'S' means 'state'. And 'T' expresses 'transition'.

passivization results in the change of the headedness in Event Structure. This shows that a verb and its passive counterpart have a morphological relatedness.

Now I show the lexical-semantic structures of '*cap-ta*' (to catch) and '*cap-hi-ta*' (to be caught) like the followings (16).

(16)(a)
$$
\begin{bmatrix}
\text{'}cap\text{-}ta\text{' (to catch)} \\[6pt]
\text{EVENTSTR} = \begin{bmatrix} E_1 = e_1\text{: process} \\ E_2 = e_2\text{: state} \\ \text{HEAD} = e_1 \\ \text{RESTR} =< \end{bmatrix} \\[24pt]
\text{ARGSTR} = \begin{bmatrix} \text{ARG}_1 = x\text{: human} \\ \text{ARG}_2 = y\text{: phys\_obj} \end{bmatrix} \\[16pt]
\text{QUALIA} = \begin{bmatrix} direct\_causative\text{-}lcp \\ \textbf{FORMAL = be\_caught\_state}(e_2,y) \\ \text{AGENTIVE} = \text{catch\_act}(e_1,x,y) \end{bmatrix}
\end{bmatrix}
$$

(b)
$$
\begin{bmatrix}
\text{'}cap\text{-}hi\text{-}ta\text{' (to be caught)} \\[6pt]
\text{EVENTSTR} = \begin{bmatrix} E_1 = e_1\text{: process} \\ E_2 = e_2\text{: state} \\ \text{HEAD} = e_2 \\ \text{RESTR} =< \end{bmatrix} \\[24pt]
\text{ARGSTR} = \begin{bmatrix} \text{ARG}_1 = y\text{: phys\_obj} \end{bmatrix} \\[16pt]
\text{QUALIA} = \begin{bmatrix} default\_causative\text{-}lcp \\ \textbf{FORMAL = be\_caught\_state}(e_2,y) \\ \text{AGENTIVE} = \text{be\_caught\_process}(e_1,y) \end{bmatrix}
\end{bmatrix}
$$

By the way, (16) shows that passive verbs and their roots has both a similarity and a difference in Qualia Structure. Pustejovsky (1995) defines that Qualia Structure is modes of explanation. In Qualia Structure, Argument Structure and Event Structure are related to each other. Qualia Structure has four roles: Formal, Agentive, Constitutive, Telic. Formal and Agentive roles have to do with Event Structure. Formal expresses the following result subevent, while Agentive denotes the proceeding process subevent. As in (16), Qualia Structure of the active verb has something in common with that of the related passive verb. Both the active verb and the passive verb have the same formal role, but they have a different agentive role. This is another fact that reflects the morphological relatedness, which a verb and its passive counterpart have.

There is another point to observe in Qualia Structure. The agentive role in the active verb is an

'act' with an agent and a theme, while the agentive role in the passive is a 'process' with only a theme.[4] In this point, 'process' means a kind of act without an agent. As for the passive verbs, both formal and agentive have the same theme argument. The theme of the passive may be cause and another adjunct can be a cause. This also reflects the unaccusativity of the passive verb..

5   Concluding Remarks

This paper analyzes morphologically derived passive verbs in Korean not in terms of syntax, but lexical semantics by using GL. In particular, the change of Argument Structure by derivation leads to the change of Event Structure. Passivization as well as causativization of unaccusatives reflects causative/inchoative alternation. The directions of alternation, however, are reverse and the beginning of the event is different.

In conclusion, '-eykey' adjunct is not an agent but a default argument as a goal or just adjunct in Argument Structure of passive verbs. Their Event Structure is a left-headed event (achievement). In Qualia Structure, passive verbs and root ones share the same fomal role in their Quailia Sturcture with each other, but an act in agentive weakens to a process. In addition, this paper defined passivization as unaccusativization that an affected theme is realized as a syntactic subject, and as the change of headedenss into the result-state subevent. Thus, it can be assumed that only the complex event verbs can be passivized and an affected theme must be represented in the result state.

Acknowledgements

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[4] Pustejovsky (1995) don not use this term. He use only one term 'act' for the agentive role.

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