

Proto-Role Theory and the Accusative Case Marker *ul/lul* in Korean¹

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Lee, Sun-Hee. 1998 **Proto-Role Theory and the Accusative Case Marker *ul/lul* in Korean.** *Language and Information* 2.2, 81-120. The case marking phenomenon in Korean is closely related to semantic entailment and should be studied as an interface between syntax and semantics. Assuming a direct mapping between syntactic realization and semantic information, this study investigates the role of the accusative marker *ul/lul* in Korean, and explores the semantic constraints working on the argument realization on the basis of proto-roles hypothesis. Specifically, I will study various types of case alternations in Korean and clarify the role of the accusative marker *ul/lul*, which manifests the distinction between direct object NPs and oblique NPs. (**The Ohio State University**)

1. Introduction

This study investigates the role of the accusative marker *ul/lul* in Korean and explores the semantic constraints on the grammatical realization of an argument with special attention to the case

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alternation phenomena involving *ul/lul* and other postpositions. Traditionally *ul/lul* has been regarded as the accusative marker and utilized for determining an object in a sentence. Passivization is provided as a convincing evidence for the objecthood of *NP ul/lul*.

- (1) a. John i thokki lul cap ass ta.
 John rabbit Acc catch Past Ending
 'John caught a rabbit.'
 b. thokki ka John eykey cap hi ess ta.
 rabbit Nom John by catch Passive Past Ending
 'A rabbit was caught by John.'

As in English, the *NP ul/lul* in a transitive clause appears in the subject position of a passive sentence. This seems to support the objecthood of *NP ul/lul*, but passivization cannot be used as a strong evidence for objecthood, when we consider that there are many exceptions.

- (2) a. Mary ka John ul ttayli ess ta.
 Mary Nom John Acc hit Past Ending
 'Mary hit John.'
 b. *John i Mary eykey ttayli eci ess ta.
 John Nom Mary by hit Passive Pres Ending
 'John was hit by Mary.'
- (3) a. Mary ka John ul chayk ul cwu ess ta.
 Mary Nom John Acc that book Acc give Past Ending
 'Mary gave John a book'
 b. *John i Mary ey uyhayse chayk ul cwue ci ess ta.
 John Nom Mary by book give Passive Past Ending
 'John was given a book by Mary.'

- c. *chayk i Mary eyuyhayse John ul cwue ci ess ta.
 book Mary by John Acc give Passive Past Ending
 'The book was given John by Mary.'

In contrast with Indo European languages, the passive formation in Korean is not easy to predict since it does not proceed in a uniform way. The passive morphemes such as *ci*, *hi*, *li* etc. are used for the passivization of transitive verbs. In addition, instead of using the morphologically derived forms by attaching these morphemes, morphologically unrelated lexical or phrasal expressions are utilized for representing the meaning of the passives. For example, the passive form of *ttaylita* 'hit' is semantically correspondent to the intransitive verb *macta* 'be hit'. This correspondence, however, is not an example of passivization.

Another test for objecthood is the accusative case dropping. The postposition, *ul/lul* can be easily dropped, so it has been called a structural case marker which is distinguished from other postpositions.

- (4) John i ku sakwa(lul) mek ess ta.
 John Nom that apple eat Past Ending
 'John ate that apple.'

Case dropping, however, does not work as a full fledged piece of evidence for the objecthood because it is not possible to drop *ul/lul* in certain contexts. Various pragmatic factors are involved in case dropping phenomena, and this has been a very complicated and long existing puzzle for Korean grammar. Since it is not the main concern of this study, I will limit myself to

pointing out that the complex phenomena of case dropping do not completely support the objecthood of an NP. In addition other postpositions can be dropped.

- (5) Mary nun thoyoil ohwu(ey) John kwa mannassta.
Mary Top Saturday afternoon(on) John with met
'Mary met John on Saturday afternoon. '

I would like to make clear that I am not refuting the argument that *ul/lul* functions as the accusative marker in Korean. Basically, I agree that it works as a structural case marker, but I'd like to emphasize that the structural mechanism of passivization or case dropping does not fully support the objecthood of an NP *ul/lul*. In order to argue in favor of the objecthood, I claim that it is necessary to consider distinctive semantic features that *ul/lul* entails, as other postpositions do. For example, just as the postposition *eyse* 'on' is semantically related to Location, *ul/lul* is associated with particular semantic information. By considering relevant semantic interpretations, we can generalize the role of the accusative case *ul/lul* and furthermore, explain what semantic factors characterize the objecthood of an NP.² It is possible to generalize the semantic patterns in grammatical realization. We can provide a more accurate explanation of structural argument realization by considering semantic entailments rather than by depending on a pure structural mechanism. This further implies that case realization in Korean should be investigated as an

²By the notion of objecthood, I mean the arguments with *ul/lul* which are subcategorized by predicates by *ul/lul* according to the definition of traditional grammar. Not every element taking *ul/lul* belongs to objecthood. For example, adjuncts taking *ul/lul* are excluded from objecthood. Also I doubt that the arguments taking pure structural case marker *ul/lul* such as verbal nouns in light verb constructions can be classified as objects.

interface phenomenon between syntax and semantics.

In this paper, I will investigate various case alternations³ in Korean in order to clarify the role of the accusative marker *ul/lul*, which manifests the distinction between direct object NPs and oblique NPs. I assume that the realization of the object with the accusative marker *ul/lul* is not a one to one mapping between an individual thematic role type and an argument but a many to one mapping between semantic entailments and an argument, according to Dowty (1991). The systematic semantic contrasts in case alternation can be captured by proto role entailments, which leads us to distinguish *NP ul/lul* from other arguments. When we consider the language universal tendency of argument realization, the semantic characterization supports the morphosyntactic status of the accusative marker *ul/lul*. Moreover, I will show that the semantic properties of the accusative *ul/lul* provide an explanation for utilizing it for some adjuncts and predict what kind of semantic information can be added.

In sections 2 and 3, I will introduce some case alternation structures and different approaches to them in terms of thematic roles. Section 3 will mainly focus on Dowty's (1991) proto roles theory. Section 4 is devoted to an explanation of various case alternations based on proto role entailments. In conclusion, I will argue that the accusative *ul/lul* is related to certain types of semantic interpretations which characterize objecthood. This kind of direct many to one mapping between syntax and semantics accords with the language universal tendency of grammatical argument realization.

³By the notion of case alternation, I mean different constructions which have the same syntactic features except for the case realization of an argument. However, I do not assume any derivative relations to exist among these constructions by means of transformations or other similar mechanisms.

2. Case Alternations and Thematic Roles

In this section, I will introduce some case alternations and point out that the previous thematic role theories based on individual role type do not provide correct explanations for alternations between *ul/lul* and other postpositions, which share similar semantic properties. It is well known that *ul/lul* attaches to the direct object NP of which thematic role type has been interpreted as a Theme, i.e., an affected object (or Patient). When we consider various syntactic patterns of case alternation between *ul/lul* and other postpositions involving similar entailments of an argument, the generalization that a Theme is realized as the direct object cannot be maintained. Let's consider the following examples:⁴

- (6) Mary ka thrayk eyse/ ul ttwi ess ta.
Mary ka track at/ Acc run Past Ending
'Mary ran in the track.'
- (7) John i pyek e/ ul pheyint lul chilha yess ta.
John Nom wall at/ Acc paint Acc spray Past Ending
'John sprayed the paint on the wall.'
- (8) John i Mary wa/ ul mana ass ta.
John Nom Mary with/ Acc meet Past Ending
'John met Mary.'

As we see in the above examples, grammatical conditions between case alternants are very similar except case marking of certain arguments. The objecthood of the NP *ul/lul* in the above examples is hard to be determined; the accusative NPs of these

⁴Here I am not concerned with the subtle meaning differences.

constructions cannot be realized as the subjects of the passive sentences.

- (9) *thrayk i Mary eyuyhayse ttyue ci ess ta.
track Nom Mary by run Pass Past Ending
- (10) a. *pyek i John eyuyhayse pheyint lul chilha yeci ess ta.
wall Nom John by paint Acc spray Pass Past Ending
b. *pheyint ka John eyuyhayse pyek ul chilha yeci ess ta.
paint Nom John by wall Acc spray Pass Past Ending
- (11) *Mary ka John eyuyhayse manna ci ess ta.
Mary Nom John by meet Pass Past Ending

Case dropping does not work in these constructions either, since we cannot distinguish which postposition drops from the internal argument. Focusing on these properties, we can simply claim that the mapping between semantic roles and syntactic arguments for each verb is rather flexible. Thus, the same thematic role can be syntactically realized in two different ways. The flexible mapping assumption, however, restricts us only to describing the facts without providing an explanation or prediction, even though there exists a systematic meaning contrast caused by the alternation. For a desirable theoretical approach, we need to generalize the distinct semantic patterns among the alternants and explain what factors lead to different syntactic argument configurations. In this respect, the flexible mapping approach is rather ad hoc.

There have been a variety of proposals for capturing the relation between lexicosemantic properties and morphosyntactic realizations, but previous theories tend to put more stress on the syntactic side.⁵ After the traditional conception of thematic

relations was introduced by Gruber (1965), the list of Agent, Theme, Location, Source, and Goal has been assumed as a language universal without agreement on a finite set of thematic roles, as Dowty (1991) points out. Especially, many syntacticians within the GB framework have used traditional thematic role types for structural mapping of arguments in D structure through the Theta Criterion, which imposes a one to one association between thematic roles and arguments. The notion of thematic roles within this theory is incomplete and oversimplified since it has been accepted by taking an argument indexing approach. In this process, the fundamental problems of semantic properties, classification and syntactic realization with respect to a thematic role type have been ignored. The accusative *ul/lul* has been treated as a pure structural case marker combined with an argument whose thematic role is a Theme. Semantic generalization of an object NP is not fully discussed by interpreting transitivity as just having a direct object.

Furthermore, in order to provide an efficient linking theory, a thematic hierarchy has been assumed as a mechanism for mapping between semantics and syntax (Grimshaw (1990), Rappaport and Levin (1989), Jackendoff (1972, 1990)).⁵ This

⁵Some researchers such as Im (1998) and Lee (1988) distinguish structural case from semantic case with respect to case marker 'ul/lul'. They use some semantic properties of objectivity and topicalization for explaining the distribution of 'ul/lul'. According to Tenny (1992), Hong (1995) suggests that the realization of 'ul/lul' in movement verb constructions is based on affectedness, which can be defined as the property of a verb. While these approaches attempt to characterize semantic properties relevant to accusative case realization, they still depend on thematic role type theory. Also they do not provide systematic analysis of semantic entailments based on lexical properties of a predicate and its arguments.

⁶In Pollard and Sag (1994), the syntactic arguments of a verb appears based on the obliqueness hierarchy and the thematic roles are represented in the semantic content. Linking is effected through coindexation between each

hierarchy has been motivated with respect to specific syntactic phenomena such as binding and control. Syntactic arguments are arranged in a corresponding thematic role hierarchy in these linking theories. For example, Grimshaw (1990) proposes the following version:

(12) Agent > Experiencer > Goal/Source/Location > Theme

According to her, the most prominent argument in argument structure is syntactically realized in the most prominent position, the subject position. This analysis is rather restrictive since she assumes that syntactic realization is determined without direct reference to thematic information. She claims that argument structure rules are stated after determining thematic role types of arguments. Therefore semantic information is indirectly mapped into the syntactic configuration according to the thematic role hierarchy. A serious problem is that thematic hierarchy approaches employ the conception of thematic role type, so they encompass empirical difficulties in finding out a set of role types well motivated enough to capture the exact argument configuration.

Case alternations in Korean also specify the problem of thematic role type approaches. In examples (6) (8), the internal arguments of case alternations can be interpreted as having dual or unclear status because there are overlapping entailments among the case alternating NPs. Let's consider the example (7). With the accusative cases *ul/lul*, the object *pyek* still represents

argument and its corresponding role. This seems to be similar to linking theory within GB theory, but since it assumes a monostratal level of syntactic structure, grammatical categories can be directly connected to explicit semantic level information.

a Goal like *pyek ey* and it is the object which changes state as a result of the event, which belongs to properties of Theme. In one to one mapping approaches utilizing role types, it is not allowed to assign dual status to an argument. Therefore, the role type approaches cannot explain these overlapping entailments of the internal argument in case alternations. Another point we need to note is that there are subtle meaning differences among the case alternants, which can hardly be captured by depending on the previous thematic role theories. Discussing the problems relevant to the logical type of individual thematic role, Dowty (1991) provides quite convincing evidence for linking based on lexical entailments within model theoretic semantics. Accepting his arguments, Yoo and Lee (1996) utilizes semantic entailment based analysis for case alternation phenomena in Korean. Extending their arguments with respect to accusative case realization, here I claim that syntactic argument realization is related to a certain type of semantic entailments, rather than determined by an individual role in thematic hierarchy. This belongs to a direct linking theory without any intervening individual thematic role types. I will summarize this in section 3.

Before we move on, we can consider defending traditional role types by simply arguing that *pyek e* 'wall at' is a Goal and *pyek ul* 'wall Acc' is a Theme. This argument is based on the assumed approaches by simply arguing that each thematic role corresponds to a particular case marker in Korean. In other words, it hypothesizes that every postposition is related to a distinct thematic role type through a one to one mapping, so we can automatically identify the thematic role by a case marker or a postposition. However, this analysis can be easily refuted by considering the argument realization facts that a Theme is not

always realized as the direct object as in middle verb constructions and that a Location appears in the subject position in Korean.⁷ This suggests that the argument for one to one relation between a case marker (or a postposition) and a thematic role type cannot be maintained.

The complex patterns of grammatical realization in case alternations cannot be explained by a nondecomposable thematic role type hypothesis. As an alternative, I propose Dowty's (1991) lexical entailment based account which is more promising for capturing the meaning difference in case alternations.⁸

⁷The following examples have been called the locative subject constructions.

- (i) a. I san-i namu-ka manhta.
 this mountain-Nom trees-Nom be many
 'This mountain has many trees.'
 b. I san-ey namu-ka manhta.
 this mountain-Loc trees-Nom be many

⁸I do not argue that the structural case assignment can be entirely replaced by the case realization by the semantic entailment of proto-roles. One counterexample comes from the light verb *hata* constructions in Korean. A light verb performs a functional role as a predicate without selecting its arguments in verbal noun constructions.

- (i) John-i yenge-lul kongpwu-lul hanta.
 John-Nom English-Acc study-Acc does
 'John studies English.'

In this construction, the verbal noun *kongpwu* takes the accusative marker, but I cannot find any semantic properties of this argument delegated to the verb *hata*. This fact stems from the properties of the verbal noun *kongpwu* which works as an actual predicate. The light verb *hata* does not assign any selectional restrictions to the preceding verbal noun. Thus semantic entailments of the verbal noun cannot be found based on the light verb. In contrast, the accusative NP *yenge-lul* show some specific Proto-Patient properties relevant to the event of studying, so it is interpreted as a Theme following the approach of thematic role type.

We need to note that the semantic entailments can characterize the general properties of case realization on the object NPs, which seem to work as default mechanism for lexical acquisition but that there still exists the structural case

3. Proto-Thematic Roles and Argument Selection

Accepting Rosche and Mervis's (1975) prototypes formed by family resemblance,⁹ Dowty (1991) proposes two kinds of proto role properties, Proto Agent and Proto Patient on the basis of lexical entailments within the model theoretic semantics. These properties are cluster concepts involved in argument selection and act as semantic defaults in the acquisition of lexical meaning. Furthermore, he suggests that these proto roles work as semantic defaults in the acquisition of meaning. Since the properties are prototypical, no single property is essential for either role. The following are the specific properties Dowty (1991) gives:

- (13) Contributing properties for the Agent Proto Role
 - a. volitional involvement in the event or state
 - b. sentience (and/or perception)
 - c. causing an event or change of state in other participant
 - d. movement (relative to the position of another participant)
 - (e. exists independently of the event named by the verb)
- (14) Contributing properties for the Patient Proto Role
 - a. undergoes change of state
 - b. incremental theme
 - c. causally affected by another participant
 - d. stationary relative to movement of another participant

assignment phenomena that cannot be semantically handled.

⁹Rosche and Mervis (1975) argue that family resemblance is a part of the general process of category formation and account for prototypes in terms of distributions of discrete attributes. By accepting this probabilistic view, Dowty (1991) assumes that arguments have 'a different degree of membership in a role type'.

(e. does not exist independently of the event, or not at all)

These semantic properties are involved in grammatical argument realization. Dowty (1991) introduces the following Argument Selection Principle including two additional corollaries.¹⁰

(15) Argument Selection Principle

In predicates with grammatical subject and object, the argument for which the predicate entails the greatest number of Proto Agent properties will be lexicalized as the subject of the predicate: the argument having the greatest number of Proto Patient entailments will be lexicalized as the direct object.

According to the Argument Selection Principle, the subject and the object of a verb are dependent upon the numerical comparison of numbers of entailments. The subject has the greatest number of Proto Agent roles while the object bears the greatest number of Proto Patient entailments. Using this principle, we can explain the grammatical realization of semantic arguments. Let's consider the following example:

¹⁰The corollaries are as follows:

- (i) Corollary 1: If two arguments of a relation have (approximately) equal numbers of entailed Proto-Agent and Proto-Patient properties, then either or both may be lexicalized as the subject (and similarly for objects).
- (ii) Corollary 2: With a three-place predicate, the nonsubject argument having the greater number of entailed Proto-Patient properties will be lexicalized as the direct object and the nonsubject argument having fewer entailed Proto-Patient properties will be lexicalized as oblique or prepositional object (and if two nonsubject arguments have approximately equal numbers of entailed P-Patient properties either or both may be lexicalized as direct object).

- (16) John i kong ul cha ass ta.
John Nom ball Acc kick Past Ending
'John kicked the ball.'

According to traditional thematic role theories that we discussed in the previous section, the subject *John* and object *kong* are each assigned Agent and Theme. The thematic hierarchy can be used for linking. This approach, however, does not provide an adequate explanation for mapping, since thematic role boundaries are not always clear cut and thematic hierarchy based on role type is not fully applicable to explain the linking phenomena as we have seen in the previous section.¹¹

The probabilistic account of argument selection depending on comparing the number of properties predicts that *John* is realized as the subject since it has the greatest number of Proto Agent properties including volition, causing an event, and movement. The object *kong* has the greatest number of Proto Patient properties: to undergo the change of state and be caused affectively by another participant.

One notable thing is that the Argument Selection Principle does not derive the grammatical realization of arguments but

¹¹Another example that the hierarchy cannot capture is that the Experiencer argument of the verb *frighten* appears in the object position while Stimulus appears in the subject position. This violates the thematic role hierarchy. For this, Grimshaw (1990) uses aspectual analysis in addition to thematic hierarchy. According to her, the aspectual hierarchy determines which argument gets realized as the subject. For the *frighten* class, the Theme instead of the Experiencer is aspectually prominent. The idea is that an argument which participates in the first sub-event in an event structure is more prominent than an argument which participates in the second subevent. Aspectual analysis is used for various verb classes such as the *frighten* class, unaccusatives, agentive psychological verbs etc. This approach assumes indirect mapping by intervening individual thematic roles. As we have already seen in section 2, overlapping entailments of case alternation phenomena cannot be correctly explained by this approach.

captures the patterns of argument realization. As Dowty (1991) emphasizes, the argument selection hypothesis is a strong tendency and is determined by syntactic and semantic properties of a predicate. On the basis of semantic entailments and subcategorization of a verb, we can figure out how many arguments syntactically appear. Then Argument Selection Principle captures the concrete mapping patterns of the participants. In other words, the association of subject with Proto Agent and object with Proto Patient is not a necessary relation but generalized patterns of argument realization. The Proto Patient argument can be syntactically realized in the subject or oblique argument position, depending on the argument configuration of a verb. proto role theory does not fully predict or derive the actual syntactic argument realization.

By classifying arguments as cluster concepts of Proto Agents and Proto Patients, this approach equips the theory with a more flexible tool for generalizing a group of entailments of arguments or specifying subtle meaning differences. Since there is no level where thematic roles are explicitly represented, it provides parsimonious linking, which is theoretically desirable. Therefore, we can provide a more accurate analysis of case alternation phenomena through proto role hypothesis.

4. Case Alternations within Proto-Role Theory

In this chapter, I will analyze some case alternation phenomena between the accusative *ul/lul* and other postpositions in terms of semantic entailments. Semantic generalization of *NP ul/lul* can be provided by examining Proto Patient entailments, which manifest the objecthood of the NP.

4.1. Locative Alternation and Incremental Theme

There are two types of locative alternation: one involves variation between a locative postposition and *ul/lul*, and the other involves a more complex pattern between either or both locative and implement postpositions. With respect to English locative alternation, a "holistic/partitive effect" or affected interpretation has been noted by many researchers (Levin (1993)). The same kind of interpretation is observed in Korean but there is a semantic distinction which cannot be captured by affectedness. Let us consider the following examples.

4.1.1. Locative-Accusative Alternations

- (17) pihayngki ka Kimphokonghang eyse ttena ass ta.
the plane Nom Kimpo airport from leave Past Ending
'The plane left from Kimpo airport.'
- (18) pihayngki ka Kimphokonghang ul ttena ass ta .
the plane Nom Kimpo airport Acc leave Past Ending
'The plane left Kimpo airport.'

In the above examples, oblique case marker *eyse* which represents Location has a correspondent which takes the accusative *ul/lul* in the same NP. The latter can be classified as an object since it is subcategorized by the following verb. In regard to the above case alternations, Hong (1987) argues that *ul/lul* which replaces the locative *eyse* works as a focus or topic marker but not the accusative case marker. Furthermore, he excludes *ul/lul* in every case alternation construction from the accusative marker. The problem is that he does not explain what

factors introduce *ul/lul* as a topic or focus marker and why *ul/lul* do not replace some case markers and postpositions which are combined with adjuncts.

- (19) a. *i cipwung eyse mwul i saynta.*
 this roof from water Nom leak
 'Water leaks from the roof.'
- b. **i cipwung ul mwul i saynta.*
 this roof Acc water Nom leak
- c. *i cipwung eyse nun mwul i saynta.*
 this roof from Top water Nom leak
- (20) a. *John i hakkyo eyse wusessta.*
 John Nom school at laughed
 'John laughed at the school.'
- b. **John i hakkyo ul wusessta.*
 John i school Acc laughed.
- c. *John i hakkyo eyse nun wusessta.*
 John Nom school at Top laughed

As we see in the above sentences, if *ul/lul* were a focus or topic marker, there would be no reason why it does not combine with the definite NPs by replacing the locative *eyse* as in (19b). Also, if *ul/lul* functions as a focus or topic marker, it should be attached to the adjunct NP by replacing the postposition in (20b). In contrast, the topic marker *nun* can be attached to these NPs. Unless Hong's analysis provides a satisfactory answer for what kind of discourse factors draw the above case alternation or how focus or topic NP *ul/lul* can be differentiated from the object NP *ul/lul*, *ul/lul* in case alternations cannot be differentiated from that of other constructions.¹²

In the traditional grammar, the accusative marker is realized according to the transitivity relation between a verb and its participants. Hopper and Thompson (1980) propose that "the grammatical or semantic markings of transitivity covary in the clause in the same direction with respect to cardinal transitivity." Cardinal transitivity is determined by language universal parameters such as participants, volitionality, aspect, etc.¹² If we consider the properties of *NP ul/lul*, we can see that they rank high on the scale of transitivity. This theory is similar to the proto role hypothesis, in that it assumes transitivity as a continuum which is similar to a prototypical concept determined by a number of properties. Their argument, nevertheless, cannot predict the mapping relation between semantic interpretation and argument realization. A linking theory should answer the question how a participant is realized as the subject or the

¹²I do not deny the possibility that *ul/lul* works as a topic or a focus marker in certain contexts, though. For example, *ul/lul* can intervene between verbal clusters. In this case, it seems to work as a focus marker.

- (i) John-i Mary-lul kakey-lul hayssta.
 John-Nom Mary-Acc to go-Acc made
 'John made Mary go.'

¹³Hopper and Thomson (1980) provides the following parameters of a transitivity.

	High Transitivity	Low Transitivity
A. Participants	two participants or more(A and O)	1 participants
B. Kinesis	action	nonaction
C. Aspect	telic	atelic
D. Punctuality	punctual	nonpunctual
E. Volitionality	volitional	nonvolitional
F. Affirmation	affirmative	negative
G. Mode	realis	irrealise
H. Agency	A high in potency	A low in potency
I. Affectedness of O	O totally affected	O not affected
J. Individuation of O	O highly individuation	O nonindividuated

object, however their theory only predicts the presence or absence of an object. Hence, it is not enough to explain the different argument configurations driven by semantic distinctions.

To capture the subtle meaning difference in the above case alternations, we can apply Dowty's proto role properties which are related to the grammatical realization: *NP ul/hul* in (18) is interpreted as having change of state and being stationary relative to movement of another participant, Proto Patient properties contrasting with those of *NP eyse*. This explanation is rather similar to Hopper and Thompson's (1982) approach. The greater accuracy and theoretical sophistication of the proto role approach is evident from the following data:

- (21) a. Mary ka wudongcang eyse ttwi ess ta
Mary ka playground in run Past Ending
'Mary ran in the playground.'
- b. Mary ka wudongcang ul ttwi ess ta.
Mary ka playground Acc run Past Ending
'Mary ran around the playground.'

When the accusative marker is combined with an NP in the above example, one of the entailments we can get is the Proto Patient entailment of Incremental Theme which Dowty (1991) introduces. It is formally defined on the basis of "the principle that the meaning of a telic predicate is a homomorphism from its (structured) theme argument denotations into a (structured) domain of events." Simply put, a verbal expression is telic if its denotation includes a terminal point. If it does not, it is an atelic predicate.

Krifka (1992) analyzes telic predicates as quantized event

predicates and atelic predicates as strictly cumulative event predicates. For example, two events of running together form an event of running. This cumulativity shows that the verb *ttwita* 'run' is an atelic event predicate. For telic predicates, if we consider an event of running a mile, no proper part of it can be an event of running a mile. He assumes a homomorphism from object to event which preserves the lattice structure based on the properties of the thematic relation between events and objects. This explains why durative adverbials like *for an hour* combine with atelic predicates, while time span adverbials like *in an hour* select for telic predicates.

Durative adverbials are applied to strictly cumulative verbal predicates, while time span adverbials are applied to atomic verbal predicates. Telic predicates which are quantized predicates are atomic but not strictly cumulative. Hence they can be combined with time span adverbials. In the case of atelic predicates, since they are strictly cumulative, they can be combined with durative adverbials. Quantized objects in telic predicates, however, are interpreted as Incremental Themes. For detailed discussion, the reader is referred to Krifka (1992). Dowty categorizes these quantized NPs as Incremental Themes including traditional 'effected' objects, 'destroyed' objects and objects entailed to undergo a definite change of state.

The Incremental Theme analysis of *NP ul/lul* in the above example is supported by the fact that the time span adverbial *hansikan maney* 'in an hour' which cooccurs only with a telic predicate appears with *NP ul/lul* but not with *NP eyse* while durative adverbial *hansikan naynay* 'for an hour' appears with both of them.

- (22) a. Mary ka wudongcang eyse han sikan naynay ttwi ess ta.
 Mary Nom playground in one hour for run Past Ending
 'Mary ran in the playground for an hour.'
- b. *Mary ka wudongcang eyse han sikan maney ttwi ess ta.
 Mary Nom playground in one hour in run Past Ending
 'Mary ran in the playground in an hour.'
- (23) a. Mary ka wudongcang ul han sikan naynay ttwi ess ta.
 Mary Nom playground Acc an hour for run Past Ending
 'Mary ran around the playground for an hour.'
- b. Mary ka wudongcang ul han sikan maney ttwi ess ta.
 Mary ka playground Acc an hour in run Past Ending
 'Mary ran around the playground in an hour.'

As we see in (22), a time span adverbial cannot be combined with a predicate which is strictly cumulative. Only when the running event is understood to cover a certain amount of the playground in (23), a time span adverbial can be used. Actually we cannot use the accusative *ul/lul* when Mary is running in place without moving around. A certain amount of the playground which Mary covered corresponds to a certain amount of running in (23). Krifka classifies this kind of thematic relation in terms of *graduality*. It comprises uniqueness of objects, mapping to objects and mapping to events, which he provides for characterizing a homomorphism from objects to events.¹⁴ A

¹⁴Those characterizations are as follows:

- (i) $\forall R[\text{UNI-O}(R) \leftrightarrow \forall e, x, x'[R(e,x) \wedge R(e,x') \rightarrow x = x']]$
 (uniqueness of objects)
- (ii) $\forall R[\text{MAP-O}(R) \leftrightarrow \forall e, e', x'[R(e,x) \wedge e' \sqsubset e \rightarrow \exists x'[x' \sqsubset x \wedge R(e',x')]]]$
 (mapping to objects)
- (iii) $\forall R[\text{MAP-E}(R) \leftrightarrow \forall e, x, x'[R(e, x) \wedge x' \sqsubset x \rightarrow \exists e'[e' \sqsubset e \wedge R(e',x')]]]$
 (mapping to events)

Time span adverbial *han sikan maney* 'in an hour' selects for a telic predicate which is atomic, so it appears in (23). When the sentence has the atelic interpretation that Mary is not running around but is moving her legs and body repeatedly occupying a certain position (as, for example, on a stationary jogging machine), *han sikan maney* cannot be combined with the predicate. In *NP eyse* constructions like those in (22), the time span adverbials can be allowed only if the sentences have initiative interpretations. This fact is predictable since the time span adverbials presuppose that the verbal predicates which they are combined with are atomic.

The restricted compatibility of a time span adverbial and *NP ul/lul* supports the hypothesis that the *NP ul/lul* belongs to a quantized object, i.e., Incremental Theme. Proto Patient Properties of Incremental Theme and affectedness semantically distinguish *NP ul/lul* from *NP eyse* in locative accusative case alternating constructions. These properties semantically characterize the objecthood taking the accusative case marker 'ul/lul'.

4.1.2. Spray/Load Type Alternations

There is more complicated pattern of locative alternations containing two different sort of case alternations in English.

- (24) a. John sprayed (the) paint onto the wall.
b. John sprayed the wall with (the) paint.

The argument *wundongcang-ul* is wholly affected as a unique object and the amount of object which is affected exactly corresponds to the amount of running event. Since the argument shows all three properties of graduality, we can find out that thematic interpretations of *wundongcang-ul* imply gradual affectedness.

- (25) a. John loaded the hay onto the truck.
 b. John loaded the truck with (the) hay.

In the above constructions, either of two internal arguments can be the direct object. As Dowty (1991) points out the direct objects in these constructions have Proto Patient entailments and belong to Incremental Themes, which determine the aspect of the sentence by measuring out the event as we have seen in the previous section. Similarly, Tenny (1992) argues that whether a verb undergoes this kind of alternation depends on particular semantic properties of both internal arguments. According to her, two internal arguments are loosely described as a Goal *wall/truck* and a Theme *paint/hay*: the Goal must be a flat surface or container and the Theme must be a material which is removed or applied to that surface or container. The alternation is possible where the verb has two arguments that can be understood to mutually measure out the event. Similar fact exists in Korean.

- (26) a. John i threk ey ssal ul sil ess ta.
 John Nom truck onto rice Acc load Past Ending
 'John loaded the rice onto the truck.'
 b. John i threk ul ssal lo sil ess ta.
 John Nom truck Acc rice Acc load Past Ending
 'John loaded the truck with rice.'
- (27) a. John i pyek ey pheynt lo chilha yess ta.
 John Nom wall on paint with spray Past Ending
 'John sprayed the paint on the wall.'
 b. John i pyek ul peint lo chilha yess ta.
 John Nom wall Acc paint with spray Past Ending

'John sprayed the wall with paint.'

As in English, NPs with the accusative marker *ul/lul* are constrained to measure out the event described by the verb. The direct object measures out the event described by the verb, so *ssal ul* 'rice Acc' is interpreted as an affected object in (26a). The extent of loading is determined by the amount of rice that is loaded. In (26b), the event of loading is measured depending on whether the truck is partially or completely full of rice. These NPs belong to Incremental Theme. Since *trek ul* 'truck Acc' is an Incremental Theme which changes state in (26b), if the element in the oblique NP cannot spread over the container, the sentence is ungrammatical.

- (28) a. *John i threk ul han thong uy mwul lo sil ess ta.
John Nom truck Acc one barrel of water with load Past Ending
'John loaded the truck with one barrel of water.'
- b. John i threk ey han thong uy mwul ul sil ess ta.
John Nom truck at one barrel of water Acc load Past Ending
'John loaded one barrel of water onto the truck.'

With only one barrel of water, it is not enough to spread over the truck, so *trek ul* 'truck Acc' cannot be interpreted as changing the state which determines the event of loading in (28a). In (28b), however, *trek ey* 'truck at' refers to just location and *han tong uy mwul ul* 'one barrel of water Acc' itself is the affected object. Thus, there is no restriction between location *trek ey* and the material expression. These phenomena are related to the Incremental Theme entailment. An argument can be realized as a direct object when it has the Proto Patient

entailment of Incremental Theme in the locative alternation. Furthermore, both of the arguments can have accusative case in Korean. The same number of Proto Patient properties seem to allow double accusative constructions in Korean unlike English.

- (29) a. John i threk ul ssal ul sil ess ta.
 John Nom truck Acc rice Acc load Past Ending
 'John loaded the truck (with) the rice.'
- b. John i pyek ul pheyint lul chilha yess ta.
 John Nom wall Acc paint Acc spray Past Ending
 'John sprayed the wall (with) the paint.'

Note that the element with more Proto Patient properties tends to take *ul/lul*. We can confirm that *NP ul/lul* works as the object of a sentence since it accords with language universal phenomena that Proto Patients are realized as direct objects contrasting other propositions. The semantic relevance between Proto Patient role and the accusative *ul/lul* suggests that semantic information affects grammatical realization.

4.2. The Nominative-Accusative Alternation

There are interesting case alternations between the nominative *i/ka* and the accusative *ul/lul* in the passives. In Korean, the lexical passive verbs are formed by attaching to a transitive verb stem some morphological forms such as *i*, *hi*, *li*, *ci* as follows.

- (30) a. Mary ka John ul cap ass ta.
 Mary Nom John Acc catch Past Ending

- 'Mary caught John.'
- b. John i Mary eykey cap hi ess ta.
 John i Mary Dat catch Pass Past Ending
 'John was caught by Mary.'

Generally, it is known that the accusative marker cannot appear in passive sentences. In the following Passive constructions, however, the accusative case can be found.

- (31) a. John i Mary eykey son i cap hi ess ta.
 John Nom Mary by hand Nom held Pass Past Ending
 'John was caught by the hand by Mary.'
- b. John i Mary eykey son ul cap hi ess ta.
 John Nom Mary by hand Acc catch Pass Past Ending
 'John was caught by the hand by Mary.'
- (32) a. Mary ka John eykey pal i palp hi ess ta.
 Mary Nom John by foot Nom step on Pass Past Ending
 'Mary's foot was stepped on by John.'
- b. Mary ka John eykey pal ul palp hi ess ta.
 Mary Nom John by foot Acc step on Pass Past Ending
 'Mary's foot was stepped on by John.'

Within the transformational approach focusing on the case assigning ability of a verb, the occurrence of the accusative NP in the passives cannot be explained.¹⁵ It can be argued that there are two different verbs: one belonging to the passives, and the other belonging to the actives. This argument is inelegant because there is a close relationship between these constructions

¹⁵On this approach, in the passive construction a transitive verb lacks the accusative case assigning ability, so the object moves to the subject position.

with respect to the morphological forms of the verb and the meanings of the sentences.

One of the properties in the above nominative accusative case alternation is that the case alternating NPs have the possessor and body part relation with respect to the subject NPs. This kind of NP relationship can be found in multiple subject or multiple object constructions. The NPs in these constructions have been assumed to work as a single syntactic unit. We can determine this property through fixed word ordering of NPs; the possessor NP always precedes the body part NP.¹⁶

- (33) a. Mary ka son i John eykey cap hi ess ta.
Mary Nom hand Nom John by catch Pass Past Ending
'Mary's hand was caught by John.'
- b. *Son i Mary ka John eykey cap hi ess ta.
hand Nom Mary Nom John by catch Pass Past Ending

While NPs with inalienable possession relations can generally appear in the multiple subject/object constructions in Korean, not all of the passive sentences containing multiple nominative NPs show case alternation between the nominative case and the accusative case for body part NPs.

- (34) a. John i tongsayng i kyengchal ey cap hi ess ta.
John Nom brother Nom police by arrest Pass Past Ending
'John's brother was arrested by the police.'

¹⁶The body part NP can precede its possessor NP in the context that the speaker already mentioned the proposition and wants to put focus on the body part NP. If we exclude contextual factors like this, the ordering between the possessor NP and the body-part NP cannot be changed.

b. *John i tongsayng ul kyengchal ey cap hi ess ta.¹⁷

John Nom brother Acc police by arrest Pass Past Ending

As we see in the above example, only strict possessor and body part relations allows the case alternations in the passives. Inalienable possession can be considered to be an inherent semantic features of lexico semantic groups including kinship and body part terms as well as relational nouns according to Velazquez Castillo(1996).¹⁸ The nominal relation of the case

¹⁷We need to distinguish the causative verb from the passive verb *caphta*, which takes the same morphological form.

- (i) John-i ai-eykey yenphil-ul cap -hi -ess -ta.
John-Nom a child-Dative a pencil-Acc catch-Caus-Past-Ending
'John caused a child catch a pencil.'

In the case of causative constructions, there is no necessary semantic relation of possessor and body-part between the subject NP and the following *NP-lul* unlike the passives.

¹⁸Velazquez-Castillo(1996) suggests that inalienability is subjectively defined and that it is a complex category of several semantic elements, all clustering around a prototype. This is strongly associated with certain lexico-semantic categories characterized by inherent relationship. Language universally, this relationship seems to cause the conventionalization of the possessive marker but in Korean, multiple subject/object constructions may manifest this semantic distinction. There has been a proposal of Possessor Ascension especially within the relational grammar based on inalienable possession. Possessor Ascension is the operation which converts a possessor into a subject or direct object. This notion is adopted in transformational grammar and used for explaining multiple subject/object constructions. This approach, however, cannot explain the following multiple subject constructions where possessive NPs are not allowed.

- (i) a. John-i ton-i epsta.
John-Nom money-Nom lack
'John lacks money.'
b. *John-uy ton-i epsta.
John-Gen money-Nom lack
(ii) a. John-i kekceng-i sayngkyessta.
John-Nom worry-Nom got
'John became worried.'

alternating passives is limited to body part terms, it is more restricted than in the multiple subject sentences. Also the possessor NP should be animate. When an inanimate nominal appears as the subject, its body part NPs cannot have the accusative case.

- (35) a. cip i palam ey changmwun i pwuswe ci ess ta.
house Nom wind by window Nom break Pass Past Ending
'The window of the house was broken by the wind.'
- b. *cip i palam ey changmwun ul pwuswe ci ess ta.
house Nom wind by window Acc break Pass Past Ending

Even though there exists the possessor and body part relation between the inanimate NP and the following body part NP in (35), the case alternation as in (35b) is impossible.¹⁹

-
- b. *John-uy kekceng-i sayngkyessta.
John-Gen worry-Nom get

The structures of multiple subject/object constructions is a very interesting phenomena which involves various semantic relation among case sharing arguments. Another candidate for explaining the formation of these constructions is Fillmore's (1977) saliency hierarchy. According to him a speaker chooses to put a participant into perspective in a certain situation and makes it salient. This perspectivizing corresponds to determining the structuring of a clause in terms of the nuclear grammatical relations. It can predict which element, sharing inalienable possession appears as the subject by comparing it with corresponding case alternation constructions such as possessive NPs'. However since it is not a main topic here, I will limit myself suggesting these possibilities.

¹⁹There seems to be an exception to this generalization.

- (i) a. Twittul-uy namwu-ka kaci-ka cal-li-ess-ta.
backyard-of tree-Nom branch-Nom cut-Passive-Past-Ending
'A branch of the tree in the backyard was cut.'
- b. Twittul-uy namwu-ka kaci-lul cal-li-ess-ta.
backyard-of tree-Nom branch-Acc cut-Passive-Past-Ending
'The tree in the backyard was cut the branch.'

This kind of exception seems to be accepted because the speaker interprets,

To explain the morphosyntactic appearance of the accusative case in the passives, Kang (1986) assumes two structural accusative case marking rules of an NP argument within GB theory as follows.

- (36) An NP argument which is a sister of [stative] V is assigned Accusative Case in the course of derivation from D structure to S structure.
- (37) Nominative Case is assigned to all non Case marked NPs.

According to Kang, passive verbs such as *caphita* 'caught' in the above examples are ambiguous as either [stative] or [+stative]. The [stative] verb *caphita* assigns the accusative case to the body part NP while the [+stative] assigns nominative case according to structural case assigning rules. This approach is rather ad hoc since it just attributes the case marking to verb specific features without capturing the generalization of semantic entailments between a verb and its argument. Depending on the pure structural case realization analysis, the definition of objecthood causes the same problem as we have seen.

Given the animacy of the subject NP, I suggest that the thematic role of the subject NP can be differentiated from the body part NPs since the subject NP has the property of sentience. This property is related to the traditional thematic role of Patient or Experiencer.²⁰ Also, in the above sentences, the verbs entail that the final event always affects the possessor

semantically, the subject *namwu* 'trees' to share a kind of animacy.

²⁰Dowty(1991) argues that the traditional role of Patient can be distinguished from the broader Theme by the entailment of causally affectedness.

through semantic relationship between the possessor and its body parts. This property makes it possible to derive different grammatical realization of them by taking the body part NPs with the accusative case. In the accusative construction, the subject NP have clear volition which is one of the Proto Agent Properties. The cooccurrence of the adverbial *ilpwule* 'deliberately' which entails the Agentivity of the subject, supports this argument.

- (38) a. *John i Mary eykey ilpwule son i cap hi ess ta.
 John Nom Mary by intentionally hand Nom catch Pass Past Ending
 'John intentionally had his hands caught by Mary.'
- b. John i Mary eykey ilpwule son ul cap hi ess ta.
 John Nom Mary by intentionally hand Acc catch Pass Past Ending
- (39) a. *Mary ka John eykey ilpwule pal i palp hi ess ta.
 Mary Nom John by intentionally foot Nom step on Pass Past Ending
 'Mary had intentionally had her foot stepped on by John.'
- b. Mary ka John eykey ilpwule pal ul palp hi ess ta.
 Mary Nom John by intentionally foot Acc step on Pass Past Ending

As we see in the above examples, while the volitional adverb *ilpwule* 'intentionally' cannot appear in the nominative body part NP constructions, it can occur in the accusative constructions. This shows that the entailments of the subject NP have more Proto Agent properties than its body part NPs in the passives. This semantic contrast is represented in grammar through different case marking. When participants are interpreted as a simple possessor and body parts, there is no case realization among these elements. If a participant is interpreted as an individual which shows more Proto Agent properties, its body

part NPs take the accusative case. Consequently, the Proto Agent properties, contrasting with Proto Patient properties of the body part nominals, lead to different case alternations in these arguments.²¹ With these semantic interpretations, we can clearly capture the subtle difference in the above case alternation rather than just illustrating a list of the subcategorization frames. The similar fact is observed in the unaccusative constructions whose arguments have the relationship of a possessor and body parts.

(40) Mary ka meli ka/ lul tachi ess ta.
 Mary Nom head Nom/ Acc hurt Past Ending
 'Mary' head hurt.'

(41) Mary ka palmok i/ ul ppi ess ta.
 Mary Nom ankle Nom/ Acc twist Past Ending.
 'Mary's ankle twisted.'

Unaccusative verbs are verbs whose sole argument is an internal argument according to the unaccusative hypothesis of Perlmutter (1978) and Tenny (1992). Unaccusative verbs describe a situation in which the argument undergoes some kind of change and this contrast with unergative verbs whose argument involves volitional activity. According to this hypothesis, the subjects of unaccusative verbs are syntactically derived from underlying direct objects. This is similar to the explanation of passivization. As in the above passives, realization of the accusative case marker poses a problem for the unaccusative hypothesis, in which an accusative verb does not assign the

²¹With respect to the nominative passives including multiple subject constructions, the whole arguments seems to be treated as a single unit.

accusative case to internal argument.²²

As in the passives, the volitional adverb *ilpwule* 'intentionally' appears with *NP lul* in the following unaccusative constructions:

- (42) a. *Mary ka meli ka ilpwule tachi ess ta.
Mary Nom head ka intentionally hurt Past Ending
'Mary had intentionally hurt her head.'
- b. Mary ka meli lul ilpwule tachi ess ta.
Mary Nom head Acc intentionally hurt Past Ending

The case alternations of *i/ka* and *ul/lul* in the unaccusative constructions can be explained by the same semantic entailments of the proto roles hypothesis as in the passives. Depending on a pure structural analysis without a fundamental relation between syntax and semantics, the occurrence of the accusative case in these constructions cannot be explained. proto role theory based on Argument Selection Principle successfully captures the interface phenomena of grammatical realization.

4.3. Other Case Alternations

There are a few other examples in which proto role entailments affect the syntactic argument realization. Partially symmetric interactive verbs show case alternation between reciprocal postposition *wa* and the accusative case.

²²Dowty (1991) analyzes the unaccusative-unergative distinction semantically by the proto-roles hypothesis questioning the pure syntactic approach of argument advancement.

- (43) a. John i Mary wa cohaha n ta.
 John Nom Mary with like Pres Ending
 'John and Mary like each other.'
- b. John i Mary lul cohaha n ta.
 John Nom Mary Acc like Pres Ending
 'John likes Mary.'
- (44) a. John i Mary wa kkyean ass ta.
 John Nom Mary with hugg Past Ending
 'John hugged Mary.'
- b. John i Mary lul kkyean ass ta.
 John Nom Mary Acc hugg Past Ending
 'John hugged Mary.'

The examples correspond to the verb class of partially symmetric human interaction such as *hug*, *embrace*, *kiss* etc.²³ While an *NP wa* example denotes a symmetrically volitional event, its *NP ul/lul* version denotes an asymmetrically volitional event.²⁴ A reciprocal expression *selo* 'each other' can only appear in the *NP wa* sentences, which shows this contrast.

- (45) a. John i Mary wa selo cohaha n ta.
 John Nom Mary with each other like Pres Ending
 'John likes (with Mary) each other.'

²³While these verbs don't have syntactic correspondents for NP-wa in English, conjoined NPs as the subject are allowed in Korean.

- (i) John-kwa Mary-ka cohahanta.
 John-and Mary-Nom likes
 'John and Mary likes each other.'
- (ii) John-kwa Mary-ka kkyeanassta.
 John-and Mary-Nom hugged
 'John and Mary hugged.'

²⁴Dowty (1991) observes the same fact in English.

- b. *John i Mary lul selo cohaha n ta.
 John Nom Mary Acc each other like Pres Ending
 'John likes Mary each other.'

In the aspect of Proto Agent properties, the *NP wa* construction entails the volitional involvement of the two parties while the *NP ul/lul* construction entails only the volitional involvement of the subject NP. If some verbs entail actions that by their nature, require the volitional involvement of two participants such as marrying, playing chess, fighting etc., one participant cannot be realized as *NP ul/lul*. Instead, an *NP wa* or a conjoined collective subject sentence is used.²⁵

- (46) a. John i Mary wa kyelhonha yess ta.
 John Nom Mary with marry Past Ending
 'John married Mary.'
 b. John kwa Mary ka kyelhonha yess ta.
 John and Mary Nom marry Past Ending
 'John and Mary married.'
 c. *John i Mary lul kyelhonha yess ta.
 John Nom Mary Acc marry Past Ending
 'John married Mary.'

The lack of the Proto Agent property such as volition can be characterized as a property of *NP ul/lul* arguments. In other words, the accusative marker *ul/lul* can only be attached to the argument which does not entail volition in Korean, while the oblique argument *NP wa* can.

²⁵There is a semantic correlation between the sentence containing an *NP-wa* and the collective subject versions.

5. Conclusion

The study of case alternation phenomena within the proto roles theory provides an insight into lexical representations and the correspondence between syntax and semantics. We can conclude that the semantic properties bring out the similarities and differences in the syntactic argument's realization. We have seen that the accusative case *ul/lul* is semantically related to Proto Patient entailments in contrast with other postpositions. Considering the direct object is the argument which has the most Proto Patient properties in a sentence, this suggests that *ul/lul* works as the accusative case marker for identifying the objecthood of an NP in Korean. I used Dowty's (1991) proto role hypothesis and Argument Selection Principle to draw this conclusion.

Now if we consider semantic properties of *ul/lul*, we can explain the reason why this accusative case marker appears in adverbial expressions.

- (47) a. John un paykmite kel ess ta.
John Nom 100 meter walk Past Ending
'John walked 100 meters'.
b. John un paykmite lul kel ess ta.
John Nom 100 meter Acc walk Past Ending
'John walked the (whole distance of) 100 meters.'
- (48) a. John un Mary ka epsnun han sikan tongan(ey)
John Top Mary Nom is absent one hour during(in)
cam ul ca ass ta.
sleep Acc sleep Past Ending
'John slept in the hour that Mary was absent.'

- b. John un Mary ka epsnun han sikan tongan ul
 John Top Mary Nom is absent one hour during Acc
 cam ul ca ass ta.
 sleep Acc sleep Past Ending
 'John slept for the whole hour while Mary was
 absent.'

In (47a) *paykmite* is an adverbial quantifier which measures the extent of walking, implying the entire distance of walking. This is similar to an entailment of Incremental Theme. The combination of *ul/lul* with this adverbial accords to general use of the accusative case *ul/lul* in case alternations.

The similar fact is observed in time adverbials of (48). Especially there is a clear meaning difference between (48a) and (48b). The sentence (48a) with *han sikan tongan(ey)* implies that John slept sometime during the hour that Mary was absent, but sentence (48b) with *han sikan tongan ul* means that John slept for the entire hour that Mary was absent. By attaching the accusative marker *ul/lul*, the meaning of individuation or definization of space and time is added to the adjuncts. In this respect, the adverbial with *ul/lul* is similar to the entailments of the accusative *ul/lul*. The only difference is that it appears with the adjunct, while the latter combines with a complement. We can conclude that since *ul/lul* is semantically associated with Proto Patient properties, it can be utilized for adjuncts by representing the meaning of measuring out the whole event.

Through the proto roles theory, we can capture the semantic generalization of the accusative case marker *ul/lul*, which characterizes objecthood in Korean and furthermore, explain the subtle meaning difference in case alternations which is connected

to grammatical opposition among subject, direct object and oblique object. Case marking phenomena in Korean are closely related to semantic entailments and are best studied as an interface between syntax and semantics.

References

- Croft, Williams A. 1993. "Case Marking and the Semantics of Mental Verbs," *Semantics and the Lexicon*. Kluwer Academic Publishers.
- Dowty, David. 1989. "On the Semantic Content of the Notion 'Thematic Role'," in *Properties, Types and Meanings*, vol. II, ed. Barbara Partee, Gennaro Chierchia, and Ray Turner. Dordrecht: Kluwer
- Dowty, David. 1991. "Thematic Roles and Argument Selection," *Language* 67.3
- Fillmore, Charles. 1977. "The Case for Case Reopened," in *Syntax and Semantics*, vol. 8: *Grammatical Relations*, ed. Peter Cole and Jerrold Sadock, 59-82. New York: Academic Press.
- Grimshaw, Jane. 1990. *Argument Structure*. The MIT Press.
- Gruber, Jefferey S. 1965. *Studies in Lexical Relations*. Bloomington: Indiana University Linguistics Club.
- Hong, J S. 1987. *hyenday hankwuke tongskumwun yengu*. Top Publishing Co.
- Hong, K S. 1995. "itong tongsawa cangsomyengsa phyoci." *Language Research* 31.3.
- Hopper, Paul, and Sandra A. Thompson. 1980. "Transitivity in Grammar and Discourse," *Language* 56, 251-99.

- Hopper, Paul, and Sandra A. Thompson. eds. 1982. *Syntax and semantics*, vol. 15. Academic Press.
- Im H B 1998. "{ul/lul} cosauy uymiwa thongsa." *kwuke mwunpepuy simcheung*. Thahaksa.
- Jackendoff, Ray. 1990. *Semantic Structures*. LI Monograph 18.
- Kang, Y S. 1986. *Korean Syntax and Universal Grammar*. Hanshin Publishing Co.
- Krifka, Manfred. 1992. "Thematic Relations as Links between Nominal Reference and Temporal Constitution," *Lexical Matters*. CSLI Lecture Note 24.
- Levin, Beth. 1993. *English Verb Classes and Alternations*. The University of Chicago Press.
- Ladusaw, A. and David Dowty. 1988. "Toward a Nongrammatical Account of Thematic Roles," in *Syntax and Semantics*, vol 21. Academic Press.
- Perlmutter, D. 1978. "Impersonal Passive and the Unaccusative Hypothesis," *BLS* 4.
- Rosche E. and Carolyn Mervis. 1975. "Family Resemblances: Studies in the Internal Structure of Categories," *Cognitive Psychology* 7.
- Rosen, Carol. 1984. "The Interface between Semantic Roles and Initial Grammatical Relations," *Studies in Relational Grammar* 2. The University of Chicago Press.
- Tenny, Carol. 1992. "The Aspectual Interface Hypothesis," *Lexical Matters*. CSLI Lecture Notes No.24.
- Velazquez Castillo, Maura. 1996. *The Grammar of Possession*. Studies in Language Companion Series 33. John Benjamins Publishing Co.
- Yoo, H K & S H Lee. 1996. "kyekcosa kyocheywa uymiyek." *kwuke mwunpepuy thamkwu* III. Thayaksa.

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