

Abstract

This paper presents a unified approach to multiple nominative and accusative constructions in Korean. We identify 16 semantic relations holding between two consecutive noun phrases (NPs) in multiple case marking constructions, and propose each semantic relation as a licensing condition on double case marking. We argue that the multiple case marking constructions are merely the sequences of double case marking, which are formed by dextrosinistrally sequencing the pairs of the same-case marked NPs of same or different type. Some appealing consequences of this proposal include a new comprehensive classification of the sequences of same-case NPs and a straightforward account of some long standing problems such as how the additional same-case NPs are licensed, and in what respects the multiple nominative marking and the multiple accusative marking are alike and different from each other.

1 Introduction

This paper deals with multiple case marking constructions (MCCs) in Korean in a unified way. MCCs notably include multiple nominative constructions (MNCs) like in (1a) and multiple accusative constructions (MACs) like in (1b).¹

- (1) a. ttokki-**ka** kuy-**ka** kkuth-**i** ppyocokha-ta.
rabbit-NOM ear-NOM top-NOM be.pointed-DECL
‘The top of the ears of the rabbit is pointed.’
b. Hans-ka ttokki-**lul** kuy-**lul** kkuth-**ul** cap-ass-ta.
Hans-NOM rabbit-ACC ear-ACC top-ACC grab-PAST-DECL
‘Hans grabbed the top of the ears of rabbits.’

Multiple case marking can be observed in a single clause, as shown in (2).

- (2) haksayng-**i** yehaksayng-**i** ttokki-**lul** kuy-**lul** kkuth-**ul** cap-ass-ta.
student-NOM girl student-NOM rabbit-ACC ear-ACC top-ACC grab-PAST-DECL
‘(The) girl students of students grabbed the top of the ears of rabbits.’

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¹The nominative case markers *-ka* and *-i* and the accusative case markers *-lul* and *-ul* are allomorphs, respectively. The former is post-vowel and the latter post-consonantal. The Yale Romanization System is used for the romanization of the Korean words. The abbreviations for the glosses used in this paper are as follows: NOM (nominative), ACC (accusative), GEN (genitive), DAT (dative), PRES (present tense), PAST (past tense), NLZ (nominalizer), REL (relative clause marker), DECL (declarative), QUE (question), LOC (locative), INST (instrumental), CL (classifier), GOAL (goal), TMP (temporal), SRC (source), HON (honorification), SUF (suffix), FOC (focus), and TOP (topic).

Given that a predicate can assign only as many cases as the number of arguments it subcategorizes for, the multiple occurrences of the same-case marked NPs are puzzling. This puzzling phenomenon poses a challenge not only to approaches in Head-driven Phrase Structure Grammar (HPSG) but also in other theories of grammar.

Despite numerous studies of MCCs, there still remain many unfinished puzzles that remain to be solved. There have been only few scattered attempts to explore the whole range of data in a balanced way. The majority of the previous works have mainly or exclusively focused on the double nominative constructions (DNCs), missing the crucial points concerning the questions of how DNCs are related to MNCs on the one hand, and to the double accusative constructions (DACs) on the other. Furthermore, the question of how DACs are related to MACs remains still to be answered in Korean linguistics.

The idea that insight into multiple identical case marking should be examined in more general contexts in Korean linguistics has been previously ignored. The set of NPs are marked with the identical case marker, nominative (1a) and accusative in (1b). It is also clear that the conceptual relationship between the same-case marked NPs is identical. I argue that double nominative marking is the simplest subtype of multiple nominative marking, which, together with multiple accusative marking, is in turn merely a subtype of multiple case marking. There are many pieces of evidence supporting insight into multiple case marking as systematically possible in the object as well as in the subject position.

This data is promising because it allows us to advance an integrated approach for multiple identical case marking. In this paper we show that this new insight enables us to find solutions to linguistic puzzles that previously eluded us.

This paper is organized as follows: In section 2, we show that only one NP of the same-case marked NPs is argument, and all other additional NPs are non-arguments. In section 3, we argue that multiple case marking is neither restricted to stative verbs nor to the sentence-initial position. In section 4, we critically review some previously proposed ideas about the grammatical status of the additional NPs. In section 5, we argue that at least 16 semantic types of sequences of identical case marked NPs should be assumed, showing that all these types are attested in MCCs. In section 6, we propose that the additional NPs are adjuncts which are listed in the value of the feature DEPS (for DEpendantS). In section 7, we propose a mechanism of multiple nominative and accusative marking. In section 8, we illustrate how the proposal works, and finally draw a conclusion in section 9.

2 The Non-Argument Property of the Additional NPs

If we adopt a standard view that there is a one-to-one relation between case assigner and case assignee, it is reasonable to assume that only one of the nominative case marked NPs is argument of the predicate, occurring in the subject position. Likewise, we assume that only one of the accusative case marked NPs is argument

of the transitive predicate, occurring in the object position. All the other additional same-case NPs are non-argument.

This non-argument property is one of the most important criteria for distinguishing MCCs from some other constructions in which two consecutive NPs happen to be marked with the same-case marker. While additional same-case marked NPs do not saturate the valency of a predicate in MCCs, there are some constructions in which two identically case-marked NPs are subcategorized for by a predicate, as can be seen in the psych-verb constructions in (3) and the copulative constructions in (4).

- (3) **(John-i) *(holangi-ka) silh-/mwusep-/cikyep-ta.*
 John-NOM tiger-NOM dislike-/fear-/be.tired.of-DECL
 ‘*(John) dislikes/fears/is tired of tigers.’ (psych-verb constructions)
- (4) **(mwul-i) *(elum-i) toy-ess-ta.*
 water-NOM ice-NOM become-DECL
 ‘*(Water) became ice.’ (copulative constructions)

Such examples as in (3) and (4) have been regarded as a type of MCCs in some works (e.g., Rhee (1999), Park (2001), Kim (2004a), and Cha (2008), among others). It is clear, however, that they do not share the non-argument property, since deletion of one of the two NPs would result in ungrammaticality.

Along the same lines, applicative formation as shown in (5) should be distinguished from MCCs, since the promoted argument – *Maria* in (5) – is an argument of the predicate.

- (5) Hans-ka $\left\{ \begin{array}{l} \text{Maria-eykey} \\ \text{Maria-lul} \end{array} \right\}$ kkoch-ul cwu-ess-ta.
 Hans-NOM $\left\{ \begin{array}{l} \text{Maria-ACC} \\ \text{flower-ACC} \end{array} \right\}$ give-PAST-DECL
 Mary-DAT/-ACC
 ‘Hans gave Maria flowers.’

For these reasons, we are not concerned here with psych-verb constructions or copulative constructions with two same-case NPs in them, rather we are proposing to exclude them from MCCs.² We also suggest that examples like in (5) are not MCCs.³

²This is not to say that these two constructions may not involve sequences of identical case marked NPs. It is possible to add additional nominative NPs to the position preceding to the first or the second NP. In other words, the two constructions can be MCCs, if more than three identical case marked NPs occur.

³One might ask whether or not there is any case where MACs has no counterpart in MNCs. The example set (5) might be regarded as one of the cases. But it is not an example of MCCs, as discussed above. So we may draw a conclusion that there is no case where MACs has no counterpart in MNCs. I credit Yong-hun Lee (p.c.) for pointing out this aspect of MCCs.

3 Restrictions on the Class of Predicates

In a series of articles (e.g., Kim (2004a), Kim (2004b), Kim et al. (2007)), Jong-Bok Kim claimed that the class of the predicates occurring in MNCs is confined to stative predicates, as can be seen in (6).

(6) SPR Lexical Rule (= (12), Kim et al. (2007); (34), Kim (2004b))

$$v\text{-}stative \mapsto \left[\begin{array}{l} v\text{-}spr \\ VAL \left[\begin{array}{l} SPR < \boxed{2}_i > \\ SUBJ < [SPR < \boxed{2} >]_j > \end{array} \right] \\ SEM | RELS \left\langle \dots, \left[\begin{array}{ll} RELN & subordinate \\ ARG1 & i \\ ARG2 & j \end{array} \right], \dots \right\rangle \end{array} \right]$$

Multiple case marking, however, is observed in the clauses formed with various predicate types including intransitive stative verbs shown in (1a), transitive verbs (1b), ditransitive verbs (7), and activity verbs (8).

(7) Hans-ka na-eykey haksayng-**ul** yehaksayng-**ul** ponay-ess-ta.
Hans-NOM I-DAT student-ACC girl student-ACC send-PAST-DECL
‘Hans sent me girl students of students.’

(8) haksayng-**i** yehaksayng-**i** na-eykey o-ass-ta.
student-NOM girl student-NOM I-DAT come-PAST-DECL
‘Girl students of students came to me.’

The examples (1b) and (7)-(8) clearly show that multiple case marking is not confined to the stative verbs.

4 The Grammatical Status of Additional NPs

Regarding the grammatical status of additional NPs, two main streams of proposals are basically discernible.

One stream maintained that both NP₁ and NP₂ are subject, trying to define various notions of subject: e.g., Yu (1909) referred to them big and small subject, Yoon (2007) major and grammatical subject, and Lee (1997) subject [Spec, RefP] and subject [Spec, TP], respectively.

The other stream posited that only NP₂ is subject, proposing that NP₁ is topic or focus: e.g., Hong (2001) topic vs. subject; Rhee (1999) topic/focus vs. subject; Yoon (1986), Schütze (2001), Kim (2001, 2004a), and Kim et al. (2007) focus vs. subject; Park (2001) focused subject vs. subject; Choi (2012) sentential specifier vs. subject.

But there remain many essential problems unsolved in the first stream of reasoning, as partly pointed out by Chae & Kim (2008) among others. First of all, a clause with more than one subject is highly at odds with a perspective on the

theory of grammar . Second, there is no straightforward answer to the question of what the logical structure of the clause looks like. Third, the relationship between the various notions of subject – be it big or small, or major or grammatical – is extremely vague.⁴ Fourth, there is no convincing independent evidence for assuming the various notions of subject in Korean and in other languages. Fifth, there are clear difficulties in answering the question as to how the clauses can be interpreted. Finally, there is one more problem which has been touched on from time to time but not explored in detail. This problem comes from the observation that the multiple case-marking phenomenon is not restricted merely to nominative cases, but also observed in accusative case marking. For these reasons, any attempt to wrestle with the various notions of subject may result in confusion of the issue.

Most analyses advancing the second stream of reasoning have been proposed within the framework of Head-driven Phrase Structure Grammar (HPSG, Sag et al. (2003)). Kim (2004a) and Kim et al. (2007), most notably, proposed an analysis which basically has three components: First, the feature SPR and the Head-SPR rule, besides SUBJ, are introduced as in (9a). Second, the value of SPR is introduced via SPR Lexical Rule (6) under the constraint of *subordinate*, a notion borrowed from Na & Huck (1993).⁵ Third, NP₁ – the value of SPR – is nominative-marked by the constructional constraint *focus-clause*, as formalized in (9b).

- (9) a. Head-SPR Rule (= (33), Kim (2004a); cf. (12), Kim et al. (2007))

$$\left[\begin{array}{c} \text{hd-spr-ph} \end{array} \right] \rightarrow \left[\begin{array}{c} \text{NP} \end{array} \right], \text{H} \left[\begin{array}{c} \text{SPR} < \left[\begin{array}{c} \text{NP} \end{array} \end{array} \right] > \right]$$

 b. *focus-clause* (= (14), Kim et al. (2007); a revision of (37), Kim (2004a))

$$\left[\begin{array}{c} \text{RELS} \left\langle \left[\begin{array}{c} \text{PRED } \textit{characterized-by} \\ \text{ARG1 } h3 \\ \text{ARG2 } h4 \end{array} \right] \right\rangle \right] \rightarrow \text{NP} \left[\begin{array}{cc} \text{GCASE} & \textit{nom} \\ \text{FOCUS} & + \\ \text{LBL} & h3 \end{array} \right], \text{S} \left[\begin{array}{c} \text{LBL } h4 \end{array} \right]$$

This analysis, however, encounters at least three non-trivial problems.

First, given the general consensus that Korean is a specifier-less language, the rule in (6) lacks empirical independent motivation. Note that, unlike in English or German, a (common) noun does not subcategorize for a specifier in Korean.⁶

Second, this analysis as it is formalized in (6) cannot account for multiple nominative constructions, since the Head-SPR rule may be applied at most once. For multiple nominative constructions, Kim (2004a) and Kim et al. (2007) assumed that SPR takes a list with more than one NP as its value. But this analysis again faces the first problem.

The first and the second problem become more evident in the sentences where

⁴See Park (2001) for a critical discussion.

⁵Choi (2012) proposed a similar analysis, according to which the initial NP is a sentential specifier. As a condition on licensing of the sentential specifier, he assumed a (pragmatic) notion of *aboutness* instead of *subordinate*. He disputed the position that the initial NP is a focus. The focus analysis was criticized by Yoon (2007) in detail.

⁶Moreover, the feature SPR is *ad hoc* in the sense that it is assumed exclusively for double/multiple nominative constructions.

a proper noun such as *Payktamsa* (Baekdamsa Temple) occurs in the multiple nominative constructions as shown in (10).

- (10) Selaksan-i Payktamsa-ka tanpwung-i alumptap-ta.
 Mt. Selak-NOM Paekdamsa Temple-NOM autumn leaves-NOM be.beautiful-DECL
 ‘Autumn leaves are beautiful around Paekdamsa Temple in Mt. Selak.’

Third, the semantic constraint *subordinate* is obviously not enough to correctly predict the grammaticality of the sentences. For example, the relationship between *tomato* and *worm* is not subsumed by *subordinate*, but the sentence (11) is grammatical.

- (11) thomatho-ka pellye-ka tulkkulh-nun-ta.
 tomato-NOM worm-NOM be.infested-PRES-DECL
 ‘Tomatoes are infested with worms.’

As can be seen in Table 1, the *subordinate* relations cover only 5 out of 16 subtypes of multiple case marking constructions.

5 Licensing of the Additional NPs

The effort to find the generative source of the sequences of same-case NPs in some semantic relationships between the two consecutive nominative NPs goes back to Yang (1972).⁷ He argues that the ‘macro-micro relation’ is one of the generative sources, refuting the genitive view.⁸ This relation refers to a relation where an NP is conceptually divided into the whole NP itself and a subpart of it. The NP which corresponds to the former is referred to as a macro-NP, while the NP corresponding to the latter is referred to as a micro-NP. Yang (1972, 42ff.) classifies this macro-micro relation into 5 subtypes on the basis of their semantic contents: (i) whole-part, (ii) class-member, (ii) type-token, (iii) total-quantity, and finally (v) affected-affecter.⁹

The licensing issue has been tackled again by Na & Huck (1993). They proposed that the two consecutive nominative case-marked NPs need to be in a certain semantic relation, called ‘thematic subordination’: X is ‘thematically subordinate’ to an entity Y iff. Y’s having the properties that it does entails that X has the properties that it does. Na & Huck (1993, 195) classify these thematic subordination

⁷This section is based on Ryu (2013).

⁸For other generative sources of the multiplication of case markers, Yang (1972, 159 & 195) added two groups of verbs. One group includes verbs of self-judgment (e.g., *siphta* (to be desirous of), *cohta* (to be fond of), *kipputa* (to be glad), *masissta* (to be tasty), etc.) and verbs of semi-self-judgment (e.g. *philyohata* (to be necessary), *chwungpwunhata* (to be enough), *kanunghata* (to be possible), *swipta* (to be easy), etc.). The other group Yang (1972, 175) adds is verbs of existence (*issta* (to exist), *epta* (not to exist), *manhta* (to exist a lot), and *cekta* (to exist a few)). The first group may well be regarded as psych-verbs.

⁹According to Yang (1972, 45), the affected-affecter macro-micro relation is a ‘solidarity’ relation and some sort of natural pairing, e.g., kinship, teacher-student, society-individual, etc. We do not assume this relation as an independent class, but regard it as an instance of converse relation.

relations into five subtypes: (i) part-whole relation, (ii) qualitative relation, (iii) conventional relation, (iv) converse relation, and (v) taxonomic relation.

The part-whole relation and the taxonomic relation in Na & Huck (1993) correspond to the whole-part and the class-member relation in Yang (1972), respectively. The other three relations — qualitative, conventional, and converse — have been recently proposed. The *thematic subordinate* relations have been adopted as licensing conditions in subsequent work in the field of Korean linguistics (see Kim (2004a), and Kim et al. (2007), among others).

Such terms as whole-part, (inalienable/alienable) possessor-possessum, kinship, thing-property, locative-theme etc. have sometimes been adopted in the literature, and used to name the whole constructions at the same time (see Choi (2008, 902) for a critical survey). However, at least three pieces of desiderata of this tradition may be pointed out.

First of all, the definitions of each term are not clear in many cases. For example, the whole-part relation has been interchangeably used with the inalienable possessor-possessum relation in many works. As will be clear below, however, inalienable possessor-possessum relation is only a subtype of six subtypes of the meronymic relation, and not all subtypes of the whole-part relation share the same properties with the inalienable possessor-possessum relation. This is one of the major sources of confusion found in many previous studies.

Another point of desiderata can be found in sentences like (12), which Yang (1972, 43) regarded as an example of part-whole relation. However, a closer examination reveals that they do not stand in part-whole relation, since *sayk* (color) is not a part of *mwucikay* (rainbow).

- (12) ce mwucikay-ka sayk-i kop-ta.
that rainbow-NOM color-NOM be.pretty-DECL
'That rainbow's color is pretty.' (= (2b), Yang (1972: 43))

A third piece of desiderata in previous work on the topic is the incompleteness of classification. As will be clear soon, there are many other semantic relations which are responsible for the multiplication of same-case NPs in Korean, but they have received little attention.

To remedy these desiderata, we start our discussion by advancing some important achievements of mereology and taking into consideration some data, which have been discussed less frequently in the literature.

5.1 Meronymic Relations

Whole-part relations or meronomies gave rise to a wide range of studies in linguistics, psychology, philosophy and artificial intelligence (cf. Cruse (1986), Iris et al. (1988) and Winston et al. (1987)). Based on psycholinguistic experiments and the way in which the parts contribute to the structure of the wholes, Winston et al. (1987) determined six types of part-whole relations: (i) component-integral object, (ii) member-collection, (iii) portion-mass, (iv) stuff-object, (v) feature-activity, and

(vi) place-area. We adopt the definitions and the type classification of meronymic relations in Winston et al. (1987), and argue that all six types should be assumed for licensing of the sequences of same-case NPs.

Type 1 Integral object-component The integral object-component relation is a relation between components and the objects to which they belong. Integral objects have a structure; their components are separable and have a functional relation with their wholes (e.g., *elephant-nose*, *person-leg*, *bike-pedal*, *tree-bark*, *opera-aria*, *cup-handle*, *car-wheel*, *person-hand*, *person-hair*, etc.).

Type 2 Collection-member The collection-member relation represents membership in a collection. Members are parts, but they cannot be separated from their collections and do not play any functional role with respect to their whole (e.g., *fleet-ship*, *army-soldier*, *faculty-professor*, *forest-tree*, *deck-card*, etc.). Collection must be distinguished from classes. The class-membership relation (see Type 7 Class-membership below) is not a meronymic relation, because it is not expressed by ‘part’, but by ‘is’.

Type 3 Mass-portion Mass-portion captures the relations between portions and masses, extensive objects, and physical dimensions. The parts are separable and similar to each other and to the wholes which they comprise, and do not play any functional role with respect to their whole (e.g., *pie-slice*, *kilometer-meter*, *salt-grain of salt*, *cake-piece*, etc.).

Type 4 Object-stuff The object-stuff category encodes the relations between an object and the stuff of which it is partly or entirely made. The parts are not similar to the wholes that they comprise, cannot be separated from the whole, and have no functional role (e.g., *car-steel sheet*, *desk-wood*, *bike-steel*, etc.).

Type 5 Feature-activity The feature-activity relation captures the semantic links within features or phases of various activities or processes. The parts have a functional role, but they are not similar or separable from the whole (e.g., *golf-putting*, *eating-swallowing*, *shopping-paying*, *eating-chewing*, etc.).

Type 6 Area-place Area-place captures the relation between areas and special places and locations within them. The parts are similar to their wholes, but they are not separable from them (e.g., *Korea-Seoul*, *Europe-Germany*, *desert-oasis*, etc.).

5.2 Inclusion Relations

Type 7 Class-membership Class-membership or hyponymy is not a part-whole relation, and usually expressed in the frames, ‘Xs are type of Y’, ‘Xs are Ys’, ‘X is a kind of Y’, and ‘X is a Y’ (Cruse (1986, 89)). Class inclusion and meronymy (especially, collection-membership) are clearly distinguished when expressed by ‘kind of’ and ‘part of.’ (e.g., *flower-rose*, *airplane-777*, *fruit-apple*, *tree-oak*, *furniture-chair*, *tool-saw*, *bird-sparrow*, *clothes-shirt*, *games-soccer*, etc.).¹⁰

¹⁰This relation properly includes the type-token relation (sun vs. rising sun) in Yang (1972), since ‘rising sun’ is a kind of ‘sun’. Free relatives with bound nouns like *kos* (place) and *pwun* (honored person) may be regarded as an example of class-membership.

Type 8 Object-attachment Pairs such as *ear-earring*, *chimney-TV antenna*, and *fishing line-hook* do not express a part-whole relation, since the latter may be attached to, but not parts of the former. This relation, which we call object-attachment relation, might be confused with meronymy, since the relation paraphrased by ‘to be attached to’ can be also observed in whole-part relations.

5.3 Quality-Quantity Relations

Type 9 Object-quality Object-quality relation captures one of qualities of entity. The objects may or may not have a structure, their properties have a characterizing function (e.g., *tool-use*, *pants-length*, *person-height*, *eyes-color*, *skin-texture*, *room-temperature*, *food-taste*, *hair-shine*, etc.).

Type 10 Object-quantity Object-quantity relation captures a relation between the object and its floated quantifiers (e.g., *student-number CL*, *horses-number CL*, *water-number CL*, *car-number CL*, *apple-number CL*, etc.).

5.4 Spatio-Temporal Relations

Type 11 Space-object Space-object relation represents a relation between an object and the space in which it is placed (e.g., *container-crack*, *tomato-worm*, *beach-girl*; *city-weather*, *kids-illness*, etc.).

Type 12 Time-object Time-object relation captures a relation between an object and the time in which it occurs (e.g., *summer-beer*, *autumn-weather*, *nowadays-camera*, *spring-flowers*, *yesterday-body*, *tomorrow-kids*, *that time-cinema*, etc.).

5.5 Predication Relations

Type 13 Possessor-object Possessor-object, in general, is an asymmetric relationship between two constituents, the referent of one (= the possessor) which possesses the referent of the other (= the object). X and Y may enter into a possessor-object relation, if their relations may be characterized by such predicates as *have*, *own*, and *rules over*. Alienable and inalienable possession are commonly distinguished. We understand only the alienable possession under Type 13 possessor-object relation. The inalienable possession is a proper portion of Type 1 integral object-component relation.

Type 14 Conventional relation Conventional relation captures relations in which some entity X is related to some individual Y by virtue of convention, rather than as a consequence of their inherent properties. Following Cruse (1986) and Na & Huck (1993), we’ll call these relationships conventional. (e.g., *man-car*, *woman-picture*, *car-smell*, *tiger-area of movement*, *girl-dog*, *boy-hat*, *bird-nest*, *animal-territory*, *person-clothes*, etc.) There are in principle a variety of conventional relations into which X and Y may enter if a conventional relation holds between X and Y, and these relations may be more accurately characterized by a variety of predicates other than *have* (cf. Na & Huck (1993, 197).

Type 15 Object-predication Object-predication captures an asymmetric relation between two consecutive NPs; the referent of the one is construed to be agent or theme argument of the other (e.g., *person-complaint*, *father-love*, *bomb-explosion*, *car-acceleration*, *ship-voyage*, etc.). The NPs expressing predication are typically Sino-Korean verbal nouns like *pwulphyeng* (complaint), but they can be gerunds formed by attaching a derivational suffix *-ki* or *-um* as *ilk-ki* (reading).¹¹

Type 16 Conversive relation Following Na & Huck (1993), we define conversive relation as a (roughly symmetric) relation in which the entities denoted by the first nouns are in the relevant cases construed to be in institutional hierarchies to the entities denoted by the second nouns with which they are paired (e.g., *parent-child*, *master-servant*, *employer-employee*, *husband-wife*, *doctor-patient*, *host-parasite*, etc.). The kinship relations, the social relations, and the affector-affected relation in Yang (1972) are subsumed by the conversive relation.

5.6 Summary and Conceptual Linking Constraints

So far, we introduced 16 semantic relations which can be observed in the context of MNCs or MACs. They are summarized as in Table 1.¹²

Table 1: Types of Multiple Case Marking Constructions (Ryu (2013))

Proposed type of MCCs	NOM-NOM	ACC-ACC	Yang (1972)	Na & Huck (1993)
Type 1 integral obj.-component	○	○	whole-part	meronomic rel.
Type 2 collection-member	○	○	×	×
Type 3 mass-portion	○	○	×	×
Type 4 object-stuff	○	○	×	×
Type 5 activity-feature	○	○	×	×
Type 6 area-place	○	○	×	×
Type 7 class-membership	○	○	class-member type-token	taxonomic rel.
Type 8 object-attachment	○	○	×	×
Type 9 object-quality	○	○	×	qualitative
Type 10 object-quantity	○	○	total-quantity	×
Type 11 space-object	○	*	×	×
Type 12 time-object	○	*	×	×
Type 13 possessor-object	○	*	×	
Type 14 conventional relation	○	*	×	conventional
Type 15 object-predication	○	*	×	×
Type 16 conversive relation	○	*	affected-affecter	conversive

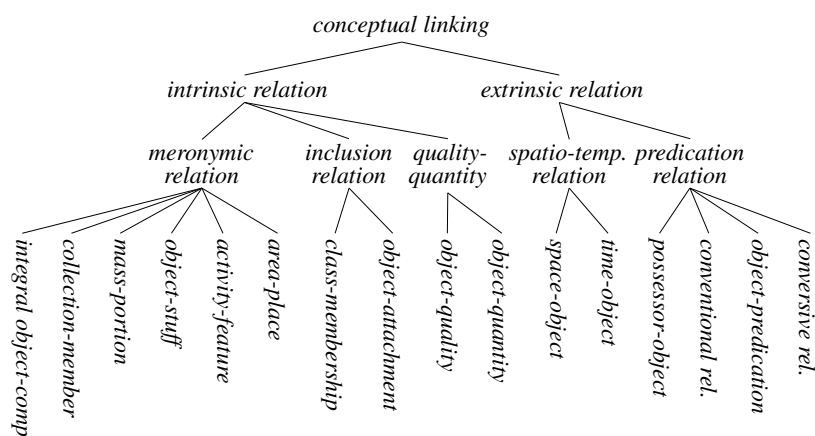
It is important to note that, while all types are attested in MNCs in Korean, Type 11-Type 16 are not attested in MACs, but only in MNCs (see Ryu (2013) for a detailed discussion). Based on the semantic relations discussed above, I propose the following hierarchy as a licensing condition for the additional NPs. More

¹¹The object-predication relation is a major source of multiple same-case marking in verbal noun constructions, in which the functional verbs *hata* (to do) and *toyta* (to become) are used to form active and passive sentences, respectively (see Ryu (1993) for details).

¹²Rel. is an abbreviation for ‘relation’ and con. for ‘constructions’. The symbol * refers to ‘impossible’, and × ‘not mentioned’.

specifically, I propose the nominative case is shared between the two consecutive NPs, if one of the *conceptual relation* holds between them, while the accusative case is shared between the two consecutive NPs, if one of the *intrinsic relation* holds between them. In this sense, multiple accusative marking is more restrictive than multiple nominative marking, as previously speculated without any detailed discussion.

(13) Conceptual Linking Hierarchy



The conceptual linking hierarchy sketched in (13) has many advantages over the previous analyses. First, it amounts to the claim that there are at least 16 different types of multiple nominative constructions, exempting such attempts to report further types of multiple nominative constructions as Kim et al. (2007) did. Second, it gives an answer to the long standing question how the additional nominative NPs are licensed. Third, it provides us with an answer to the question of in what respects the multiple nominative and accusative constructions are similar and different from each other. In my view, multiple nominative case marking is basically only possible if the conceptual relation between the two consecutive NPs is a type subsumed by the types *intrinsic relation* and *extrinsic relation*, whereas the conceptual relation between the two consecutive accusative NPs is a type subsumed by the type *intrinsic relation*. Fourth, it provides a starting point in answering the question of how one might process the semantic and pragmatic contributions of interpretation to the sentence as a whole.

6 Adjunct in MCCs

In this section, I show that only the right-most NP is the subject or object, and the other additional same-case marked NPs are adjuncts.

6.1 Head of the Sequence as Argument

It has been pointed out in the literature that the well-known subjecthood tests reveal that the right-most NP is the subject. If we will concentrate on the DNCs, for

example, the honorific suffix *-si*, which is known to be controlled by the subject, is triggered by the right-most NP. Reflexivization can be controlled by the right-most NP, and the plural copying phenomena also shows that the right-most NP is the subject. Interestingly enough, however, Park (2001, 164) pointed out that all the three arguments can also be used to show that the left-most NP is the subject. Based on this observation, he concluded that both the left-most and the right-most NP may be the subject.

But the selectional restrictions of the predicate show that only the right-most NP in each sequence of the same-case marked NPs is the argument of the predicate. There are at least three pieces of evidence supporting this view.

First, let us examine the sentence in (1a). What is predicated of by the predicates *ppyoccokhata* (be pointed) is not the left-most NP *ttokki* (rabbit), but the right-most NP *kkuth* (top). This observation shows that the left-most NP is the argument of the predicate.

Another piece of evidence comes from a sentence like (14), where the same set of NPs combines with two different predicates. The sentence (14b) is ungrammatical, since the NP *elkwul* (face) violates the selectional requirement of the verb *chayphohata* (to arrest). If the predicates would select the left-most NP, *John*, both the sentences in (14) would be grammatical.

- (14) a. Mary-ka John-ul elkwul-ul ttayli-ess-ta.
 Mary-NOM John-ACC face-ACC hit-PAST-DECL
 ‘Mary hit John’s face.’
 b. *Mary-ka John-ul elkwul-ul chayphoha-ess-ta.
 Mary-NOM John-ACC face-ACC arrest-PAST-DECL

One further example shows that only the right-most NP is selected for by the predicate, too. The sentence (15b) is ungrammatical, since the verb *masita* (to drink) requires an NP having the feature [-integrated], whereas the verb *ppalta* (suck) selects an NP[+integrated] (example from Cho & Lee (2003)). (15b) is ungrammatical, since the right-most NP, *phi* (blood), does not satisfy the selectional requirement [-integrated] posed by the verb *masita* (to drink).

- (15) a. Vampire-ka John-ul phi-lul ppal-ass-ta
 Vampire-NOM John-ACC blood-ACC suck-PAST-DECL
 ‘A vampire sucked John’s blood.’ (Type 1 Integrated object-component)
 b. *Vampire-ka John-ul phi-lul masi-ess-ta
 Vampire-NOM John-ACC blood-ACC drink-PAST-DECL

What all those arguments show after all is that the right-most argument of a sequence of the same-case marked NPs is the argument of the predicate.

6.2 Evidence for the Adjuncthood of the Additional NPs

If we adhere to the traditional view on valence values, the only valence available is the adjunct. As we pointed out above, SUBJ, COMPS and SPR should be excluded. We propose that, in fact, the additional case-marked NPs are adjuncts.

There are many pieces of evidence supporting this proposal, though not all of them are sufficient and necessary.

First, there is no theoretical limit of the number of the additional NPs occurring in the multiple case marking constructions. Second, the additional NPs are not subcategorized for by the predicate. Third, unlike in English or German, a (common) noun does not subcategorize for a specifier in Korean. Fourth, even proper nouns can occur in the multiple case marking constructions. The fifth evidence comes from the behavior of manner adverbs like *seykkey* (hard), which can occur between the same-case marked NPs.

- (16) a. Mary-**ka** John-**ul** tali-**lul** **seykey** cha-ass-ta.
 Mary-NOM John-ACC leg-ACC hard kick-PAST-DECL
 'Mary kicked John's leg hard.'
- b. Mary-**ka** John-**ul** **seykey** tali-**lul** cha-ass-ta.
 Mary-NOM John-ACC hard leg-ACC kick-PAST-DECL
- c. Mary-**ka** **seykey** John-**ul** tali-**lul** cha-ass-ta.
 Mary-NOM hard John-ACC leg-ACC kick-PAST-DECL

Manner adverbs like *seykey* (hard) can occur between the consecutive NPs. The example (16) shows that the consecutive NPs do not form a constituent. The arguments above enable us to suggest that the additional non-argument NPs are adjuncts.

6.3 Adjuncts in HPSG

In HPSG, adjuncts combine syntactically with the phrases that they modify semantically in terms of modifier-head structures. Adjuncts are endowed with a specification for the feature MOD, whose value must be identified with (the SYNSEM of) the head daughter in a Head-Adjunct Structure. This type of analysis is adequate for a wide range of cases to which it is commonly applied.

However, Bouma et al. (2001) reported that in many languages types of adverbials defy any simple analysis in terms of the syntactic the combination of modifiers and heads. We believe that the adjuncts in MNCs in Korean also defy the standard treatment. Although we are not concerned with the passive MNCs, they seem to suggest that they should be dealt with in a way different from 'pure' adverbials. Passive converts a double accusative sentence into a double nominative sentence. The sentence (17a) has one of the passive counterparts of (17b), where the two consecutive NPs are marked with the same case.

- (17) a. Hans-**ka** John-**ul** tali-**lul** cha-ess-ta
 Hans-NOM John-ACC leg-ACC kick-PAST-DECL
 'Hans kicked John's leg.' (active: ACC-ACC)
- b. John-**i** tali-**ka** cha-i-ess-ta
 John-NOM leg-NOM kick-PASS-PAST-DECL
 'John's leg was kicked.' (passive: NOM-NOM)

- c. John-**i** tali-**lul** cha-i-ess-ta
 John-**NOM** leg-**ACC** kick-PASS-PAST-DECL
 ‘John’s leg was kicked.’ (passive: NOM-ACC)

Interestingly enough, the sentence (17a) has another passive counterpart (17c), where only the left-most NP is marked with nominative, the case of the other NPs remains unchanged, i.e. in accusative. Although this peculiar behavior of the passive MCCs is observed only in highly restricted subtypes of MCCs, e.g. Type 1 integrated object-component, it suggests that the adjuncts should be specified in the lexical entry of the predicate. Following the basic idea of Bouma et al. (2001, 39), we assume Argument Structure Extension (18) and Argument Realization (19).

- (18) Argument Structure Extension (cf. (65), Bouma et al. (2001, 39))

$$verb \Rightarrow \begin{bmatrix} \text{HEAD} & \boxed{3} \\ \text{ARG-ST} & \boxed{1} \\ \text{DEPS} & \boxed{1} \oplus list \left(\begin{bmatrix} \text{HEAD } noun \\ \text{MOD} \begin{bmatrix} \text{HEAD} & \boxed{3} \\ \text{RELS} & \boxed{2} \end{bmatrix} \end{bmatrix} \right) \\ \text{SEM} | \text{RELS} & \boxed{2} \end{bmatrix}$$

- (19) Argument Realization (cf. (11), Bouma et al. (2001, 11))

$$word \Rightarrow \begin{bmatrix} \text{SUBJ} & \boxed{1} \oplus \boxed{A} \\ \text{COMPS} & \boxed{2} \oplus \boxed{B} \ominus list(gap-ss) \\ \text{DEPS} & \boxed{2} \oplus \boxed{B} \oplus \boxed{1} \oplus \boxed{A} \end{bmatrix}$$

To preserve the distinction between adjuncts and truly selected arguments, we will assume first the level of ARG-ST, which contains all and only the selected arguments of a lexical head. In addition, we introduce dependency structure as an extended argument structure. The feature DEPS specifies the list of dependents of a lexical head. In the case of verbs, these are the selected arguments plus an underspecified list of nominal modifiers. We leave open whether adverbial *synsems* in general are specified in the list of DEPS in Korean. The relationship between ARG-ST and DEPS is defined by means of Argument Realization (19).

(18) allows a verb’s DEPS list to contain any number of nominal modifiers in addition to the verb’s arguments. Moreover, the MOD|HEAD value of the nominal modifier is identified with the HEAD value of the verb on whose DEPS list the nominal modifier appears.

7 Multiple Nominative and Accusative Case Marking

Focus analyses such as in (9b) have been challenged by many researchers (cf. Yoon (2007) and Choi (2012) among others). The main argument against the focus of the additional NPs centers around the observation that not all the additional NPs function as focal points. Partly agreeing with Yoon (2007), I assume that only a subset of the additional NPs can be interpreted as foci - a new information of an

utterance – within the topic-focus framework of the functional sentence perspective dating back to Prague school. It can be assumed that a non-truth-conditional notion, like focus, does not function as a grammatical case assigner (see (9b), Kim (2004b) and Kim et al. (2007)).

There are two other approaches to case marking in Korean: default nominative assignment hypothesis (Kang (1986) and Kim (2008), among others) and direct case marking hypothesis (Maling & Kim (1992, 39)). The former claims that, while an NP argument which is a sister of [–stative] V^0 is assigned accusative case (Kang (1986)), a nominative case in Korean is not assigned by any element. According to this claim, the nominative case marking takes place by default when an NP lacks a case Kim (2008, 115). The latter approach says that the part-NP is assigned case directly by V, and the whole-NP is assigned case either by V or by INFL, depending on its surface position (Maling & Kim (1992: 39)).

These two approaches, which have been proposed in the context of transformational grammars, seem to describe the case marking pattern of some double nominative constructions. But they have difficulties in dealing with the multiple nominative constructions (20), where more than two NPs are marked with nominative, and the multiple accusative constructions (21).

- (20) $[_{NP_2}$ thokki-ka] $[_{NP_1}$ kuy-ka] $[_{NP_1}$ ttuth-i] ppocokha-ta.
 rabbit-NOM ear-NOM top-NOM be.pointed-DECL
 ‘The top of ears of rabbits is pointed.’

- (21) Mary-ka John-ul tali-lul cha-ass-ta.
 Mary-NOM John-ACC leg-ACC kick-PAST-DECL
 ‘Mary kicked the leg of John.’

We propose that grammatical cases are assigned by grammatical rules. We assume the following two grammatical rules for nominative case marking and accusative case marking, respectively.

- (22) Head-Subject Rule

$$[hd-subj-phrase] \rightarrow \boxed{1} [CASE [GCASE nom]] \quad \mathbf{H} \begin{bmatrix} SUBJ < \boxed{1} \dots > \\ COMPS < > \end{bmatrix}$$

- (23) Head-Complement Rule

$$[hd-comp-ph] \rightarrow \boxed{1} [CASE [GCASE acc]] \quad \mathbf{H} \begin{bmatrix} HEAD | AGT + \\ COMPS < \boxed{1} \dots > \end{bmatrix}$$

To account for multiple case marking, we propose the following two constraints: SUBJ-DEPS composition constraint (for NOM-NOM sequences) and COMPS-DEPS composition constraint (for ACC-ACC sequences).

- (24) SUBJ-DEPS composition constraint (for NOM-NOM sequences)

$$verb \Rightarrow \begin{bmatrix} VAL | SUBJ < [DEPS < \boxed{1} >]_j > \oplus < \boxed{1} i > \\ SEM | RELS \left\langle \dots, \begin{bmatrix} RELN & conceptual\ linking \\ ARG1 & i \\ ARG2 & j \end{bmatrix}, \dots \right\rangle \end{bmatrix}$$

(25) COMPS-DEPS composition constraint (for ACC-ACC sequences)

$$verb \Rightarrow \left[\begin{array}{l} VAL | COMPS < [DEPS < \boxed{2} >]_j, \dots > \oplus < \boxed{2} >_i \\ SEM | RELS \left\langle \dots, \left[\begin{array}{ll} RELN & \text{intrinsic relation} \\ ARG1 & i \\ ARG2 & j \end{array} \right], \dots \right\rangle \end{array} \right]$$

The SUBJ-DEPS composition constraint (24) declares that any DEPS value of the subject argument, if any, which satisfies the *conceptual linking* constraints, is appended to the list of the SUBJ feature. This constraint ensures that the subject argument and all its dependents are specified in the list value of the SUBJ feature. They are all assigned nominative case, since according to Head-Subject Rule (22) all elements in the list value of the SUBJ feature are realized in nominative case.

The COMPS-DEPS composition constraint (25) declares that any DEPS value of the direct object argument, if any, which satisfies the *intrinsic relation* constraints, is appended to the list of the COMPS feature. This constraint ensures that the direct object argument and all its dependents are specified in the list value of the COMPS feature. They are all assigned accusative case, since according to Head-Complement Rule (23) all elements in the list value of the COMPS feature are realized in accusative case.

One further constraint we need is DEPS composition (26), which ensures that, when a nominal head has a value of the DEPS feature, it inherits the value of the DEPS feature. The basic idea of this constraint comes from the argument composition mechanism.

(26) DEPS composition

$$noun \rightarrow \left[DEPS < [DEPS \boxed{1}] > \oplus \boxed{1} \right]$$

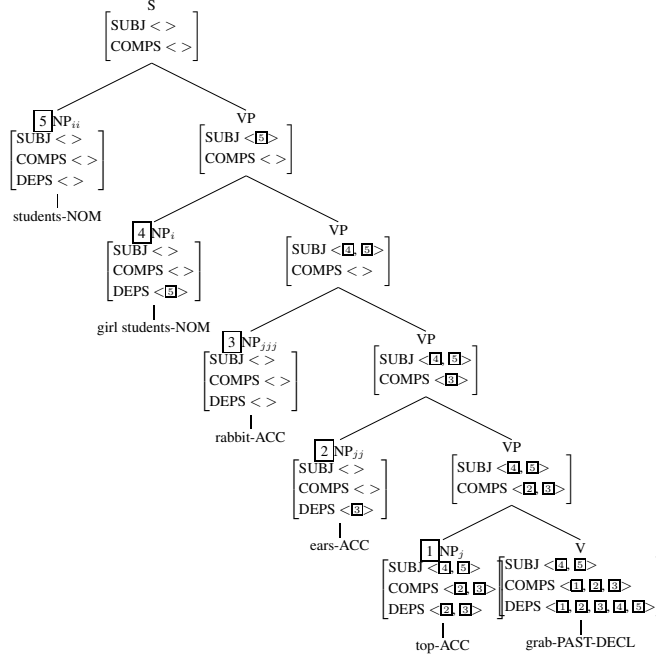
Now, with the constraints in (24) and (25), all the adjuncts share the same case marker with the head of the sequence, i.e. the right-most NP of the sequence. They are marked with nominative case, if they satisfy one of the 16 types subsumed by *conceptual linking* and the right-most NP of the sequence is marked with nominative case. They are marked with accusative case, if they satisfy one of the 10 types subsumed by *intrinsic relation* and the right-most NP of the sequence is marked with accusative case. The sequence of NPs standing in one of the 6 *extrinsic relations* may occur exclusively in multiple nominative constructions.

8 Illustrations and Predictions

To illustrate how the proposal made here works, let us examine a simplified tree of the sentence (1). In this example, two NPs are marked with nominative case, and three NPs with accusative case. The class-membership relation, which is a requirement for nominative case marking, holds between $\boxed{4}$ NP and $\boxed{4}$ NP. The nominative case marker is shared between the two NPs, since $\boxed{4}$ NP is marked with a nominative case. The integral object-component relation, which is a requirement

for accusative case marking, holds between $\boxed{1}$ NP, $\boxed{2}$ NP and $\boxed{3}$ NP. The accusative case marker is shared between these three NPs, since $\boxed{1}$ NP is marked with an accusative case.

(27) A simplified tree of the sentence (2)



The semantic representation of the whole sentence is regulated by Semantic Inheritance Principle (Sag et al. (2003)), which states that in any well-formed phrase structure, the mother's RELS value is the sum of the RELS values of the daughters.

(28) The relevant semantic representation of S (*iop* = *integral object-comp.*, *cm* = *class-membership*)

$$\left[\text{SEM} \mid \text{RELS} \left\langle \begin{bmatrix} \text{RELN } \textit{grab} \\ \text{ARG1 } i \\ \text{ARG2 } j \end{bmatrix}, \begin{bmatrix} \text{RELN } \textit{cm} \\ \text{ARG1 } i \\ \text{ARG2 } ii \end{bmatrix}, \begin{bmatrix} \text{RELN } \textit{iop} \\ \text{ARG1 } j \\ \text{ARG2 } jj \end{bmatrix}, \begin{bmatrix} \text{RELN } \textit{iop} \\ \text{ARG1 } jj \\ \text{ARG2 } jij \end{bmatrix} \right\rangle \right]$$

Some appealing consequences of this proposal include a new comprehensive classification of the sequences of same-case NPs and a straightforward account of some long standing problems such as how the additional same-case NPs are licensed, and in what respects the multiple nominative marking and the multiple accusative marking are alike and different from each other. The ungrammaticality of the sentence (29b) can be accounted for in our analysis, since the relation *space-object* is not a subtype of *intrinsic relation*, which is a requirement for accusative case marking in our proposal.

(29) a. ku haypyen-i miin-tul-i katukha-ta.
that beach-NOM sexy girl-PL-NOM be.crowded-DECL

‘The beach is crowded with sexy girls.’ (Type 11 Space-object)

- b. *na-nun ku haypyen-**ul** miin-tul-**ul** cohaha-n-ta.
 I-TOP that beach-ACC sexy girl-PL-ACC like-PRES-DECL

Note that passive converts the multiple accusative sentences into multiple nominative sentences. This case conversion can be also explained in our account, if we assume that NP₂ is in the COMPS list in (30) and in the SUBJ list in (31), respectively.

- (30) John-i [NP₁ thokki-lul/*ka] [NP₂ kuy-lul/*ka] cap-ess-ta. (active)
 John-NOM rabbit-ACC/*NOM ear-ACC/*NOM grab-PAST-DECL
 ‘John grabbed the ears of rabbits.’
- (31) [NP₁ thokki-ka/*lul] [NP₂ kuy-ka/*lul] John-eykey cap-hi-ess-ta. (passive)
 rabbit-NOM/*ACC ear-NOM/*ACC John-BY grab-PASS-PAST-DECL
 ‘The ears of rabbits were grabbed by John.’

9 Conclusion

This paper presents a unified approach to multiple nominative and accusative constructions in Korean. We identify 16 semantic relations holding between two consecutive NPs in multiple case marking constructions, and propose each semantic relation as a licensing condition on double case marking. We argue that the multiple case marking constructions are merely the sequences of double case marking, which are formed by dextrorotatorily sequencing the pairs of the same-case marked NPs of same or different type. We show that, while the nominative case marker is shared between two consecutive NPs standing in one of the 16 semantic relations, multiplication of the accusative case marker is possible between two consecutive NPs standing in only one of the 10 semantic relations.

Some minor findings made in this paper are as follows: (i) only the rightmost NP is subject or object, and all the other additional NPs are adjuncts, (ii) the additional NPs are case-marked via case sharing between the two consecutive NPs, (iii) the additional NPs may optionally be a focus, but it may not assign a case, and (iv) the licensing condition for the additional NPs is *conceptual linking*, and (v) multiple case marking is not confined to the stative verbs.

Some appealing consequences of this proposal’s findings include a new comprehensive classification of the sequences of same-case NPs and a straightforward account of some long standing problems such as how the additional same-case NPs are licensed, and in what respects the multiple nominative marking and the multiple accusative marking are alike and different from each other. Importantly, we showed that this new insight enables us to solve many previously unresolved questions without invoking any further *ad hoc* assumptions.

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