CONJUNCTION REDUCTION and ITS CONSEQUENCES for NOUN PHRASE MORPHOSYNTAX in KOREAN

JAMES HYE SUK YOON and WOOSEUNG LEE
University of Illinois, Urbana-Champaign

1. Introduction

This paper investigates the properties of two types of surface NP coordinations in Korean and claims that one pattern is constituent coordination of NPs whereas the other is derived by ellipsis from a larger, clausal, coordination. We investigate the morphosyntax of the two types of coordinations and show how the morphosyntactic differences between the two types are systematically correlated with the interpretive and distributional differences between the two types.

The result of our investigation will support a view of Korean nominal inflection where the particles that realize nominal morphosyntactic properties are syntactically independent elements, despite the fact that their phonological and morphological properties are typical of lexical affixes. Finally, we discuss some ways in which the elliptical nature of the second type of NP coordination can be modeled.

2. Ellipsis in Nominal Conjunction

2.1. NP Coordinations As Constituent Coordinations

The earliest work on coordination in generative grammar assumed that only sentences can be coordinated as constituents (Chomsky 1957; Gleitman 1965, etc.). Surface coordinations of non-sentential constituents were assumed to arise from reduction - commonly dubbed Conjunction Reduction. However, the sentential analysis of all non-sentential coordinations faces non-trivial problems from facts such as those in (1) below. This is because the putative source of the NP coordinations in (1), the sentences in (2), is ill-formed.

(1) a. The king and queen are an amiable couple
   b. Tom, Dick, and Harry are similar

(2) a. *The king is/an amiable couple and the queen is an amiable couple
   b. The king and queen *is/are an amiable couple

One response to this state of affairs has been to posit that all surface NP coordinations are constituent coordinations. Nonetheless, if we should find that a surface conjunction of NPs fails to denote a plurality of entities – as diagnosed by syntactic and semantic tests – we may infer that it may be because the conjunction arises from an underlying conjunction of sentences by ellipsis. This was the argument in Aoun, Benmamoun, Sportiche (1994, 1999). They argued that in certain Arabic dialects, VSO sentences with conjoined subjects demonstrating First Conjunct Agreement (FCA) are clausal conjunctions whose surface form is derived by (PF) ellipsis. The argument for the clausal analysis of FCA cases comes from the fact that these sentences, despite possessing a surface string of two NPs linked by conjunction, systematically fail to license elements requiring plural NPs.

We show in this paper that there is another language where a surface string of NPs linked by conjunction is amenable to a similar analysis. One type (Type A) is constituent NP conjunction, while the other (Type B) is an elliptical conjunction deriving from a larger, clausal, conjunction. Type B
coordinations in Korean never form NPs, in either the underlying or the surface level of representation. They simply appear to be a constituent conjunction of NPs because of the way that ellipsis works.

3. Two Types of Nominal Conjunction in Korean

A string of NPs can be coordinated in different ways in Korean (Cho & Morgan 1986; Yu-Cho and Sells 1995). We will focus here on the following two types, which we designate Type A and B:

**Type A**: case is marked only on the final conjunct and non-final conjuncts carry the nominal conjunctive suffix –(k)wa (or other conjunctive suffixes such as –hako).

**Type B**: case-markers occur on all conjuncts and kuliko occurs between the conjuncts.

The two types differ in their morphosyntax, prosody, interpretation, and their syntactic distribution.

Morphosyntactically, Type A is marked by a (nominal) conjunctive suffix (–kwa or –hako) on non-final conjuncts. The final conjunct does not carry the conjunctive (for the conjunctive –kwa) and is case-marked. It is possible for the analytic conjunctor kuliko to be added after the conjunctive-marked NP. However, this sounds redundant. We thus examine forms without the doubled kuliko in what follows. In Type B, all conjuncts carry case-markers and the analytic conjunction kuliko occurs between all conjuncts. The two types are illustrated in (3a-b) below.

(3) a. John-kwa Mary-ka cip-ey ka-ss-ta (Type A)
   J-conj   M-nom   home-loc go-pst-decl
b. John-i kuliko Mary-ka cip-ey ka-ss-ta (Type B)
   J-nom and M-nom home-loc go-pst-decl
   ‘John and Mary went home.’

Prosodically, Type B conjunction is characterized by a pause after the first (case-marked) conjunct, whereas in Type A, a pause is not necessary. Interpretively, the two differ as follows. (3a) describes a situation where John and Mary could have gone home together or separately, whereas (3b) implies separate events of John and Mary going home.

Now, since ‘going home’ can be distributive, the two readings are not disambiguated clearly. However, in the following cases, the differences become more salient. For example, (4a) is interpreted primarily in the collective sense (reading 2) by most speakers. (4b), by contrast, draws an almost unambiguous response as a distributive.

(4) a. John-kwa Mary-ka ochen-pwul-ul pelessta
   J-conj   M-nom  5000-dollars-acc made
b. John-i kuliko Mary-ka ochen-pwul-ul pelessta
   J-nom conj M-nom  5000-dollars-acc made

#1: John and Mary each made $5000
#2: John and Mary together made $5000
(4a): 2 > 1   (4b): 1 > 2

Now, because it implies multiple events, the interpretation of Type B coordinations in most cases is similar to distributivity. And, on the basis of the initial preference for a collective interpretation, we might think that Type A is either an obligatorily collective NP coordination, or else a Comitative structure, since Comitatives are collective. However, this is not the case. Type A coordinations are compatible with both collective and distributive predicates. This is shown in (5) below.

(5) a. John-i cip-ey Mary-wa ka-ss-ta (Comitative)
   J-nom home-loc M-with go-pst-decl
   ‘John went home with Mary.’
b. *John-i cip-ey kakkak Mary-wa ka-ss-ta (Comitative)
   J-nom home-loc each M-with go-pst-decl
   ‘*John went home with Mary each.’
Morphosyntactically, Type A structures seem to be what Johannesen (1997) calls Unbalanced Coordination. Type B looks like a Balanced Coordination, as it is case-marked symmetrically on all conjuncts. However, it turns out that Type A is the normal, balanced, constituent NP coordination and Type B is not a constituent NP coordination at all. The argument for the latter rests on demonstrating that Type B coordinations do not have properties we expect constituent NP coordinations to have.

3.1. Arguments for the Ellipsis Analysis of Type B Coordinations

Conjoined NPs denote a plurality of entities. If Type B coordinations do not form constituent NPs, we expect them to be incompatible with predicates or modifiers that require plural NPs. This prediction is confirmed, as we see below.

3.1.1. Collective Modifiers

(6) a. Cheli-wa Yenghi-ka chayksang-ul hamkkey mantul-ess-eyo
   C-conj Y-nom desk-acc together make-past-decl
b. *?Cheli-ka kuliko Yenghi-ka chayksang-ul hamkkey mantul-ess-eyo
   C-nom conj Y-nom desk-acc together make-past-decl
‘Chelswu and Yenghi made a desk together.’

As shown in (6), the collectivizing reading of the modifier hamkkey (as opposed to the accompaniment reading – Lasersohn 1995) is incompatible with Type B coordinations. This is predicted if Type B conjunctions are not constituent NP conjunctions and do not form a plural-denoting conjoined NP.

3.1.2. Collective Predicates

Likewise, Type B coordinations are marginal with collective and symmetric predicates, unlike Type A coordinations. This is expected if they derive from a clausal source with singular NP subjects.

(7) a. Cheli-wa Yenghi-ka pwupwu-ya
   C-conj Y-nom couple-cop.decl
b. *Cheli-ka kuliko Yenghi-ka pwupwu-ya
   C-nom conj Y-nom couple-cop.decl
‘Cheli and Yenghi are a couple.’

(8) a. Cheli-wa Yenghi-ka heyeci-ess-ta
   C-conj Y-nom break.up-pst-decl
b. *Cheli-ka kuliko Yenghi-ka heyeci-ess-ta
   C-nom conj Y-nom break.up-pst-decl
‘Cheli and Yenghi broke up.’

3.1.3. Collective Prenominal Modifiers (Heycock and Zamparelli 2003)

Collective pronominal modifiers yield an even sharper contrast between Type A and B coordinations. This is shown in (9) below. The ill-formedness of the pre-ellipsis source of (9b) is the culprit.

(9) a. cal ewulli-nun namca-wa yeca-ka pang-ulo tuleossta
   well matched-rel man-conj woman-Nom room-into enter-pst-decl
b. *cal ewulli-nun namca-ka kuliko yeca-ka pang-ulo tuleossta
   well matched-rel man-nom conj woman-Nom room-into entered
‘A well-matched man and woman entered the room.’
3.1.4. **Type B Coordinations Are Not Constituents**

While Type B coordinations allow adverbs to intervene between the two conjuncts, and, more importantly, allow two different adverbs of the same type modifying two different events, as shown in (10a’), Type A coordination in (10a) cannot be separated by adverbs. And even when adverbs don’t separate the conjuncts, only one adverb of a given type can occur, as shown in (10b-b’).

(10) a. *Cheli-wa himtulkey Yenghi-ka il-ul ha-nta
    C-conj with.difficulty Y-nom work-Acc do-decl
    ‘Cheli and Yenghi do the work with a lot of effort.’

   a’. Cheli-ka himtulkey kuliko Yenghi-ka swipkey il-ul hanta
    C-nom with.difficulty conj Y-nom easily work-Acc do-decl
    ‘Cheli does the work with difficulty and/but Yenghi does the work with ease.’

b. Swipkey Cheli-wa Yenghi-ka chayksang-ul olmkyessta
    Easily C-conj Y-nom desk-acc moved
    ‘Cheli and Yenghi moved the desk with ease.’

b’. *Swipkey Cheli-wa Yenghi-ka himtulkey chayksang-ul olmkyessta
    Easily C-conj Y-nom with.difficulty desk-Acc moved
    ‘Cheli moved the desk easily and/but Yenghi moved the desk with difficulty.’

The string **Cheli-ka himtulkey** in (10a) is not a constituent, as its constituency cannot be verified by any other standard constituency test except for Type B coordination. This is expected on the ellipsis analysis. The non-constituency of Type B coordinations receives further support from the following types of evidence.

3.1.5. **Type B Coordinations Do Not Have NP Distribution**

There are certain positions where only NPs can occur. Naturally, Type B coordinations cannot occupy such positions, while Type A coordinations can.

**Free-standing NPs**

A free-standing NP can be Type A coordinate structure, but not Type B. This is shown below in (11).

(11) a. il-ul swipkey ha-nun Cheli-wa Yenghi
    work-acc easily do-rel C-conj Y
    ‘Cheli and Yenghi, who do the work effortlessly’

b. *Il-ul swipkey ha-nun Cheli-ka kuliko Yenghi
    work-acc easily do-rel C-nom conj Y
    ‘Cheli and Yenghi, who do the work effortlessly’

The reason Type B coordinations are out as free-standing NPs is that there is no larger source from which they can be reduced.

**Focus of Cleft**

The focus of Cleft is an NP with no case-marking (Yoon 2003, J-M Jo 2004, etc.). Type A but not Type B coordinations can occur as the focus of a Cleft construction. This is predicted if Type B structures are not NPs.

(12) a. Il-ul swipkey hanun kes-un Cheli-wa Yenghi-i-ta
    work-acc easily do.rel thing-nom C-conj Y-cop-decl
    ‘It is Cheli and Yenghi who do the work with no effort.’

b. *Il-ul swipkey hanun kes-un Cheli-ka kuliko Yenghi-(ka)-i-ta
    work-acc easily do.rel thing-nom C-nom conj Y-(nom)-cop-decl

Only **(-man)**

Type A coordinations, being an NP, can be marked with –man (only) taking scope over the conjoined NP. Type B cannot, by contrast:
b. *John-i kuliko Mary-man-i o-ass-ta
   J-nom conj M-only-nom come-pst-decl
   Intended: ‘Only John and Mary came.’

The source of the Type B conjunction in (13b), (14), is ill-formed. It asserts that John came, so it
cannot be the case that only Mary came.

(14) *John-i o-ass-ta kuliko Mary-man-i o-ass-ta
   J-nom come-pst-decl conj M-only-nom come-pst-decl

3.1.6. Disjunction and Negation

We can also find Type A and Type B coordinations in disjunctive coordination. Han and Romero
(2004) note the following contrast.

(15) a. Chelswu-ka kophi-na cha-lul masi-ess-ni?
   C-nom coffee-or tea-acc drink-pst-Q

b. Chelswu-ka kophi-lul animyen cha-lul masi-ess-ni?
   C-nom coffee-acc or tea-acc drink-pst-Q

(15a) has two readings:
   #1: y/n reading = It is true or not that C drank coffee or tea?
   #2: alternative reading = Did C drink coffee or he did drink tea?

(15b) has only the second, alternative reading. Han and Romero (2004) attribute the difference to the
fact that the latter is derived by Ellipsis from a clausal disjunction (where in 15b disjunction scopes
above the question operator).

4. The Morphosyntax of Case-marked Nominals and Nominal Conjunctions

In most languages with morphological case-marking, a string of conjoined NPs must be individually
case-marked in each conjunct. This is shown in the German sentence below:

(16) Der Vater und seine Tochter gehen ins Kino zusammen

‘The father and his daughter go to the theater together.’

Therefore, the questions that the two types of nominal conjunctions in Korean raise are the following:
Why is Type A coordination case-marked only on the final conjunct? Why are Type B coordinations
case-marked on all conjuncts? And, why does case-marking correlate with constituent vs. elliptical
coordination?

We will propose the following. Case-markers (Nom, Acc minimally) are syntactically Head-initial
functional heads which c-select verbal constituents as complements (Kayne 1994; Whitman 1998;
Yoon 1998; J-M Jo 2004, etc.). Thus, case-markers are not lexically attached suffixes. Their surface
position is the result of morphological encliticization of the case-marker to the right margin of XPs in
their Spec. What is crucial in this analysis is that a string of NP followed by the case-marker is not a
syntactic constituent (but the NP without a case-marker is). The analysis is illustrated below:
NomP (equivalently, AgrSP or TP - Whitman 1998)

\[
\begin{array}{c}
\text{NP} \\
\downarrow \\
\text{Cheli} \\
\text{Nom} \\
\downarrow \\
\text{-ka} \\
\uparrow \\
\text{VP (or AgrOP or AccP)} \\
\end{array}
\]

Many questions remain about the exact implementation of this type of analysis (such as the analysis of Scrambling), but it should be obvious that this analysis derives two central facts about Type B coordinations – they are clausal and do not form constituents.

In particular, the analysis implies that a case-marked NP without a following predicate is an elliptical structure, because a case-marker always selects a verbal XP as complement. The structure of Type B coordination is shown schematically in (18a).

(18) a. \[
[\text{NomP} \ [\text{NP Chelswu}] \ [\text{Nom'} \ -ka \ \text{VP}]] \]
\[ \text{kuliko} \ [\text{NomP} \ [\text{NP Yenghi}] \ [\text{Nom'} \ -ka \ \text{VP}]] \ldots
\]

b. \[
[\text{NomP} \ [\text{NP Chelswu}] \ [\text{wa} \ [\text{NP Yenghi}]] \ [\text{Nom'} \ -ka \ \text{VP}]]
\]

Type A coordinations (shown in 18b), by contrast, are NPs. The analysis also predicts that Type A coordinations are case-marked once on the final conjunct because the entire conjoined NP is in the Specifier of NomP.

5. Mechanisms of Ellipsis/Reduction

5.1. The Generalizations

ABS’s (1994, 1999) argument for a clausal analysis of FCA in Arabic rested on the demonstration that the surface string of conjoined NPs does not act as plural-denoting with respect to elements that are sensitive to number (Number Sensitive Items, NSIs). Our argument thus far has been based on collective modifiers and predicates, non-constituency, non-NP distribution, and the scope of disjunction of Type B coordinations relative to Type A coordinations. However, when we turn to other NSIs, such as distributive modifiers, they are unexpectedly acceptable with Type B coordinations. This is something that is not predicted under the ellipsis analysis.

The expression *kakkak* (‘each’) is possible in Type B coordinations.

(19) a. Cheli-wa Yenghi-ka kakkak cip-ulo kass-ta
C-conj Y-nom each home-loc went-decl

b. Cheli-ka kuliko Yenghi-ka kakkak cip-ulo kass-ta
C-nom conj Y-nom each home-loc went-decl
‘Cheli and Yenghi each went home.’

Now, the problem with the acceptability of (20) is that the putative pre-Ellipsis structure is not grammatical.

(20) *Cheli-ka \[\text{kakkak} \ [\text{cip-ulo} \ [\text{kass-ta}]] \text{kuliko} (=19b)\]
C-nom each home-loc went-decl conj
Yenghi-ka kakkak cip-ulo kass-ta
Y-nom each home-loc went-decl


(21) a. John-un sengkyeng-ul kuliko Mary-nun capci-lul kakkak ilk-ess-ta
J-top bible-acc conj M-top magazine-acc each read-pst-decl
‘John read the bible and Mary a magazine.’

b. *John-un sengkyeng-ul kakkak ilk ess ta kuliko
Mary-nun capci-lul kakkak ilk ess-ta
The Copied Plural Marker (CPM) –*tul*, which is normally thought to require a plural NP subject, can show up in the shared predicate of a Type B coordination. This is a problem as illustrated schematically in (22b).

(22) a. John-i kuliko Mary-ka swukcey-lul cip-eyse-tul hayssta
    J-nom conj M-nom homework-acc home-loc-CPM did
    ‘John and Mary did their homework at home.’

    b. *John-i swukcey-lul cip-eyse-tul hayssta kuliko
       Mary-ka swukcey-lul cip-eyse-tul hayssta

Though these problems seem to cast doubt on the ellipsis-from-clause analysis, there are also facts that support it, as we have seen earlier. We thus need to make sure that whatever account we adopt does justice to the full range of generalizations discovered thus far. These are stated in (23) below.

(23) a. Type B coordinations are not constituents.
    b. Type B coordinations differ interpretively from Type A coordinations.
    c. Certain NSI’s cannot occur in the predicate of Type B coordinations (collective predicates and modifiers).
    d. NSI’s that can occur in the shared predicate in Type B coordinations are modifiers of plural (pluractional – Lasersohn 1995) events, rather than modifiers that depend on the plurality of the subject NP.

We have already established the first and second points. The argument we are making now, in light of the claims in (23c,d), is that distributives like *kakkak* and the Copied Plural Marking –*tul* are, or have uses as, modifiers of pluractional events, rather than/in addition to being modifiers of plural-denoting nominals as in (24).

(24) a. *kakkak*: Modifier of pluractional events and modifiers of plural nominals (cf. Benmamoun 1999 on two types of QFloat in Arabic)
    b. CPM -*tul*: Marks event plurality (H-G Lee 1992; Ym 2002)

The occurrence of –*tul* with singular subjects in (25) below illustrates its event-modifying use.

(25) ?ai-ka phwungsen-ul hana-ssik kacko-tul nolassta
    child-nom balloon-acc one-dist holding-CPM played
    ‘The child played with each balloon.’

In sum, we want an analysis of Type B coordinations that treats them as non-constituents, disallows genuine collectives but allows modifiers of pluractionality. In what follows, we sketch two possible analyses that will do the job.

5.2. Multi-dominance Analyses

A multi-dominance analysis of ellipsis in Type B coordination in the style of McCawley (1982, 1989), Wilder (1997, 1999), and D-H Chung (2004) is sketched in (26) below. The VP below is dominated by two NomP’s (with two Subjects, and hence, denoting two separate events) but each NomP has a singular NP in its Specifier:
There are several advantages of such analyses. First, the analysis explains the non-constituency of Type B coordinations. Second, if we make the assumption that this kind of structure is interpreted as denoting plural events but not plural entities, as suggested above, we can see how this analysis explains the generalization that modifiers of plural action events are possible, but not modifiers that depend on having plural NPs as licensors.

5.3. Ellipsis and Displacement

A way to salvage the Ellipsis (PF-Deletion) analysis is to capitalize on the fact that the event modifiers in the shared predicate portion of Type B coordinations can occur once in an unreduced sentential coordination, taking scope over the entire structure. We illustrate this with kakkak.

(27) Cheli-ka cip-ey kassta kuliko Yenghi-ka hakkyo-ey kassta, kakkak
C-nom home-loc went conj Y-nom school-loc went each

The idea is to posit such structures as the source of Type B coordinations, with optional displacement of verbs following Ellipsis. Both outputs (with and without Displacement) are attested.

(28) Cheli-ka cip-ey kassta kuliko Yenghi-ka hakkyeo-ey kassta kakkak
→ Ellipsis
Cheli-ka cip-ey kassta kuliko Yenghi-ka hakkyeo-ey kassta kakkak
→ Displacement
Cheli-ka kuliko Yenghi-ka hakkyo-ey kakkak kassta
→ No Displacement
Cheli-ka kuliko Yenghi-ka hakkyo-ey kassta kakkak

Displacement explains why kakkak cannot occur in the first conjunct in Type B coordinations (which allows remnants other than the subject NP, yielding RNR, as we have seen).

(29) a. Cheli-ka ecey kuliko Yenghi-ka onul kakkak ttenassta
C-nom yesterday conj Y-nom today each left

b. *Cheli-ka ecey kakkak kuliko Yenghi-ka onul ttenassta
C-nom yesterday each conj Y-nom today left

6. Conclusion
The purpose of this paper has been to show that a surface string consisting of case-marked NPs connected by a conjunctor is not a constituent NP coordination. The morphosyntax of case-marking in Korean, coupled with ellipsis, provide an explanation of why this is so. Though works remains, we take this to be an encouraging first step in the right direction.

References

