

Agreement of NP and VP Coordination in English and Korean

Sung-Ryong Hong and Won-Shik Na
Namseoul University

Hong, S-R., & Na, W-S. (2011). Agreement of NP and VP coordination in English and Korean. *Journal of Pan-Pacific Association of Applied Linguistics*, 15(1), 207-219.

There have been long argumentations about this topic and people are still having difficulty in explaining precisely what the agreement values the mother NP phrase should have from two conjunct daughters which have different AGR (Agreement) values. Especially, this could be more complicated when the values of gender, number, and person of each conjunct daughter are different from each other. This structure is furthermore complicated when this NP coordination construction is placed on the subject for the agreement between NP and VP has to be revealed based on the exact linguistic theory. The most difficult constructions to describe are the ones with reflexive in addition to NP coordination in subject position. The information of AGR of subject NP is to be identified or shared with the reflexive agreement values such as gender, number, and person. The purpose of this study is to determine the coordination constructions of NP on the subject to reveal how the mother NP has the AGR value working with each conjunct, and how this AGR value of mother NP should be identified with the AGR value of VP as well as with reflexive, if any. Some Schemas are proposed in this paper to analyze this construction and are applied to the coordination of VP constructions which have honorific features.

Key Words: person, number, gender, agreement, conjunction, coordination

1 Introduction

English constructions are said to be classified into two types such as conjunction of “and” and disjunction of “or”. We find this to be an interesting fact in that the number and gender values have to be identified with the second conjunct in a positive sentence but with the first conjunct in question sentence in a disjunction coordination construction.

On the contrary, when a coordinative NP are composed with two conjuncts which have the values of single number, respectively, the reason why a mother NP has the value of plural number has to be described with

Sung-Ryong Hong and Won-Shik Na

only Feature Co-occurrence Restriction¹ in General Phrase Structure Grammar(GPSG) which was proposed by Gazdar & Gerald (1985).

These coordination constructions may be analyzed with strong version or weak version in the Head Phrase Structure Grammar (HPSG) saying that the category of conjunction daughters and nonlocal value is to be the extension of mother Noun Phrase. Detailed analyses on these matters of number and gender are not to be specified or even not described in HPSG for these values are in the category of SYNSEM | LOC | CONT | PARA | IND.

This study aims to show that these NP coordinate constructions are located in the subject with reflexive in the same sentence by sub-dividing the constructions into the three ones such as <Disjunction, -INV>, <Disjunction, +INV>, <Conjunction, AND>.

This classification may be analyzed based on the constructions of the following examples.

- (1) a. Are you or I going to lead the parade?
- b. Neither my father nor my brothers are coming.

The purpose of this paper is also to study the VP coordinate constructions with honorific feature in Korean. The following are some examples which will be discussed in this study.

- (2)*a. Halabeoji-ga tennis-leul chi-go jumu-sin-da.
 Grandfather-Hon-Nom tennis-Obj play and sleep-Hon
- b. Halabeoji-Keseo tennis-leul chi—si-go jumu-sin-da.
 Grandfather-Hon tennis-Obj play-Hon and sleep-Hon
- c. Halabeoji-Keseo tennis-leul chi—go jumu-sin-da.
 Grandfather-Hon tennis-Obj play and sleep-Hon
- *d. Halabeoji-Keseo tennis-leul chi—si-go jan-da.
 Grandfather-Hon tennis-Obj play-Hon and sleep

Like the construction examples in (2), Verb Phrase has the coordinate structures which are composed of two VP conjunct daughters. In (2c), VP has honorific features of <-hon> CONJ <+hon>, which leads the sentence to be grammatical. On the other hand, VP has a coordinate structure of VP <+hon> CONJ <-hon> in (2d), which proves that this sentence is ungrammatical.

One is right, but the other is wrong in that (2c) has honorific feature in the second VP conjunct, but (2d) has the one in first conjunct daughter. This difference will be discussed on this paper, which has not been studied in

¹ The definition of Feature Co-occurrence Restriction(FCR) is to make the value of number in coordination with conjunction and where each conjunct daughter has the value of feature [NUM sing]. FCR: [NP [CONJ] and]] ~[+SING]

Agreement of NP and VP Coordination

HPSG. This paper generally accepts the concepts and principles of HPSG and Park B-S (1990)'s proposal to analyze the NP coordinate constructions in English as well as the VP constructions in Korean.

2 A Coordinate Constructions and Agreement of Noun Phrase

2.1 A GPSG approach on NP coordination

The feature value on person and number in Noun Phrase plays a role in determining the types of Verb Phrase and the person of reflexive². The latter will be shown through the GPSG approach.

To explain the structure of person in Noun Phrase Coordination, GPSG has an assumption that feature person is analyzed with feature XSP (Excluding Speaker) and THP (Third Person). These features only have the value of “+”, which means that a traditional category of person is replaced with the feature specification like, as in (3).

- (3) a. 1st Person: { }
- b. 2nd Person: {[+XSP]}
- c. 3rd Person: {[+THP], [+XSP]}

In other words, since both XSP and THP are HEAD features, the person feature specification of NP coordination are to be the intersection of feature person specification specified on each conjunct which plays the role of HEAD.

For example, in (4) which represents the features instead of the generalization of (3), the set of feature person specification in NP coordination has to be the intersection of feature person specification of each conjunct, which adhere to the rules of Head Feature Principle (HFP)³.

(4) Feature of Noun Phrase Coordination

NP	NP	NPa CONJ NPb
{ }	{ }	{ }
{ }	{[+XSP]}	{ }
{ }	{[+XSP],[+THP]}	{ }
{[+XSP]}	{[+XSP]}	{[+XSP]}
{[+XSP]}	{[+XSP],[+THP]}	{[+XSP]}
{[+XSP],[+THP]}	{[+XSP],[+THP]}	{[+XSP],[+THP]}

² Example. Kerry or you have perjured yourselves.

³ Head Feature Principle (HFP):

The HEAD value of a headed phrase is identified with that of its head-daughter.

Sung-Ryong Hong and Won-Shik Na

Now, let us see the examples which determine the types of Verb Phrase with the number feature on NP coordination.

- (5) a. The boys and the girls seem / *seems happy.
 b. Either the boys or the girls are / *is going to be there.
 c. There students and Professor Swansong are / *is meeting in the park.
 d. Either Professor Swansong or the graduate students are / *is going to invigilate the exam.
 e. Either Dana or Lee is / *are going to lead the parade.
 f. Kim and Terry are / *is happy

The semantic information which can be derived from (5) is the information that the number value of NP coordination is always [number +plural] while the number of each conjunct is plural. It may be said that the value of NP coordination is always [number +plural] since the value of each conjunct is different. One is plural, and the other singular.

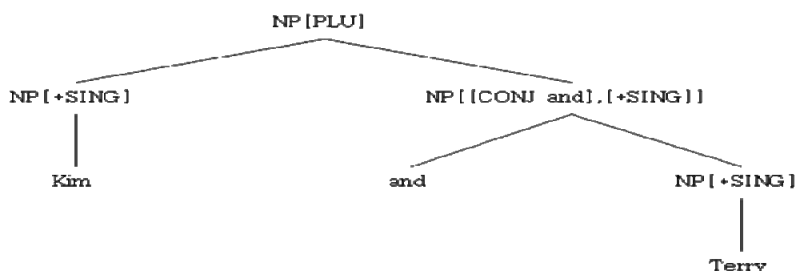
The number value for NP coordination which has conjuncts with value of [number singular] is either singular or plural. These facts can be described with [feature SING] which is the HEAD feature.

(6)

	NP _a	NP _b	NP _a CONJ NP _b
i)	{ [+SING] }	{ }	{ }
ii)	{ }	{ [+SING] }	{ }
iii)	{ [+SING] }	{ [+SING] }	{ [+SING] }
iv)	{ }	{ }	{ }

However, considering the tree diagram of (7) for NP coordination of (5f), this example could be the exception for (6).

(7) Kim and Terry



Agreement of NP and VP Coordination

The feature [SING] of each conjunct, HEAD, has to be specified to the mother NP by Head Feature Convention (HFC), otherwise this sentence is predicted to be wrong. To guarantee the number [plural] of mother NP with two conjuncts which has [number singular], Feature Co-occurrence Restriction (FCR) should be established.

2 HPSG Coordination Principle

There is a fundamental difference in the analysis of coordination constructions between GPSG and HPSG. One is that coordination constructions in English have unheaded structure in HPSG. The other is that feature SLASH is not dealt with head feature. The agreement, therefore, between conjuncts is not applied to HFP or SLASH Inheritance Principle.

The Coordination Principle has a relation with Element Constraint⁴ in that the value of INHER|SLASH of each conjunct is identified with that of NP mother. Another approach for this question is to accept the suggestion of Sag (1985) on coordination analysis. Namely, coordination structure may include the primary category or the partially specified feature.

(8) Coordination Principle (weak version)

In a coordinate structure, the CATEGORY and NONLOCAL value of each conjunct daughter is subsumed by (is an extension of) that of the mother.

Coordination Principle solves the problem of [+Aux] and [-AUX] by allowing the coordinate mother to be unspecified on feature AUX, as in (9).

(9) Unspecified Feature Value

This structure may appear in situations whereby any condition is not applied on the value of VP AUX. This weak version of Coordination Principle has a relationship with Element Constraint. In other words, the head daughter should be [finite S] and to be specified as INHER|SLASH {[1]} by HFP and SLASH Inheritance Principle⁵.

3 An Alternative Schema

The following examples are problems which cannot be explained by both GPSG and HPSG in that these theories cannot predict the grammaticality of a sentence which has subject NP coordination agreeing with the AGR value of

⁴ head daughter should be [finite S] to be specified as INHER|SLASH {[1]} by HFP

⁵ Semantic Inheritance Principle(SIP)

In any headed phrase, the mother's MODE and INDEX value are identical to those of the head daughter.

Sung-Ryong Hong and Won-Shik Na

VP with reflexives such as [feature PER, GEND, NUM]. From the examples in (10), a new alternative has been introduced to explain the agreement between subject coordination and Verb Phrase.

- (10) a. Either you or I am responsible for it.
 b. You or I am going to lead the parade.
 c. Are you or I going to lead the parade?

It is found that subject coordination cannot be explained by either the concept of multiple head in GPSG or strong version and weak HPSG version. For correct analysis on the agreement between NP and VP, a new alternative is introduced by using some schemas in this paper.

To explain person and number agreement on subject coordination, these constructions are to be divided into three categories such as <Disjunction, -INV>, <Disjunction, +INV> and <Conjunction, AND>. The following schemas may correctly predict the grammaticality for the examples in (10).

(11) Schema I

< Disjunction, -INV >	NPa	NPb	NPa CONJ NPb
where {<either ~ or><or> {	}	{[NUM α]}	{[NUM α]}
<not only ~ but also> }	{	{[PER β]}	{[PER β]}

(12) Schema II

< Disjunction, +INV >	NPa	NPb	NPa CONJ NPb
where {<+QUE><as well as>	{[NUM α]}	{ }	{[NUM α]}
	{[PER β]}	{ }	{[PER β]}

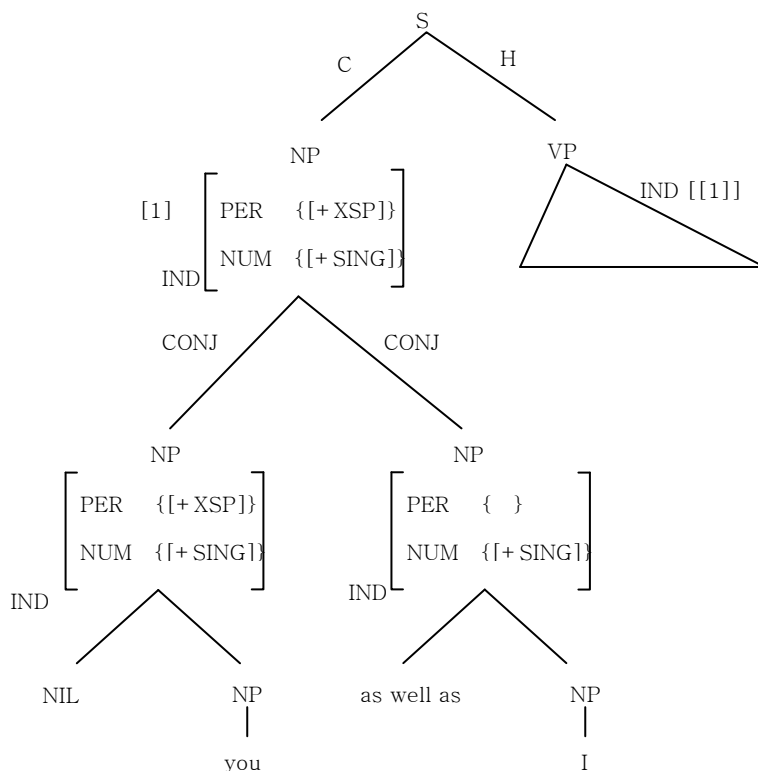
(13) Schema III

	NPa	NPb	NPa CONJ NPb
where {<neither ~ nor >	{	{[NUM α]}	{[NUM α]}
<both ~ and> <and> }			

Schema I definition predicts AGR agreement of mother NP with that of the second conjunct for the structure with {<either ~ or> <not only ~ but also> <or>}. Through Schema II definition, the agreement with the first conjunct can be explained at the constructions with a conjunction of “as well as” and with a question sentence.

Sung-Ryong Hong and Won-Shik Na

(15) You as well as I are responsible for it.



(15) shows the different values of AGR from (14) in that the subject NP with coordination shares the one with first conjunct, NP_a. The crucial key for this difference lies in the value of conjunction, [feature as well as]. This means that "as well as" is treated as a conjunction and the lexical & semantic information is projected up to NP mother node. This information includes the agreement property that its mother NP should share the AGR value with that of first conjunct. Therefore, (15) has to be applied with Schema II since the conjunction of "as well as" is regarded with the category of <Disjunction, +INV>. This Schema II makes the value ([1]) of AGR of VP share with the one ([1]) of NP, which leads to the Sub-categorization Principle satisfied.

3. Honorific Agreement in Korean

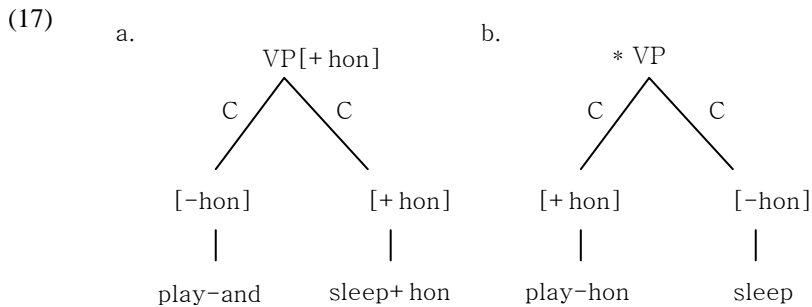
To contrast the NP coordination in English, the VP coordination in Korean is presented on this paper. Unlike English, Korean applies an honorific feature in speaking with seniors, which could be more complicated when involved in coordination as well as agreement. From the point of linguistics, these

Agreement of NP and VP Coordination

sentences as in (16) show some interesting characteristics.

- (16)*a. Halabeoji-ga tennis-leul chi-go jan-da.
 Grandfather-Hon-Nom tennis-Obj play and sleep
 b. Halabeoji-Keseo tennis-leul chi—si-go jumu-sin-da.
 Grandfather-Hon tennis-Obj play-Hon and sleep-Hon
 c. Halabeoji-Keseo tennis-leul chi—go jumu-sin-da.
 Grandfather-Hon tennis-Obj play and sleep-Hon
 *d. Halabeoji-Keseo tennis-leul chi—si-go jan-da.
 Grandfather-Hon tennis-Obj play-Hon and sleep

The question is that, how can the difference of (16c-d) be described in HPSG as well as in GPSG since (16c) has a VP coordination of [-hon] CONJ [+hon] while (16d) [+hon] CONJ [-hon]. One is predicted as a grammatical sentence, while the other is wrong although there is only a difference of absence of the presence of feature [honorific].

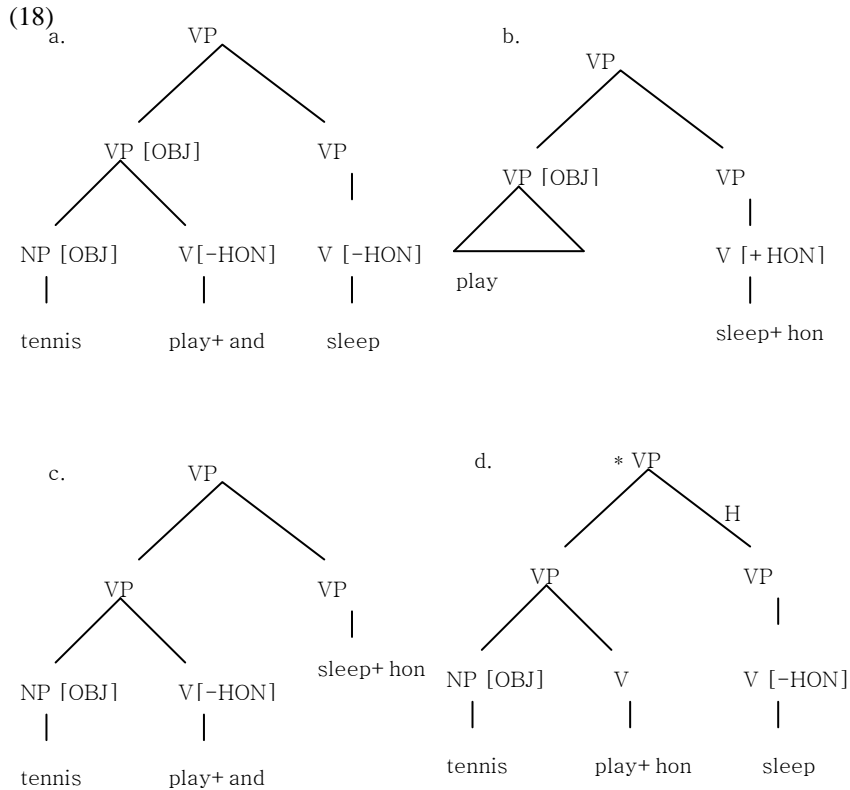


The tree diagram of (16c) and (16d) can be represented with (17a) and (17b) respectively. In (17), the conflict of feature of [-hon] and [+hon] is shown.

To explain these kind constructions in Korean, it is proposed in this paper to allow the feature [+hon] to be head feature unlike in the HPSG coordination approach.

In the structure of VP coordination in Korean, the second conjunct is to be analyzed as head daughter not as a conjunct daughter while the first conjunct as conjunct daughter as in (18).

Sung-Ryong Hong and Won-Shik Na



To analyze the difference of grammaticality in (18a-d), the definition of feature [HON] is to be introduced to distinguish the function of daughters of VP honorific coordination in Korean as head daughter and conjunct daughter.

(19) Definition of feature [HON]

The feature [HON] is to be head feature and one INDEX values and HON attribute is to have the value of $\langle +, -, \{ \} \rangle$.

(20) The HFP principle on [HON] value

If the value of head in a Sign has feature [+hon] by Head Feature Principle (HFP), [+HON] is to be marked as CONT|PARA|INDEX of Verb Phrase. On the contrary, when the value of a head has [-hon], feature [-HON] is to be specified as INDEX of Verb Phrase.

This means that the AGR value of VP should have the same one with the head daughter as it is the head of VP. If the head daughter of VP has a feature of [-hon], then the AGR value of VP should have the same feature of

Agreement of NP and VP Coordination

[-hon] by HFP. This indicates that the value of feature [hon] on the first daughter of VP, conjunct daughter, does not affect the AGR value of VP. Moreover, this cannot be applied to HFP for it is not head, but the conjunct daughter.

In other words, the feature value of [hon] of conjunct daughter can be marked as { }, which means that it can have any value of [hon]. This implies that there is no feature conflict between the values of AGR in conjunct daughter and head daughter of VP as long as the second conjunct has [-hon] unlike in NP coordination in English.

If, however, the head of VP does have feature [+hon], then, the AGR value of NP should have an agreement with feature of [+hon]. Otherwise, the agreement between NP and VP has the conflict of AGR value, which leads to be ungrammatical. The head of VP coordination is designated to be the second conjunct for it plays as a head daughter in (20).

In (18a) and (18d), *Jan-da* (sleep) is the head which has [-hon] as it is the head daughter and second conjunct of VP coordination. This means that the AGR value of VP coordination has the same value of feature [-hon] by HFP. Here, the difference with English NP coordination is that the conjunct daughter (play+and) of VP may have any value of [HON] for its mother VP does not share this value with the conjunct daughter. The AGR value of feature [+hon] in NP does have feature conflict with that of VP [-hon], which can be predicted to be ungrammatical by Agreement Principle and in (20).

On the other hand, in (18b) and (18c), *jumusin-da* (sleep+hon) is the head of VP coordination, for it is the head of the head daughter of VP. This means that the AGR value of VP shares the same one with this value of feature [+hon] by HFP. By Agreement Principle, the AGR value of NP does not have any feature conflict, which makes (18b) and (18c) grammatical.

These examples show that it is necessary to distinguish the VP coordination in Korean into Conjunct DTR (daughter) and Head DTR to reflect the right distribution of honorific feature, unlike NP coordination in English.

Another option is that, analysis of these constructions may be studied later thru the polarity of speaker concept using both content and context.

4 Conclusion

Generalized Phrase Structure Grammar was analyzed with the daughters of the coordination constructions as the multiple head.

This approach is rather complicated to explain the agreement of AGR value such as person and number between subject NP coordination and VP.

The concept of extension is introduced for the analysis of the category, number, and person of coordination. GPSG has only to set the filter such as Feature Co-occurrence Restriction to analyze the AGR value of the coordination with [both NP_a{NUM sing} and NP_b{NUM sing}], which

Sung-Ryong Hong and Won-Shik Na

results in the NP coordination to have the value of AGR {[+plu]}. For the pronoun coordination such as “*Either you or I am responsible for it.*” there is no coordination theory to predict its grammaticality in regards to the agreement of the value of AGR between NP and VP in GPSG.

Head Phrase Structure Grammar is trying to approach the coordination with strong and weak versions allowing that the category and nonlocal value of each conjunct daughter are the extension of the mother node. This approach, however, does not specify the agreement of subject NP coordination.

The aim of this study, therefore, is to propose three Schemas dividing the existing coordination into <Disjunction, -INV>, <Disjunction, +INV> and <Conjunction>. This enables all examples to clarify the problems of NP coordination and agreement in GPSG and HPSG.

The Schemas proposed in this paper sub-divide the coordination into the category of conjunction (ex. and) and disjunction (ex. or) to explain the agreement of feature PER, NUM and GEND between NP coordination and VP. Each Schema allows its rule to apply whenever necessary.

For the comparison with Noun Phrase in English, Korean honorific coordination of Verb Phrase is presented in this study. To analyze the constructions properly, the feature of [HON] is allowed to be the HEAD feature and INDEX. Unlike HPSG, this study divides the daughters of VP honorific coordination into conjunct daughter (NP_a) and head daughter (NP_b). This means that the AGR value of VP shares the AGR value only with the head due to the Head Feature Principle of HPSG. Hence, all the examples with honorific coordination of VP in Korean are explained properly with the application of Schemas proposed in this paper.

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Agreement of NP and VP Coordination

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Sung-Ryong Hong
Department of General Education
Namseoul University
21 Maeju-ri, Seongwhan-eup
Cheonan-sity, Choongnam, 330-707, Korea
Tel: 82-41-580-2313
Email : srh@nsu.ac.kr

Won-Shik Na
Department of Computer Engineering
Namseoul University
21 Maeju-ri, Seongwhan-eup
Cheonan-sity, Choongnam, 330-707, Korea
Tel: 82-41-580-2551
Email : winner@nsu.ac.kr

Received: February 27, 2011
Revised: May 20, 2011
Accepted: June 15, 2011