

A Lexicon-based Analysis of the *Either...or...* Construction

Jungmee Lee

Department of English Language and Literature, Seoul National

University

jungmee_lee@hotmail.com

1. Introduction

Concerning the properties of the *either...or...* construction, there are two assumptions: i) two conjuncts have syntactically and semantically symmetric properties (Neijt 1979; Sag et al. 1985; Larson 1985; Schwarz 1999; Hendriks 2001) and ii) the lexical item *either* always takes the left-most peripheral position in the coordinate structure (Schachter 1977; Rooth and Partee 1983; Sag et al. 1985; Munn 1993; Schwarz 1999; Hendriks 2001). In this paper, following the terms in Schwarz (1999), each of these two assumptions will be referred to as the Symmetry Condition and the Left Bracket Thesis respectively.

Many English sentences containing the *either...or...* construction, however, show that these two assumptions can be disobeyed as follows:

- (1) a. John wanted to eat *either* beans *or* rice.
- b. John wanted to *either* eat beans *or* rice.
- c. John *either* wanted to eat beans *or* rice.
- d. *Either* John wanted to eat beans *or* rice.

In example (1), the syntactic positions of *either* are not restricted in the left-peripheral position of the coordinate structure, and also do not allow the symmetric syntactic/semantic status between two conjuncts. Therefore, in the unbalanced disjunction sentences such as (1), how to accept the Symmetry Condition and the Left Bracket Thesis needs to be discussed in order to reach a precise formalization of the *either.. or..* construction.

There is one more interesting property associated with this unbalanced *either...or...* construction. Based on Rooth and Partee's (1982) proposal on the *wide scope or* reading, Larson (1985) indicates that the syntactic position of *either* is closely related with the interpretation of disjunction. The following presents all of the possible *de-dicto* readings which can be derived from the sentences in (1):

- (2) a. John wanted to eat either one of beans or rice. → (1a)

- b. John wanted either one of eating beans or eating rice. → (1a), (1b)
- c. John did either one of wanting to eat beans or wanting to eat rice, but the speaker does not know exactly. → (1a), (1c), (1d)

Interestingly, the sentence in (1a) has three possible readings of (2a-c), whereas the sentences in (1b-d) have only one reading as shown above. In the case of the *wide scope or* reading such as (2b-c), the readings are derived not only from the unbalanced disjunction like (1b-d) but also from the balanced disjunction like (1a). In this paper, these *wide scope or* readings will be examined along with the syntactic analysis of the *either...or...* construction. My proposal will focus on the syntactic position and the semantic function of *either*. *Either* is analyzed syntactically as a modifier to a coordinate phrase and semantically as a type of the operator for marking disjunctive scope.

2. Critical Review of Previous Analyses

There have been many studies on the coordinate structures, but the *either...or...* construction has not been dealt with in various approaches. As two main approaches to the unbalanced disjunction sentences as in (1), I will review Larson's (1985) movement analysis and Schwarz's (1999) reduction approach in a critical way.

2.1. Larson's (1985) Movement Analysis

2.1.1. Larson's (1985) Account of the *Either...or...* Construction

Larson analyzes the syntax of an unbalanced disjunction as a variable binding between the moved *either* and its trace as in (3):

- (3) a. John wanted to eat *either* beans *or* rice.
- b. John wanted to *either*_i eat *t*_i beans *or* rice.
- c. John *either*_i wanted to eat *t*_i beans *or* rice.
- d. *Either*_i John wanted to eat *t*_i beans *or* rice.

As a principle of *either*-movement, Larson adopts the Empty Category Principle (ECP) and attempts to modify Lasnik and Saito's (1984) definition of Antecedent Government in order to capture the finiteness-condition of *either*-movement: the third clause is amended such that ? includes only tensed Ss.

- (4) β ANTECEDENT GOVERNS *a* if
 - (i) β c-commands *a*, (ii) β and *a* are coindexed,
 - (iii) there is no ? (? = tensed S) such that β c-commands ? and ? dominates *a*, unless *a* is the head of ?.

Based on this modified principle which predicts a syntactic position of *either*, Larson generalizes the disjunctive scopal reading as follows:

- (5) When *either* occurs displaced from its associated *or*, then its overt surface syntactic position explicitly 'marks' the scope of disjunction. On the other hand, when it occurs undisplaced and adjacent to its disjunction in surface form, then its potential surface positions delimit the potential scopes of *or*.

2.1.2. Limitations of Larson's (1985) Approach

Although Larson's observation of the relationship between the syntactic position of *either* and the scopal readings of disjunctive phrases is seminal in some respect, his movement analysis does not provide a sufficient and logical account of the *either...or...* construction.

First, as a strong empirical evidence, Larson's analysis does not make an accurate prediction on the syntactic position of *either*. In order to validate his approach, Larson claimed that the landing site of moved *either* is restricted to that of the sentential adverbs such as *probably*. However, Larson's prediction is rejected by (6):

- (6) ① We ② could ③ have ④ been ⑤ playing ⑥ basketball or baseball.
 ⇒ possible positions of *probably* : ①, ③
 ⇒ possible positions of *either* : ①, ②, ③, ④, ⑤, ⑥

As shown above, the position of *either* is less restricted than that of sentential adverb *probably*, thus the movement approach which requires an assumption on the confined landing site of a moved element is empirically invalidated.

Second, the assumption Larson adopts for the Symmetry Condition and the Left Bracket Thesis does not accurately account for the disjunctive scopal readings. He regards these two assumptions as a D-structure stipulation, thus if the surface form of the *either...or...* construction appears to be asymmetric, Larson analyzes *either* as a moved element at S-S and it cannot undergo movement anymore at LF. On the other hand, if the surface form of the *either...or...* construction shows symmetry between the conjuncts, Larson assumes that LF movement must occur in order to allow a scopal reading. However, the assumption does not guarantee the accurate scopal interpretation as illustrated in (7) and (8):

- (7) a. John wanted to eat *either* [beans or rice]. (D-S)
 b. John wanted to *either*_i eat *t_i* [beans or rice]. (S-S)
 c. John wanted to *either*_i eat *t_i* [beans or rice]. (LF 1)
- (8) a. John wanted to *either* [eat beans or eat rice]. (D-S)
 b. John wanted to *either*_i *t_i* [eat beans or eat rice]. (S-S)
 c. John wanted to *either*_i *t_i* [eat beans or eat rice]. (LF 1)
 d. John *either*_i wanted to *t_i* [eat beans or eat rice]. (LF 2)

As shown in (7) and (8), according to Larson's approach, two sentences which can be used to convey the identical meaning by a gapping do produce the different interpretation: (7) is unambiguous but (8) has

two possible scopal readings.

Furthermore, Larson's interpretative prediction is wrong in the case of (8). The surface form of (8b) can produce the scopal reading of (8c), but the reading of (8d) is impossible to be produced from (8b). Since the disjunctive reading is bound at the moment when *either* combines with a verbal element, *either* in (8b) cannot move beyond the embedded *to*-infinitival at LF. In this respect, Larson's treatment which assumes the Left Bracket Thesis as a D-structure stipulation and moreover does not consider the syntactic category or semantic type of each conjunct is problematic. As a solution to this problem, I will argue that the Left Bracket Thesis needs to be realized as a S-structure stipulation and *either* of the *either...or...* construction needs to be analyzed as a modifier to the *or*-disjunctive phrase. In addition, I will claim that the SYNSEM information of each disjunct needs to be considered in order to capture the accurate scopal readings of the *either...or...* construction.

2.2. Schwarz's (1999) Gapping Analysis

2.2.1. Schwarz's (1999) Account of the *Either...or...* Construction

Schwarz (1999) argues that the syntactic analysis of the *either...or...* construction can be dealt with more properly by implementing a gapping analysis as in (9):

- (9) a. John wanted to eat *either* [_{NP} beans *or* rice].
 b. John wanted to *either* [_{VP} eat beans *or* eat rice].
 c. John *either* [_{VP} wanted to eat beans *or* ~~wanted to eat~~ rice].
 d. *Either* [_S John wanted to eat beans *or* ~~John wanted to eat~~ rice].

Schwarz's supporting argument for a gapping analysis is twofold. First, the gapping analysis has more explanatory power for a particular type of coordination, a 'limping disjunction' with dangling remnants as exemplified in (10b). The movement analysis, however, cannot explain the discrepancy of the grammatical judgement between the source sentence (10b) and the derived sentence (10c):

- (10) ??*Either* they locked you or me up.
 a. ??*Either* [they locked you or ~~they locked me up~~]. (gapping analysis)
 b. They locked *either* [_{NP} you or me] up. (movement analysis: D-S)
 c. ??*Either* they locked *t_i* [_{NP} you or me] up. (movement analysis: S-S)

The second supportive argument for Schwarz's (1999) analysis is associated with a gapping field, which means the impossible syntactic domain of gapping. The gapping field captures the locality condition of the *either...or...* construction more accurately than Larson's treatment as manifest in the following:

- (11) a. *Some revised their decision to cook rice on Monday and others ~~revised [their decision to~~
~~cook rice~~ on Tuesday]. (a complex NP island)

- b. *Some were wondering whether to write to Bill and others ~~were wondering [whether to write to Mary]~~. (a *wh*-island)
- c. *The first letter says that you should pay tax and [the second letter ~~says that you should pay V.A.T]~~. (a finite clause island)
- d. *Vivek wanted for Nishi to buy the video, and Carry wanted ~~[for Nishi to buy the ice cream]~~. (a *for*-infinitival island)
- e. Some wanted to write novels and [others ~~wanted to write plays]~~. (a *to*-infinitival)

As demonstrated in the above examples, gapping fields contain not only a complex NP island in (11a) and a *wh*-island in (11b), but also a finite clause in (11c) and a *for*-infinitival in (11d). Without modifying an accepted principle as in Larson's treatment of ECP, the gapping phenomenon itself predicts the syntactic position of *either* well enough to account for the impossibility of *either*-movement in *for*-infinitival sentences as well as in finite sentences. Whereas a *for*-infinitival is not considered a syntactic island in Larson's analysis, a gapping analysis itself predicts the discrepancy of grammaticality between a non-finite sentence and a finite sentence, even between a *for*-infinitival and a *to*-infinitival.

2.2.2. Limitations of Schwarz's (1999) Approach

The most critical problem of Schwarz's analysis is that he denies Larson's indispensable insight on the correlation of the syntax and semantics in the *either...or...* construction. Adducing Munn's (1993) Quantifier Raising analysis as an enhanced version of Larson's insight on disjunctive scopes, Schwarz argues that a quantifier scope is not restricted in the same way as the surface position of *either*. Consider the following sentences presented by Schwarz (1999: 348-349).

- (12) a. Some sheriff locked every gangster up.
- b. ??Either they locked you or me up.

With the sentences in (12) which form a minimal pair only differing in the lexical choice of the subject and object phrases, Schwarz indicates that the interpretation pattern of (12a) is not identical to (12b): (12a) has a reading that the object [every gangster] outscopes the subject [some sheriff] whereas (12b) which is assumed to have *wide scope or* reading do not fully pass muster on a grammaticality judgement test. Based on this degraded grammaticality, Schwarz argues that the *either...or...* construction does not operate in association with a scopal reading.

Although Schwarz's argument on the different interpretative pattern between (12a) and (12b) is correct, it cannot reject even Larson's insight on the correlation between the syntactic position of *either* and the scopal readings since the scope-containing elements are not restricted to the quantificational determiners. In this paper, I will assume that Schwarz's rejection of Larson's insight is too a hasty conclusion to capture a regularity shown in the disjunctive scopal readings, and basically, Larson's assumption that the position of *either* has some implications concerning the scopal readings will be maintained. The critical problems of QR approach and my new lexicon-based approach will be provided

in section 4.

3. The Syntax of the *Either...or...* Construction

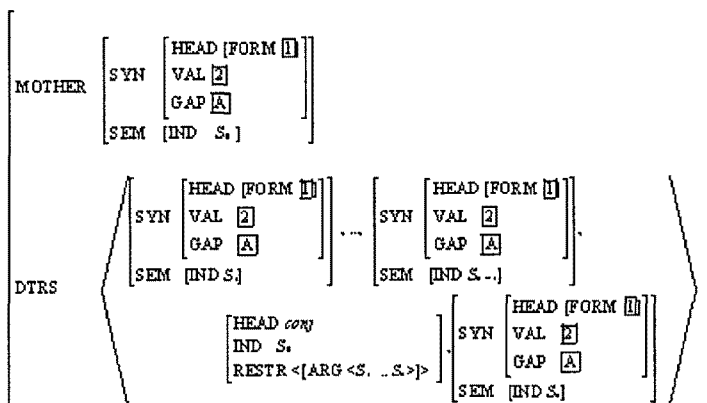
In this section, I will attempt to provide a syntactic representation of the *either...or...* construction. I will adopt Schwarz's (1999) reduction approach, and present how this elliptical phenomenon can be formulated within HPSG. And furthermore, I will present my proposal that *either* takes an independent syntactic position as a modifier to coordinate phrases. The particular modification pattern of *either* and the advantages of the modifier analysis will be also provided.

3.1. The Basic Structure of the *or*-Disjunctive Phrase

Various analyses on the basic structure of coordination have been presented in many syntactic frameworks (Ross 1967; Sag *et al.* 1985; Munn 1992; Kayne 1994; Johannessen 1998). There are two main issues in previous studies of the coordinate structure: i) flatness of a coordinate structure and ii) headedness of the daughters in the coordinate structure (Ab?ille 2003). In this paper, I assume that the coordinate phrase is a flat and non-headed structure. A flat structure captures the feature-sharing between conjuncts and reflects the identical contribution of the conjuncts in inheriting the syntactic features. And a non-headed structure captures the discrepancy between syntactic headedness and semantic headedness.

As a basic constraint on the coordinate phrases, I adopt Sag, Wasow and Bender's (2003: 485) constraint in (13).

(13) *coord-cx* :

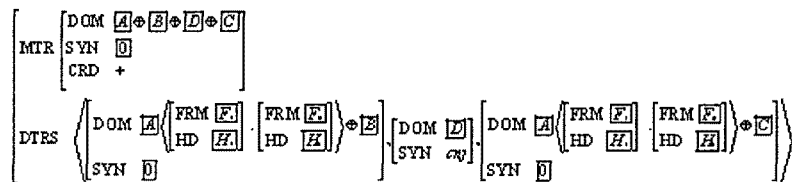


As demonstrated in (13), this constraint captures the feature-sharing between the conjuncts. The SYN-values and the type of the INDEX-values are identical between the conjuncts. This implies that the Symmetry Condition is adequately represented in constraint (13) without having to propose any additional schema.

The coordinate structure constraint in (13), however, only permits the conjunction of syntactically identical elements such as in (1a), not accounting for the unbalanced disjunctive phrases such as in (1b-d). In order to analyze the syntax of the *either...or...* construction in a more satisfactory way, therefore, more elaborate syntactic treatments are required. Based on the above-mentioned syntactic advantages of Schwarz's (1999) reduction approach, I will present an elliptical analysis of the *or*-disjunctive phrase within the HPSG framework.

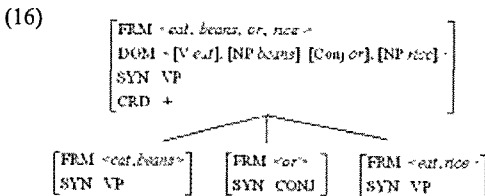
As the most recent and simplest version for analyzing an elliptical construction, I will follow Beavers and Sag's (2004) formalization. In Beavers and Sag, it is assumed that redundant left-peripheral materials in the second daughter's DOM list do not appear in the mother's DOM list as in (14):

(14) final-cnj-cx \Rightarrow



Assuming that Beavers and Sag's constraint is correct, the *or*-disjunctive phrase of the *either...or...* construction in (15) can be described as in the tree diagram of (16).

- (15) a. John wanted to *either* eat beans *or* rice.
 b. John wanted to *either* [_{VP} eat beans] *or* [_{VP} eat rice].



As shown in (15), the problem of how to reconstruct the elided elements can be solved by Beavers and Sag's constraint itself, which captures the Symmetry Condition of the coordinate structure. That is, since the first conjunct has a SYN-value of VP, the second conjunct is also reconstructed into VP.

In addition to the Symmetry Condition, how the Left Bracket Thesis can be maintained in my proposed analysis will be presented in the next section. In section 3.2, I will discuss the proper syntactic position of *either* and its implications for the Left Bracket Thesis.

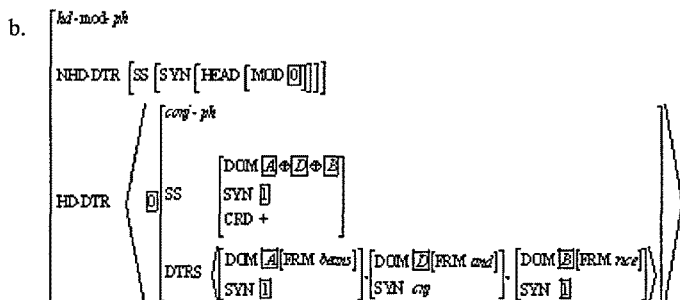
3.2. *Either* as a Modifier to the *or*-Disjunctive Phrase

3.2.1. The Modification Pattern of *Either*

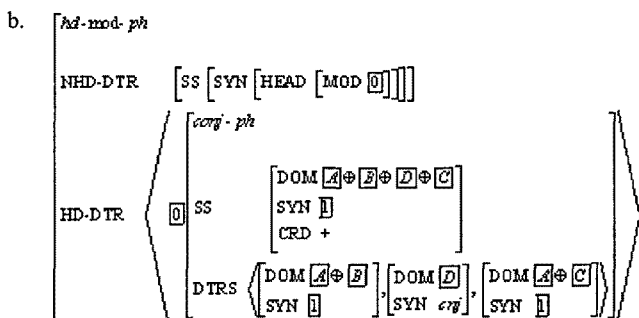
The Left Bracket Thesis, which is rejected in Larson's movement analysis as a restriction in S-

structure, can be maintained in my proposal by analyzing *either* as a modifier to the *or*-disjunctive phrase. In my proposal, *either* is not analyzed as one of conjunctions which jointly occupies a syntactic node with *or* like Larson's analysis, but a modifier to the *or*-disjunctive phrase. The following shows the two cases of modification by *either*: modifying the non-elided *or*-disjunction phrase in (17) and the elided *or*-disjunction phrase in (18).

(17) a. John wanted to eat [*either* [beans or rice]].



(18) a. John wanted to [*either* [eat beans or eat rice]].



Based on the syntactic representations in (17) and (18), I note that there are three additional properties unique to the *either...or...* construction, among which two properties need to be stipulated in the SYN-feature of *either*.

First, *either* attaches to the maximal projections, not the non-maximal projections (Neijt: 1979). This modification pattern goes against conventional assumptions on the modifier, which is analyzed to combine with the X'-level. Based on this previous observation, I propose that *either* is a particular type of a modifier which attaches to the maximal projection, and will describe this property in the lexical information of *either* as follows:

$$(19) \quad \langle \text{either}, \left[\text{SYN} \left[\text{MOD} \left[\begin{array}{l} \text{SFR} \left\{ \right\} \\ \text{COMPS} \left\{ \right\} \\ \text{CRD} + \end{array} \right] \right] \right] \rangle$$

In (19), by restricting the *either*-modified element as a *phrasal*-type with saturated SPR and COMP values, *either* can modify only the XP-level element.

The second unique property of the *either...or...* construction is that the modification pattern of *either* is restricted to a specific type of the coordinate phrase as shown in (20):

- (20) a. John wanted to eat *both* beans *and*/**or*/**nor* rice.
 b. John wanted to eat *either* beans **and*/**or*/**nor* rice.
 c. John wanted to eat *neither* beans **and*/**or*/**nor* rice.

This modification pattern by *both*, *either*, and *neither* cannot be captured only with the CRD feature in (14), since it simply indicates that the coordinate structure contains a conjunction. I propose that more detailed features within the coordinate structure are necessary as in (21a) and the coordinate structure which *either* modifies must have the feature structure such as (21b).

- (21) a. $\left[\text{CRD} \left[\begin{array}{l} \text{coordinated} \\ \text{DIS} \left[\begin{array}{l} \text{disjoined} \\ \text{NEG} \quad \pm \end{array} \right] \end{array} \right] \right]$ b. $\langle \text{either}, \left[\text{SYN} \left[\text{MOD} \left[\text{CRD} \left[\begin{array}{l} \text{coordinated} \\ \text{DIS} \left[\begin{array}{l} \text{disjoined} \\ \text{NEG} \quad - \end{array} \right] \end{array} \right] \right] \right] \right] \rangle$

The third unique property of the *either...or...* construction is that the syntactic position of *either* is not restricted to some specific positions as Larson's approach. In my analysis, since *either* appears in the left-adjacent position to the *or*-disjunctive phrase, what *either* can modify depends on which syntactic category of the first conjunct is permitted. However, it has not been considered in any syntactic theory to restrict the possible grammatical categories of the first conjunct in the coordinate structure. In my analysis, therefore, the grammatical positions of *either* are predicted only with the local restrictions by the gapping field and the lexical information of *either* suggested in (19) and (21b). In this respect, *either* is basically analyzed as a cross-categorial modifier. Larson's approach which restricted the syntactic position of *either* to a particular position in the sentence level revealed its limitation in predicting the grammaticality accurately, but my analysis makes it possible to predict the accurate syntactic position of *either*.

3.2.2. Advantages of the Modifier Analysis of *Either*

First, this modifier analysis can avoid the burdensome consequences of the syntactic integration of *either* and *or* as a conjunction within the coordinate structure as in Larson's analysis. Reconsider Larson's structure which contains both *either* and *or* in the CONJ-node. If we adhere to this analysis within the HPSG framework, it is unavoidable to assume a flat structure which contains two conjunction daughters and two conjunct daughters. It can only be described in a way that adds one more conjunction daughter in constraint (14). This treatment, however, is problematic in terms of the analysis of the semantic restriction. In (14), since a semantic head within a coordinate phrase is not a conjunct but a conjunction, it is semantically assumed that a conjunction selects the conjuncts as its semantic arguments. If *either* is added as an equivalent daughter within this normal coordinate structure, any attempts to reestablish the semantic

restriction between the conjuncts, *or*, and *either* will raise several problems.

Second, the modifier analysis can capture the independent semantic function of *either*. Zimmermann (2000: 267) argues that the function of *either* is to explicitly mark exhaustivity. According to Zimmermann, there are two kinds of disjunctions: the *open* disjunction and the *closed* disjunction. *Closed* disjunction ends on a low phrase-final tone and is interpreted to cover the space of all epistemic possibilities, but *open* disjunction ends on a high phrase-final tone and does not make any claim to completeness in the epistemic possibility of each disjunct. Of these two types of disjunction, Zimmermann notices that the *either-or* disjunction always requires a closure intonation, unlike the disjunction without *either*. Thus, the *either-or* disjunction is analyzed as a *closed* disjunction and *either* is analyzed as a marker of exhaustivity. Based on Zimmermann's (2000) claim, Hendriks (2004) argues that *either* has a semantic function which restricts the set membership. More specifically, he argues that the function of *either* is to exclude all the contextually relevant set members except the elements focused on. Considering Zimmermann's and Hendriks' claim, to assign an independent syntactic position separated from the *or*-disjunctive phrase is a more proper analysis.

The third advantage of the modifier analysis is related to the formalization issue within HPSG. In accordance with HPSG, a modifier is analyzed as a semantic head in a head-modifier phrase, although it is not a syntactic head as stipulated in (22):

(22) Semantic Principle (Pollard and Sag 1994: 56)

In a headed phrase, the CONTENT value is token-identical to that of the adjunct daughter if the DTRS value is of sort *head-adj-struct*, and with that of the head daughter otherwise.

Through this principle, the important characteristics of the *either...or...* construction that *either-rel* takes *or-rel* as its semantic argument can be guaranteed. If the *either...or...* construction is analyzed as the other types of the headed phrase, the semantic relation will be analyzed as a reversed one.

4. The Semantics of the *Either...or...* Construction

As stated briefly in section 1, the disjunctive scopal readings are intimately associated with the syntax of the *either...or...* construction. Based on my syntactic analysis, I will investigate the disjunctive scopal readings of the *either...or...* construction in this section.

4.1. Disjunctive Readings in the *Either...or...* Construction

Concerning these scopal readings, no sufficient investigation has been presented except in Larson's (1985) and Munn's (1993) analyses. Larson's analysis was critically reviewed in section 2. In Munn's analysis, I also note that there is a critical problem. Munn argues that the two *de dicto* readings of (1a) can be captured in the same way as Quantifier Raising. However, what can be derived from the QR analysis is

the *de re* reading and the *de dicto* reading which conjoins the entities, not the *de dicto* reading which conjoins the propositions. Consider the following rough logical representations in (23).

- (23) a. [either $x??$ beans'(x) or rice'(x)] want'(john', eat'(john', x))
 b. want' (John', ([either $x??$ beans'(x) or rice'(x)] eat'(john', x))

In (23), (23a) represents the *de re* reading of (1a), and (23b) represents the *de dicto* reading of (1a) which conjoins two entities. Therefore, Munn's analysis does not contribute to a solution of the conundrum of the *wide scope or* reading which conjoins two propositions such as (2b) and (2c).

His insight on the *either...or...* construction, nevertheless, should not be discarded, considering the semantic difference between a *de re* reading and a *de dicto* reading of conjoining entities. In accordance with Munn's analysis, I will consider *either* as a type of operator, and *either-rel* as a stored element before retrieval. Stored operators are passed up successively to higher levels in the structure until an appropriate scope assignment locus is reached. Adhering to Pollard and Sag's (1994) assumption, a retrieval of quantifiers occurs only when the CONT value is related with a verbal expression. Thus, it is at VP or S where the stored operators are retrieved from STORE and integrated into the meaning in QUANTS, allowing a scopal interpretation.

Based on this operator analysis, a critical problem in representing the disjunctive readings of the *either...or...* construction is the *wide scope or* reading, which appears to conjoin the nominal elements syntactically but the propositions semantically as in (1a).

4.2. Type Raising via a Syntactic Treatment

In order to solve the conundrum of the *wide scope or* reading, I note that 'type raising' is one possibility. To begin with, consider the *or*-disjunctive phrase without *either*, which forms a minimal pair with (1a).

- (25) John wanted to eat beans *or* rice.

What elements are conjoined in (24)? My analysis on the syntax of the *either...or...* construction is illuminating in this respect. All of the possible reconstructions of the elided elements is like (26).

- (26) a. John wanted to eat [_{NP} beans or rice].
 b. John wanted to [_{VP} eat beans or eat rice].
 c. John wanted [_{VP} to eat beans or to eat rice].
 d. John [_{VP} wanted to eat beans or wanted to eat rice].
 e. [_S John wanted to eat beans or John wanted to eat rice].

As shown in (26), to derive a *wide scope or* reading in a simple *or*-disjunctive phrase is possible only through this syntactic analysis. In the case of the *either-or* disjunctive phrase, however, this syntactic approach is not possible. Consider an identical syntactic method which reconstructs the elided elements.

- (27) a. John wanted to eat *either* [_{NP} beans or rice].
 b. *John wanted to [_{VP} eat *either* beans or eat rice].
 c. *John wanted [_{VP} to eat *either* beans or ~~to eat~~ rice].
 d. *John [_{VP} wanted to eat *either* beans or ~~wanted to eat~~ rice].
 e. * [_S John wanted to eat *either* beans or ~~John wanted to eat~~ rice].

As shown in (27), the syntactic treatment in the *either-or* disjunction phrase does not guarantee a *wide scope or* reading, since *either* appears within the *or*-disjunctive phrase violating the Left Bracket Thesis. That is, syntactically *either* must modify the *or*-disjunctive phrase in accordance with the Left Bracket Thesis, and the boundary for reconstructing elided elements is also guaranteed by the Left Bracket Thesis. Therefore, if accepting both the Symmetry Condition and the Left Bracket Thesis, type raising through a syntactic operation as in a simple *or*-disjunctive phrase cannot derive a *wide scope or* reading in an ambiguous case like (1a).

4.3. A Lexicon-based Approach to the *Wide Scope Or* Readings

In this section, I will present my proposal on the lexical treatment of the *wide scope or* readings in the *either...or...* construction. In order to represent a more accurate interaction pattern between the syntax and the semantics of the *either...or...* construction, I will classify the *wide scope or* readings into two types: (i) syntactically conjoining two verbal elements and semantically conjoining two propositions as in (1b-d), and (ii) syntactically conjoining two nominal elements and semantically conjoining two propositions as in (1a).

4.3.1. The *Wide Scope Or* Reading from a Verbal-disjunction

Consider the *wide scope or* readings derived from the syntactic disjunction of two verbal elements.

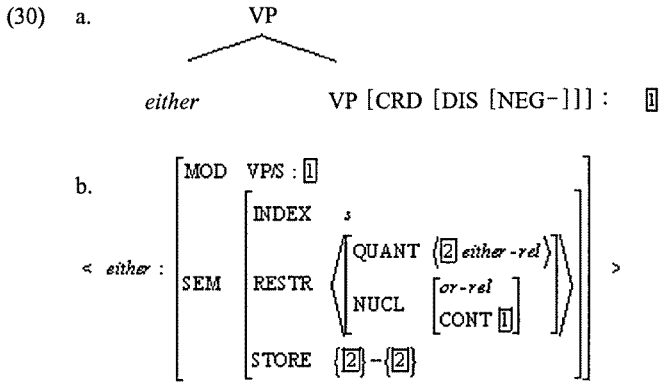
- (28) a. John wanted to *either* eat beans *or* rice.
 b. John *either* wanted to eat beans *or* rice.
 c. *Either* John wanted to eat beans *or* rice.

In this case, analyzing the sentences into a sentential or verbal disjunction structure is possible only with the syntactic analysis as in the simple *or*-disjunctive phrase. Considering the Symmetry Condition and the Left Bracket Thesis, these sentences can be analyzed as in (29).

- (29) a. John wanted to *either* [_{VP} eat beans or eat rice].
 b. John *either* [_{VP} wanted to eat beans or ~~wanted to eat~~ rice].
 c. *Either* [_S John wanted to eat beans or ~~John wanted to eat~~ rice].

As shown in (29), when *either* syntactically modifies the verbal disjunctive phrase, VP or S, the disjunctive reading is unambiguous only deriving the *wide scope or* reading which conjoins two propositions. More specifically, the syntactic approach alone can sufficiently represent that (29a) has its scope within the embedded VP and (29b-c) have their scope within the matrix VP. This shows a case

where the syntax and the semantics match each other. The simplified syntactic structure and the lexical entry of *either* in this case is presented in the following.

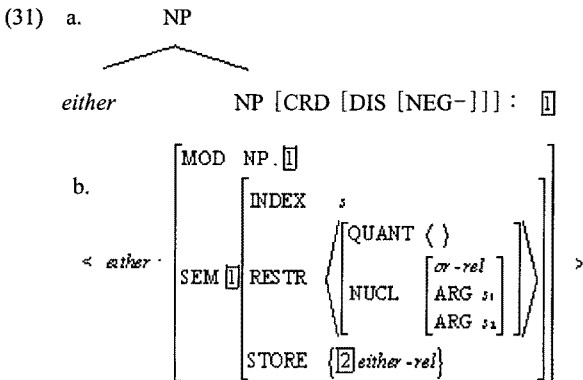


As demonstrated in (30), when *either* modifies VP or S, *either-rel* is retrieved at the same time and the *wide scope or* reading which conjoins the propositions is produced.

Through this lexical approach, even what Larson missed in his analysis can be captured exactly here. Reconsider the scopal readings in (7) and (8). According to Larson's analysis, (8b) has an ambiguous scopal reading since *either* can undergo LF-movement to the position of *either* in (8c-d). However, as I indicated in section 2, this interpretation is not accurate. In my analysis, this interpretation pattern can be captured accurately by the lexical entry of *either* in (33b), since *either-rel* must be retrieved at the same time when *either* modifies VP.

4.3.2. The *Wide Scope Or* Reading from a Nominal-disjunction

The second type of the *wide scope or* reading is derived from a sentence like (1a). As examined in the previous section, the semantic representation of (1a) cannot be dealt with by the syntactic treatment of type raising, since *either* modifies the NP-disjunction syntactically but it implies the disjunctive readings between the propositions semantically. As a solution to this syntax-semantics mismatch, I propose a lexical approach as follows:



This lexicon-based approach leads to a more elaborated syntactic/semantic formalism of the *either...or...* construction, correctly representing the Symmetry Condition and the Left Bracket Thesis within HPSG. Furthermore, the syntactic and semantic function of the lexical item *either* becomes manifest in my analysis. It takes the syntactically independent position as a modifier to the disjunctive *or*-phrase and functions as a type of the operator indicating the disjunctive scope. And finally, while pursuing the formalism within the HPSG framework, I could achieve the more accurate representation of the *either...or...* construction on the level of the syntax-semantics interface.

References

- Abéille, A. 2003. 'A Lexicalist and Construction-based Approach to Coordinations,' In S. Muller, ed., *Proceedings of the 10th International Conference on HPSG*. Stanford: CSLI.
- Beavers, J. and I. A. Sag. 2004. 'Some Arguments for Coordinate Ellipsis in HPSG,' Ms., Stanford University.
- Hendriks, P. 2001. 'Initial Coordination and the Law of Coordination of Likes,' In H. Broekhuis and T. van der Wouden, eds., *Linguistics in the Netherlands 2001*, 127-38. Amsterdam: John Benjamins.
- Hendriks, P. 2004. 'Either, Both and Neither in Coordinate Structures,' To appear in *The Composition of Meaning*, eds. A. ter Meulen & W. Abraham. Amsterdam: John Benjamins.
- Johannessen, J-B. 1998. *Coordination*. Oxford: Oxford University Press.
- Kayne, R. 1994. *The Antisymmetry of Syntax*. Cambridge: MIT Press.
- Larson, R. 1985. 'On the Syntax of Disjunction Scope,' *Natural language and linguistic Theory* 3, 217-264.
- Munn, A. B. 1992. 'A Null Operator Analysis of ATB Gaps,' *Linguistic Review* 9, 1-26.
- Munn, A. B. 1993. *Topics in the Syntax and Semantics of Coordinate Structures*. Ph.D. dissertation, University of Maryland, College Park.
- Neijt, A. 1979. *Gapping: A Contribution to Sentence Grammar*. Dordrecht: Foris.
- Pollard, C. and I. A. Sag. 1994. *Head-Driven Phrase Structure Grammar*. Chicago: University of Chicago Press.
- Rooth, M. and B. Partee. 1982. 'Conjunction, Type Ambiguity and Wide Scope Or,' In D. Flickinger, M. Macken and N. Wiegand, eds., *Proceedings of the First West Coast Conference on Formal Linguistics*. Stanford University.
- Rooth, M. 1983. 'Generalized Conjunction and Type Ambiguity,' In R. Bauerle, C. Schwaze and A. von Stechow, eds., *Meaning, Use, and Interpretation of Language*, 361-383. Berlin: de Gruyter.

- Ross, J. 1967. *Constraints on Variables in Syntax*. Ph.D. dissertation. Cambridge: MIT Press.
- Sag, I. A., G. Gazdar, T. Wasow and S. Weisler. 1985. 'Coordination and How to Distinguish Categories,' *Natural Language and Linguistic Theory* 3, 117-171.
- Sag, I. A., T. Wasow and E. Bender. 2003. *Syntactic Theory: A Formal Introduction*. Stanford: CSLI.
- Schachter, P. 1977. 'Constraints on Coordination,' *Language* 53, 86-103.
- Schwarz, B. 1999. 'On the Syntax of *Either...or*,' *Natural Language and Linguistic Theory* 17, 339-370.
- Zimmermann, T. E. 2000. 'Free Choice Disjunction and Epistemic Possibility,' *Natural Language Semantics* 8, 255-290.