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Selection of a Grammatical Subject in English Correlative Conjunction Phrases: An Optimality-Theoretic Approach

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Abstract

The topic of selection of a grammatical subject in a correlative conjunction phrase has long failed to attract the attention of linguists due to some difficulties not only in figuring out the internal structure of NP's conjoined by a correlative conjunction but also in its heavy dependency on the representational aspects each correlative conjunction demonstrates. In this paper, I have explored the seemingly complex patterns in the selection of a grammatical subject in a correlative conjunction phrase in the frame of the Optimality Theory (Prince & Smolensky 1993, 2008). I show that, with the help of three newly developed constraints such as MinDist, Focus, and PARSE which are ranked relatively to each other, an optimal grammatical subject out of two NP candidates conjoined by a correlative conjunction can be correctly selectable.

Keywords: *Correlative Conjunction Phrase, FOCUS, PARSE, MinDist, Optimality Theory (OT)*

1. Introduction

In an English sentence two NP's can appear in the subject position conjoined by a correlative conjunction, as shown in (1) in the following. Consider:

(1) a. *Not only* you *but also* Tom is a smart student.
b. *Not* you *but* Tom is a smart student.
c. *Either* you *or* Tom is a smart student.
d. *Neither* you *nor* Tom is a smart student.
e. You *as well as* Tom are a good student.
f. *Both* you *and* Tom are good students.

All of the 5 sentences in (1) above have two NP's appearing in the subject position, both of which are conjoined by correlative conjunctions such as '*not only ~ but also–*' for (1a), '*not ~ but–*' for (1b), '*either ~ or–*' for (1c), '*neither ~ nor–*' for (1d), '*~ as well as–*' for (1e) and lastly '*both ~ and–*' for (1f).And in many such cases as conjoined by a correlative conjunction, usually one of the two NP's which is closer to the

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immediately following finite verb is selected to become a legitimate subject of each construction as we observe in (1a to 1d). In (1a) through (1d) an NP closer to the immediately following finite verb has been selected to be a grammatical subject, and the resulting sentences are all grammatical. However, this observation shows its limitation for (1e) and (1f). Note that in (1e) an NP 'you' which is farther than the other NP 'Tom' has been selected for a grammatical subject, which is identified by the appearance of 'are' instead of 'is' which results from the Subject-Verb agreement. In (1f) neither the closer NP 'Tom' nor the farther NP 'you' alone should be considered as a grammatical subject of the sentence. Instead, 'you' and 'Tom' both should be considered as grammatical subjects, which is proved by the selection of the plural verb 'are' as a finite verb of the sentence.

According to the observations so far, the selection of a grammatical subject in correlative conjunction phrases seems not solely structure-dependent, but it seems as much dependent on semantic aspects each correlative conjunction has as well. How can we deal with this confusing phenomenon?

In the following discussion, I will explore this topic of selection of grammatical subject in a correlative conjunction phrase in the frame of the Optimality Theory (Prince & Smolensky 1993, 2002, 2004 & 2008).

2. Discussion

2.1 A Structure-Based Solution

Consider the following data (2), a partial repeat of (1) above:

(2) a. *Not only* you *but also* Tom is a smart student.
b. *Not* you *but* Tom is a smart student.
c. *Either* you *or* Tom is a smart student.
d. *Neither* you *nor* Tom is a smart student.

As we discussed in the previous section, all the sentences in (2a to d) may serve as ample evidence to lead us to a rough generalization that "one of the two NP's which is closer to the immediately following finite verb will be selected as a grammatical subject". Such generalization could be justified by the fact that a third-person singular copular verb 'is', instead of 'are', appears as a main verb for the legitimate subject 'Tom' in each sentence. However, this observation does not help explain why an NP which is not closer to a finite verb is selected as a grammatical subject in (3a) in the following. It even does not explain what's going on in (3b), either.

(3) a. You *as well as* Tom are a smart student.
b. *Both* you *and* Tom are smart students.

In (3a & b) two NP's are also conjoined by correlative conjunctions such as '~as well as –'for (3a) and 'both ~ and –' for (3b), and they are also expected to follow the same generalization, thereby an NP closer to a finite verb being selected as a grammatical subject. However, it is not done as expected. The farther NP from the finite verb 'are' is selected for a grammatical subject in (3a). And even in (3b) Two NP's seem to be considered as a grammatical subject. This indicates that a solely structure-based approach does not account for "all" the cases above correctly. Therefore, we need a new approach other than the one solely based on the structure.

2.2 A Meaning-Based Solution

A deeper consideration about (1a to f) may suggest a new way of parsing out the secret hidden behind the selection of a grammatical subject for the sentences at hand. Let's consider the sentences (4a to f) carefully again, which is a whole repeat of (1a to f).

(4) a. *Not only* you *but also* Tom is a smart student.
b. *Not* you *but* Tom is a smart student.
c. *Either* you *or* Tom is a smart student.
d. *Neither* you *nor* Tom is a smart student.
e. You *as well as* Tom are a smart student.
f. *Both* you *and* Tom are smart students.

When we take a careful look at (4a) and (4b) first, we immediately find that the meanings of correlative conjunctions are very closely related with the selection of a grammatical subject. According to the meaning of the correlative conjunction of (4a) 'not only ~ but also –', it is clear that a more importance is placed on the second NP 'Tom', rather than on the first NP 'you'. I will call such 'a more importance' as this, which is put one of the two NP's, as 'Focus'. The same semantic relation can be identified in (4b) as well. In (4b), 'Focus' is placed on the second NP 'Tom', not on the first NP 'you'. Thus, the Two NPs of 'Tom' of (4a) and 'Tom' of (4b) are correctly selected as grammatical subjects for both sentences.

This application works for (4e) as well. The correlative conjunction of 'as well as' in 'A as well as B' places 'Focus' not on 'B' but on 'A'. Therefore, in (4e) 'you as well as Tom', it is 'you' that 'Focus' is located on, not 'Tom'. That's why the finite verb 'are' appears there as a main verb.

The Meaning-based approach we have discussed so far, however, does not deal with all the cases of (4a to f) correctly again. Consider (5a & b) in the following, which is a partial repeat of the sentences of (4).

(5) a. *Either* you *or* Tom is a smart student.
b. *Neither* you *nor* Tom is a smart student.

The correlative conjunction of 'either ~ or -' does not put any 'Focus' on any of the two NP's in the sentence. That is, in (5a) the first NP of 'you' has no 'Focus', nor does the second NP of 'Tom'. The story is the same for (5b): No NP appears with 'Focus'. This is a big problem for our discussion again.

2.3 The Optimality Theory (Prince & Smolensky 1993, 2008)

2.3.1 Building Up of the Constraints Hierarchy in OT

According to the observation until now, two linguistic aspects have been found very important in deciding a grammatical subject out of two possible candidate NP's conjoined by a correlative conjunction: (1) minimal distance from a finite verb, and (2) a semantic prominence of Focus, which is assigned to one of the two NPs, or to both NPs. These two crucial factors should be considered first in the computational processes of the Optimality Theory (OT).

Let's start with (4a, b, e) first. They are repeated as (6) in the following. Consider:

(6) a. *Not only* you *but also* Tom is a smart student.
b. *Not* you *but* Tom is a smart student.
c. You *as well as* Tom are a smart student.

As discussed in the previous section of 2.2, selection of a subject in all three cases shows a very close relationship with the meanings each correlative conjunction shows, and for a moment we were successful in dealing with them in terms of 'Focus'. Below in (7) are listed some constraints needed to choose an optimal

candidate out of two NP's, and the following tableau (8) shows the processes of selecting an optimal subject in OT.

(7) Constraints
(A) Focus indicates that a semantic prominence of 'Focus' owned by a correlative conjunction must be properly discharged.
(B) PARSE indicates that a semantic prominence of 'Focus' must be discharged to a grammatical subject properly.
(C) Minimal Distance (MinDist) indicates that an NP closer to an immediately following finite verb must be selected as a grammatical subject.

2.3.2 Application of Constraints Hierarchy to 'Focus' Cases

According to the meanings each correlative conjunction implies, we may be able to divide them into two sub-groups: (1) The 'Focus' group includes 'not only ~ but also –', 'not ~ but –', '~ as well as –', and 'both ~ and -. (2) The Non-Focus group includes 'either ~ or –' and 'neither ~ nor –'. In this section I will show how the constraints developed in (7) can interact together to explain optimal selection of a grammatical subject from the sentences conjoined by the 'Focus' group cases conjunctions. Consider:

(8) Input: *Not only* you *but also* Tom { V_{be} } a smart student
Optimal Output: *Not only* you *but also* **Tom** { **is** } a smart student

Candidates	FOCUS	PARSE	MinDist
a. **you**[F]…Tom…{V}		*!	*
b.☞you…**Tom**[F]…{V}			
c. you…**Tom**…{V}	*!	*	

As the first two candidates of Tableau (8) show, the semantic prominence of 'Focus' is assigned to one of the two NP's, thereby satisfying Constraint FOCUS. On the other hand, Candidate (8c) does not satisfy FOCUS, since 'Focus' is not assigned to any of the two NP's. That's why candidate (8c) has two *'s on the first two cells of the tableau.

When it comes to MinDist, Candidate (8a) violates MinDist because the first NP 'you' is assigned 'Focus' and is selected as a grammatical subject, which is contra reality. Even it is not agreed with in number, nor closer to the finite verb { V_{be} } which should be realized as 'is'. That's why the mark '*' is assigned in the cell. Candidate (8c) does not have any NP which is assigned 'Focus', so it violates FOCUS. Even it violates PARSE because proper assignment of 'Focus' has not been conducted, either, another violation.

From a purely grammatical perspective, (8c) could be acceptable because the result after the whole computation will show the same surface form as (8b). However, it does not represent the detailed nuance provided by the correlative conjunction 'not only ~ but also –'. We need more convincing evidence to support this argument in the future.

On the while, Candidate (8b) does not violate any of the three constraints. Therefore, it is selected as an optima output.

Concerning the relative hierarchy of the three constraints established in Tableau (8), it seems no matter when it comes to the data (6a & b) since both are in the same situation with regard to the three requirements.

Even it is not clear at this stage of discussion that we need to maintain absolute dominance relation of one constraint over another.

Let's take another data of (6c).

(9) Input: You *as well as* Tom { V_{be} } a smart student
Optimal Output: **You** *as well as* Tom { **are** } a smart student

Candidates	FOCUS	PARSE	MinDist
a.☞**you**[F]…Tom…{V}			*
b. you…**Tom**[F]…{V}		*!	
c. you…**Tom**…{V}	*!	*	

The constraint ranking we established for (8) is still working for (9) as well. We can choose Candidate (a) of Tableau (9) to be an optimal one, which is a correct decision. Candidates (9b & c) are ruled out because both of them violate higher-ranked constraints than Candidate (9a).

One thing we need to pay attention to here is that the computation of Tableau (9) may suggest to us the relative ranking between FOCUS/PARSE and MinDist.
Let's suppose the relative ranking between FOCUS/PARSE and MinDist the other way round like MinDist > FOCUS/ARSE as in the following Tableau (10).

(10) Input: You *as well as* Tom { V_{be} } a smart student
Optimal Output: **You** *as well as* Tom { **are** } a smart student

Candidates	MinDist	FOCUS	PARSE
a. **you**[F]…Tom…{V}	*!		*
b. *☞you…**Tom**[F]…{V}			
c. you…**Tom**…{V}	*!	*	*

If MinDist is ranked to dominate the other two constraints of FOCUS/PARSE, as Tableau (10) shows, then Candidate (10b) would be taken as an optimal candidate because it violates no constraints at all, while the other two violate higher-ranked constraints. Thus, we cannot accept such a hierarchy as (10), and we still need to maintain MinDist in the lowest in the hierarchy.

What about the relative ranking between FOCUS and PARSE?
According to the computation of (8) through (9), there is no need to maintain FOCUS over PARSE or the other way around. If this view is right, we don't have to rank between the two: FOCUS <<>> PARSE, indicating that they are equally ranked to each other. Then, the working hierarchy of constraints so far will be as follows:

(11) Working Constraints Hierarchy
FOCUS <<>> PARSE > MinDist

Lastly for this section, let's apply the hierarchy of (11) to (4f) '*Both* Tom *and* I are smart students', which is a more complicated case with two 'Focus' assigned.

(12) Input: *Both* you *and* Tom { V_{be} } smart students
Optimal Output: *Both* **you** *and* **Tom** { **are** } a smart student

Candidates	FOCUS	PARSE	MinDist
a. **you**[F]…Tom…{V}	*!	*	*
b. you…**Tom**[F]…{V}	*!	*	
c. ☞**you**[F]…**Tom**[F]…{V}			*!
d. you…Tom…{V}	*!*	*	(*)

The correlative conjunction 'both ~ and –' has two 'Foci' to assign by its meaning. This indicates that if only one of the two NP's conjoined by this correlative conjunction appears with 'Focus', then the whole sentence of this kind will be judged ungrammatical. Candidates (a) & (b) belong to this case, and so both of them are judged ungrammatical, as shown unselected in Tableau (12). If there is no NP assigned any 'Focus' in a sentence with this correlative conjunction as in (12d), then it will be automatically ruled out from further computation as well.
Concerning (12c), both of the two NP's which are surrounded by this conjunction are assigned 'Focus' correctly. According to the constraint PARSE in (7b) any Focus-assigned NP must be a grammatical subject. In (12c) there are two such NP's, and they will comprise subjects of the sentence (12) with a plural verb 'are' realized as its main verb.

Until now I have discussed the building up of constraints, constraints hierarchy, and their application to 'Focus' cases. And we observed that the constraints hierarchy and its application to the 'Focus' cases work well. In the following section I will apply the hierarchy to 'Non-Focus' cases

2.3.3 Application of Constraints Hierarchy to 'Non-Focus' Cases
Let's take a look at (13a & b), which is repeat of (4c & d). The correlative conjunctions listed below in (13) do not assign 'Focus' to any of the two MP's they conjoin. That's why they are grouped into the 'Non-Focus' Cases in this section.

(13) 'Non-Focus' Cases
a. *Either* you *or* Tom is a smart student.
b. *Neither* you *nor* Tom is a smart student.

Let's discuss the case of (13a) first.

(14) Input: *Either* you *or* Tom { V_{be} } a smart students
Optimal Output: *Either* you *or* **Tom** { **is** } a smart student

Candidates	FOCUS	PARSE	MinDist
a. you[F]…Tom…{V}	*!	*	*
b. you…Tom[F]…{V}	*!	*	
c. you[F]…Tom[F]…{V}	*!*	**	*!
d. ☞you…**Tom**…{V}			
e. **you**…Tom…{V}			*!

The correlative conjunction 'either ~ or –' does not assign the semantic prominence of 'Focus' to any of NP's conjoined by itself. Therefore, Candidates (14a, b, & c) whose NP's are all assigned one as in (14a & b) or two 'Foci' as in (14c) are automatically violating the first two constraints of FOCUS and PARSE. Especially (14c) violates the first two constraints two times respectively. On the other hand, in (14d) no 'Focus' has been assigned to any of its two NP's, as expected by the meaning of the conjunction itself– no violation of FOCUS, and no violation of PARSE. In this situation, '**Tom**' which is a closer NP to the finite verb { V_{be} }, is selected as a grammatical subject. Thus, it is an optimal selection and the whole sentence becomes grammatical.

(14e) is all the same as (14d) except the fact that a not-closer NP, 'you', has been selected as an optimal subject. This will result in producing an ungrammatical subject because the decision will finally produce an ungrammatical sentence such as 'Either you or Tom are a good student'. (13b) with the conjunction of 'neither ~ nor –' is in the same environment as (13a) with 'either ~ or –'.

3. Conclusion

In this paper I have explored a way to select a grammatical subject from two NP's conjoined by correlative conjunction phrases.

First, I discussed the two important factors on which the selection of a grammatical subject out of two NP's conjoined by a correlative conjunction seems to be heavily depends: (1) the semantic prominence of '±Focus' each correlative conjunction has as its own meaning, and (2) the distance from a finite verb. I showed that the Constraints Hierarchy based on two major constraints such as FOCUS and Minimal Distance (MinDist), together with the additional constraint of PARSE, can select (an) optimal grammatical subject(s) from two possible candidates in the correlative conjunction phrases in both +Focus cases and –Focus cases.

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