“Either” as a Focus Particle

Petra Hendriks

Center for Language and Cognition Groningen, University of Groningen

Postbus 716, 9700 AS Groningen

Draft, May, 2003

Phone: +31-50-363 5813 / +31-50-363 6327

Fax: +31-50-363 6855

E-mail: P.Hendriks@let.rug.nl

Abstract

Many analyses of initial coordination are based on the view that elements like *either, both* and *neither* are conjunctions. Such a view, however, raises a number of questions with regard to the prosodic and syntactic structure of these constructions and their interpretation. This study argues that English *either* and its Dutch counterpart *of* are focus particles rather than conjunctions. This not only accounts for their relatively free distribution, but also explains the restrictions that are posed on their possible surface positions by focus and intonation. In addition, it yields an explanation for the scopal effects that have been observed in *either-or* constructions. Under the analysis of English disjunctive *either* and its Dutch counterpart as focus particles, the behaviour of these elements is not a purely syntactic matter but results from the interaction between syntactic, prosodic and discourse-semantic factors.

Keywords: Initial coordination; Focus particles; Either-or disjunction; Dutch of-of disjunction

1. Introduction

In many studies of coordination, elements such as English *either, both* and *neither* are analyzed as conjunctions (see, for example, Gazdar et al., 1985; Grootveld, 1994; Larson, 1985; Neijt, 1979; Sag et al., 1985; Schwarz, 1999; van Zonneveld, 1992). They seem to have in common with ordinary conjunctions such as *or, and* and *nor* that they introduce a conjunct in a coordinate structure. But whereas ordinary conjunctions occur in the position in between two conjuncts and introduce the final conjunct, *either, both* and *neither* appear in front of the entire coordinate construction and introduce the first conjunct. For this reason, coordination involving one of these elements is usually termed initial coordination, and the elements *either, both* and *neither* are referred to as initial conjunctions. A striking characteristic of initial conjunctions is that they can never occur alone, but must always cooccur with a particular ordinary conjunction: *both* with *and*, *either* with *or* and *neither* with *nor*. This is illustrated in (1).

(1) Initial coordination:

a. both Jane and John

b. either Jane or John

c. neither Jane nor John

Although initial conjunctions resemble ordinary conjunctions in many respects, the behaviour of *either, both* and *neither* is not completely identical to the behaviour of ordinary conjunctions. As has been observed before (Larson, 1985; Schwarz, 1999), *either* can also occur displaced from its standard position at the left edge of its

conjunct, in contrast to ordinary conjunctions. This standard position is the position immediately preceding the DP *rice* in (2a) and the position immediately preceding the IP *Jane ate rice* in (2b).

(2) a. Jane ate either [$_{DP}$ rice] or [$_{DP}$ beans].

b. Either [$_{IP}$ Jane ate rice] or [$_{IP}$ she ate beans].

Example (3a) shows that *either* can also occur to the left of its standard position. As is shown by example (3b), *either* can occur to the right of its standard position as well.

(3) a. Jane either ate [$_{DP}$ rice] or [$_{DP}$ beans].

b. [$_{IP}$ Jane either ate rice] or [$_{IP}$ she ate beans].

Ordinary conjunctions such as *or*, on the other hand, are not allowed to occur to the left or right of their standard position. So if *either* is analyzed as a conjunction, there is no immediate explanation for its relatively free distribution.

Another puzzling observation with respect to *either* is the observation that *either* appears to be sensitive to the pattern of intonation of the sentence. This is illustrated by the following pair of sentences:

(4) a. Either JANE ate rice or JOHN ate rice.

b. * JANE either ate rice or JOHN ate rice.

Here, small capitals indicate contrastive stress. These two sentences show that if the subject bears contrastive stress, *either* must precede the subject and is not allowed to

follow it. So *either* is allowed in its position in (4a) because it precedes the contrasted subject *Jane*. If *either* follows the contrasted subject, as in (4b), the result is unacceptable. Note that the unacceptability of (4b) cannot be explained by the assumption that *either* is never allowed to occur in the position immediately following the subject. The acceptability of the sentences in (3) shows that *either* can occur in this position. In (3), *either* is allowed to follow the subject because it is the direct object that bears contrastive stress. So in all of the acceptable cases presented above, *either* precedes the contrasted element in the first conjunct. These observations suggest that the distribution of *either* is somehow restricted by the placement of contrastive stress.

Other elements whose distribution is relatively free but whose surface position is nevertheless dependent on the placement of sentential stress are focus particles, such as *only* and *even*. This immediately raises the question whether initial conjunctions are focus particles too. In this article, the hypothesis will be investigated that disjunctive *either* is a focus particle. To this end, disjunctive *either* will be compared to the focus particle *only* with respect to a number of properties. These properties include their distribution (section 2), their association with focus (section 3), the scope ambiguities they give rise to (section 4) and their contribution to the interpretation of the sentence (section 5). The conclusion is that *either* and *only* are very similar, although also a few differences can be observed. Section 6 discusses previous analyses of *either* and shows that a number of observations with respect to *either* fail to be explained if *either* is analyzed as a conjunction but receive a straightforward explanation under the assumption that *either* is a focus particle. In section 7, it is shown that the locality effects with *either* are similar for left shifted *either* and right shifted *either*, thus favouring a unified explanation. In section 8, finally, additional

evidence will be provided from Dutch yielding support for the view that the similarity between *either* and the focus particle *only* is not a coincidental property of *either* but rather is a consequence of initial conjunctions in general being focus particles.

2. The distribution of *either*

In this section, the distribution of *either* will be investigated and compared to the distribution of the focus particle *only*. It will be shown that these two elements behave quite similarly with respect to their attachment possibilities. Moreover, their attachment possibilities differ from the attachment possibilities of ordinary conjunctions such as *or*.

Conjunctions such as *or* are well-known for their ability to conjoin almost any category. This is illustrated by the following examples, adapted from Neijt (1979: 2ff.):

(5) a. a small bus or a small car
b. right above that little chest or right beneath it
c. very red or very blue
d. that he will eat or will drink

(6) a. a small bus or car
b. right above or beneath that little chest
c. very red or blue
d. that he will eat or drink

The examples in (5) show that coordination is allowed of the maximal projections DP, PP, AP and VP, respectively. Coordination of smaller units is also allowed, as is shown in (6).

Surprizingly, initial coordination does not have the same wide range of application as simple coordination. Initial coordination is possible of maximal projections. This is illustrated by (7) below, where each first disjunct is introduced by *either*.

(7) a. either a small bus or a small car
b. either right above that little chest or right beneath it
c. either very red or very blue
d. that he either will eat or will drink

However, as Neijt (1979) already observes, initial coordination is not possible of non-maximal projections of N, P and A. This is illustrated by the unacceptability of (8a)-(8c). In contrast, initial coordination seems to be possible of non-maximal projections of category V, witness the acceptability of (8d).

(8) a. * a small either bus or car
b. * right either above or beneath that little chest
c. * very either red or blue
d. that he will either eat or drink

Now how can this pattern of acceptability be explained? In particular, what explanation can be provided for the observed differences between simple non-initial

coordination, as in (6), and initial coordination, as in (8)? An answer to these questions might be provided by the following examples with the focus particle *only*:

(9) a. only a small bus
b. only right above that little chest
c. only very red
d. that he only will eat

(10) a. * a small only bus
b. * right only above that little chest
c. * very only red
d. that he will only eat

The pattern of acceptability of these examples is completely identical to the pattern of acceptability of the sentences with *either* in (7) and (8). Since focus particles can adjoin to maximal projections only (Bayer, 1996: 13), the unacceptability of (10a)-(10c) is expected. In these cases, *only* adjoins to a non-maximal projection, which is not allowed for focus particles. The remaining problem is the acceptability of (10d), where *only* seems to be adjoined to a verbal head. A way to deal with this problem is to assume that *eat* is not a verbal head here, but rather a maximal projection. In fact, this is also what Neijt proposes for acceptable examples with *either* like (8d). She argues that *eat* and *drink* yield maximal projections in (8d), thus accounting for the acceptability of this sentence. If Neijt is correct, the general pattern displayed above is that *either* and *only* may adjoin to maximal projections only. If they adjoin to a lexical head or an intermediate projection, the result is an unacceptable sentence.

Neijt's solution for the acceptability of (8d) is supported by facts from Dutch. The Dutch counterpart of the English pair *either-or* is the pair *of-of*. The first element of this Dutch pair shows the same freedom of distribution and sensitivity to the pattern of intonation as *either*. Like English, Dutch allows for simple non-initial coordination of maximal and non-maximal projections, and does not allow for initial coordination of non-maximal projections of N, A and P. In addition, however, Dutch does not allow for initial coordination of verbal heads either:[1]

(11) * dat hij zal of eten of drinken
'that he will either eat or drink'

The unacceptability of (11) can be explained by assuming that *eten* ('eat') and *drinken* ('drink') are no maximal projections here. This difference between the categorial status of the conjuncts in the English sentence (8d) and its Dutch counterpart (11) is fully compatible with current views on English and Dutch phrase structure, according to which English auxiliaries originate under INFL, whereas in Dutch these elements originate inside the VP (Zwart, 1993). This makes an analysis plausible in which *either* in (8d) occurs outside the VP and is attached to this VP, while *of* in (11) occurs inside the VP and hence is not attached to a maximal projection. That *eten* and *drinken* are no maximal projections in (11) is also supported by the impossibility to have a focus particle in the position of the initial conjunction *of*:

(12) * dat hij zal alleen eten
'that he will only eat'

The generalization seems to be that in all positions in which English *either* and Dutch *of* are impossible, focus particles such as *only* and *alleen* are impossible as well. Also, all apparent counterexamples to Neijt's generalization that only maximal projections can be conjoined through initial coordination appear to be cases where *only* may occur in the position of *either* as well. As an illustration of this latter point, consider the sentences in (13a) and (14a) (adapted from Neijt,1979: 4). Here, *either* and *of* seem to conjoin two heads, thus yielding counterexamples to Neijt's generalization. However, if a focus particle occurs in the position of the initial conjunction, the result is acceptable too, witness (13b) and (14b):

(13) a. either songs or stories about ghosts

b. only songs about ghosts

(14) a. dat hij of belde of schreef naar zijn liefje
'that he either called or wrote to his lover'

b. dat hij alleen belde naar zijn liefje
'that he only called to his lover'

Since *only* and *alleen* may attach to maximal projections only, the acceptability of (13b) and (14b) suggests that *songs* and *belde* ('called') are no heads here. Rather, the conjuncts in these sentences must be maximal projections which, for example, have been reduced by Right Node Raising.

So *either* resembles the focus particle *only* in the impossiblity to attach to lexical heads and intermediate projections. Now how can this property of *either* be explained? Neijt (1979) accounts for the impossibility of *either* to attach to lexical

heads and intermediate projections by positing a restriction on initial coordination. However, this restriction is not motivated independently. Another explanation is provided by Kayne (1994), who argues that coordination in general is only possible of maximal projections. According to Kayne, what looks like head coordination must be derived from coordination of maximal projections through Right Node Raising. However, Right Node Raising requires the empty element to precede its licenser. But this is clearly not the case for the examples in (6). In all of these examples, the putative licenser (e.g., *a small* in (6a), repeated below as ((15)) occurs in the first conjunct and the empty element in the second conjunct:

(15) [a small bus] or [∅ car]

See Johannessen (1998: 183ff.) for a more detailed discussion of this argument and for other arguments against Kayne's position. So, although Kayne's analysis is able to account for the unacceptable cases of initial coordination in (8), his analysis does not account for the wellformedness of the coordinate constructions in (6). However, if we assume that *either* is a focus particle, the observations with respect to the possibility or impossibility of initial and non-initial coordination follow automatically. That is, coordination is possible of all categories, but *either* and other initial conjunctions are not allowed to attach to non-maximal projections because focus particles in general are not allowed to attach to non-maximal projections.

Summarizing, in this section it was shown that English *either* and Dutch *of* are subject to the same syntactic restriction on their distribution as are focus particles in these languages. The restriction is that these elements may attach to maximal projections only. This does not imply that the distribution of initial conjunctions is

completely identical to the distribution of focus particles, though. Initial conjunctions must cooccur with a coordinate construction which is formed by a specific conjunction. In particular, initial conjunctions must precede this other conjunction. So initial conjunctions seem to be focus particles with a rather limited distribution. Furthermore, initial conjunctions and focus particles differ in the exact types of maximal projections they can adjoin to. As Bayer (1996: 11) notes, *only* and *even* can adjoin to VP, DP, PP, AP and CP. *Either* is able to adjoin to these phrases but, in addition, can adjoin to IP too. This was already illustrated by example (2b) in section 1. However, this difference between *only* and *either* does not coincide with a sharp distinction between focus particles, on the one hand, and initial conjunctions, on the other. In general, there seems to be considerable variation among focus particles along several dimensions, including their placement (Hoeksema & Zwarts, 1991; König, 1991). The same variation can be observed among initial conjunctions. The initial conjunction *both*, like the focus particles *only* and *even* but unlike the initial conjunction *either*, is not able to attach to IP. Because of this variation, the difference between *only* and *either* with respect to the possibility to attach to IP will be viewed as the result of certain idiosyncratic properties of focus particles.

In the next section, we will look at a second aspect in which *either* resembles focus particles, namely its association with focus. As will be shown, *either* must c-command the element in the first disjunct bearing contrastive focus.

3. Association of *either* with focus

The central property of focus particles is that they are focus sensitive. That is, focus particles must occur with some phrase which is phonologically prominent. A well-known example is the following, taken from Rooth (1985). Suppose John introduced Bill and Tom to Sue and performed no other introductions. Now consider the following sentences, where capitals indicate focus marking by stress.

(16) John only introduced Bill to SUE.

(17) John only introduced BILL to Sue.

In the situation sketched above, (16) is true while (17) is false. Thus, focus can have truth-conditional effects, although it need not. The truth-conditional effects in the sentences above are brought about by the presence of the focus particle *only*. This particle 'associates' with the focused element, in the terminology of Jackendoff (1972). According to Rooth (1985), focus introduces a set of alternatives. Under Rooth's analysis, this set of alternatives is obtained by substituting the focused element for a variable in the predicate structure. In (16), for example, this set of alternatives is the set of properties of the form 'introduce Bill to y'. *Only* makes sure that if John has a property of the form 'introduce Bill to y', then it is the property 'introduce Bill to Sue'. Similarly, the set of alternatives for (17) is the set of properties of the form 'introduce y to Sue'. In (17), the effect of *only* is that if John has a property of the form 'introduce y to Sue', then it is the property 'introduce Bill to Sue'. Thus, the semantic effect of *only* is that it marks only one of the alternatives introduced by focus as being the case, and excludes all others.

As the following pair of sentences shows, *either* interacts with focus in a more or less similar fashion:

(18) John either introduced Bill to SUE or MARY.

(19) John either introduced BILL to Sue or MARY.

Sentence (18) is true if John introduced Bill to Sue or Mary, but not if John introduced Bill to someone else, for example to Tom. Similarly, sentence (19) is true if John introduced Bill or Mary to Sue, but not if John introduced someone else to Sue, say Tom. Of course, if *either* is omitted, these coordinate structures still display focus-sensitive ambiguity. This ambiguity depends on whether *Mary* in the second disjunct is interpreted as being parallel to *Bill* or to *Sue* in the first disjunct and is resolved through the placement of contrastive stress. But note that even though the construction with which *either* co-occurs is focus sensitive itself, this does not imply that *either* cannot be focus sensitive too. Below we will show that the relation between *either* and the phrase bearing contrastive focus is subject to the same conditions as the relation between *only* and the phrase in focus.

A well-known observation with respect to *only* is that it can associate with any focused phrase in the sentence, as long as the particle c-commands the focused phrase.[2] This is illustrated by the following examples (cf. Jackendoff, 1972):[3]

(20) a. * JOHN only gave his daughter a new bicycle.

b. John only GAVE his daughter a new bicycle.

c. John only gave HIS daughter a new bicycle.

d. John only gave his DAUGHTER a new bicycle.

e. John only gave his daughter a NEW bicycle.

f. John only gave his daughter a new BICYCLE.

The same pattern can be observed with *either*:

(21) a. * JOHN either gave his daughter a new bicycle or BILL.

b. John either GAVE his daughter a new bicycle or PROMISED her a new bicycle.

c. John either gave HIS daughter a new bicycle or BILL'S daughter.

d. John either gave his DAUGHTER a new bicycle or his SON.

e. John either gave his daughter a NEW bicycle or an OLD one.

f. John either gave his daughter a new BICYCLE or a new PORSCHE.

These examples show that *either* is not allowed to follow any focused phrase in the first disjunct which contrasts with a focused phrase in the second disjunct, witness the unacceptability of (21a). Rather, if such a focused phrase is present, *either* must c-command it.

Actually, the structural condition on the distribution of *either* must be even stronger: *either* needs the presence of a contrastive focus in its c-command domain. If no contrastively focused phrase is present, the sentence is unacceptable. This explains why the following sentence is marked:

(22) * Jane ate either rice or she didn't.

Because it is impossible to establish a relation of contrast between *rice* in the first disjunct and some other element in the second disjunct, *either* does not c-command a contrastive focus. Hence, this sentence is highly marked. This is yet another similarity

between *either* and *only*, since *only* also requires the presence of a focused phrase in its c-command domain. For example, if the sister of *only* is deaccented because it is dependent on some other element for its interpretation, as the VP anaphor *did* in (23), the result is unacceptable.

(23) * Jane ate rice because John only did.

This similarity between initial conjunctions and focus particles can also be witnessed in Dutch, where a distinction can be made between strong, stressable, pronouns such as *mij* (‘me’) and weak, unstressable, pronouns such as *me* (also meaning ‘me’). Only strong pronouns can be in focus. If the c-command domain of the initial conjunction *of* (‘either’) or the focus particle *alleen* (‘only’) contains a pronoun as its only element, this pronoun must be strong:

(24) a. Jane zag of mij of hem.
‘Jane saw either me (strong) or him.’
b. * Jane zag of me of hem.
‘Jane saw either me (weak) or him.’

(25) a. Jane zag alleen mij.
‘Jane saw only me (strong).’
b. * Jane zag alleen me.
‘Jane saw only me (weak).’

If the sister of the initial conjunction or the focus particle were a weak pronoun, the initial conjunction or focus particle would not c-command a focused phrase. As the unacceptability of (24b) and (25b) shows, this situation is not allowed. Apparently, the initial conjunction and the focus particle must always c-command a focused phrase. The observation that certain focus sensitive expressions fail to associate with reduced pronouns is not new, see for example Hoeksema and Zwarts (1991: fn. 3) for Dutch. Beaver and Clark (to appear) discuss the failure of English *only* to associate with the weak pronoun, or "leaner", *im*, in contrast to the focus sensitive expression *always*. As the above examples show, association of the initial conjunction *of* with a contrastive focus fails under similar conditions.

From the data discussed here we conclude that the structural conditions under which association with focus takes place are identical for the focus particle *only* and the initial conjunction *either* in English, and for the focus particle *alleen* and the initial conjunction *of* in Dutch.

4. Scope ambiguities with *either*

In the previous section, it was shown that *either*, like *only*, must always c-command a focused phrase in the first disjunct. In this section, we will look at another property that *either* seems to have in common with *only*, namely that they both give rise to scope ambiguities in certain cases but not in other cases.

As has been observed by Taglicht (1984: 150ff.), *only* can give rise to scope ambiguities when occurring in a subordinate clause.[4]

(26) They were advised to learn only [$_{DP}$ SPANISH].

(27) They were advised to only [$_{VP}$ learn SPANISH].

(28) They were only [$_{VP}$ advised to learn SPANISH].

In (26), *only* can have scope over the infinitival clause or over the matrix clause. If *only* has scope over the infinitival clause, the sentence expresses the restrictive advise that no other languages than Spanish should be learned. If *only* has scope over the matrix clause, we obtain the weaker reading that they were not advised to learn any other language. This reading leaves open the possibility that other languages are learned as well. Sentences (27) and (28), on the other hand, have only one reading, according to Taglicht. In (27), the scope of *only* is confined to the lower clause. This sentence only expresses the restrictive advise that they should not learn any other language. Sentence (28) expresses the weaker reading that they were not advised to learn any other language. The general pattern thus seems to be that scope ambiguities arise if the focus particle is attached to DP. These ambiguities are resolved if *only* is placed in front of a VP.

On the basis of this pattern, Rooth (1985: 83-4) and Krifka (1992: 40) suggest that the ambiguity of (26) is a normal quantifier scope ambiguity, *only Spanish* being a quantified DP. As Krifka puts it, “focus particles do not get wide scope of their own, but only when carried ‘piggy-back’ by an expression that can get wide scope”. Because VPs are no scope taking expressions, (27) and (28) are not ambiguous. With regard to (27) and (28), Rooth remarks that *only* appears to be acting as a scope marker here, marking its scope syntactically through its surface position.

Similar scope ambiguities have been observed in *either-or* constructions. As Rooth and Partee (1982) point out, simple *or*-disjunctions in English show scope ambiguities

in the presence of intensional verbs and other scope operators. Because of the interaction between the intensional verb *look* and the disjunction, the following sentence is ambiguous.

(29) Mary is looking for a maid or a cook.

This sentence has two *de dicto* readings. According to the narrow scope *de dicto* reading, Mary is looking for a servant and would be satisfied with anyone who is a maid or a cook. According to the wide scope *de dicto* reading, Mary is looking for a maid or Mary is looking for a cook, but the speaker does not know which. In addition to these two *de dicto* readings, the sentence also has a wide scope *de re* reading meaning that there is some particular person, who is a maid or a cook, and Mary is looking for this person. Because this *de re* reading is not relevant for the scope effects that can be observed in connection to the position of *either*, we will omit this reading from the present discussion.

According to Larson (1985), the *either-or* disjunction in (30) is ambiguous in exactly the same way as (29).

(30) Mary is looking for either [$_{DP}$ a maid or a cook].

(31) Mary is either [$_{VP}$ looking for a maid or a cook].

The disjunction can be interpreted inside or outside the scope of the intensional verb. Sentence (31), on the other hand, only has the wide scope reading. Here, the disjunction can only be interpreted outside the scope of the intensional verb. Larson's generalization is that when *either* occurs displaced from the disjunction (i.e., if the

phrase following *either* is larger than the phrase following *or*), the surface position of *either* marks the scope of the disjunction explicitly. On the other hand, when *either* occurs in its standard position adjacent to the disjunction, the sentence can be ambiguous. The explanation Larson proposes for his generalization is that if *either* has moved from its original position to another position at surface structure, it must stay there at LF. Hence, a sentence with displaced *either* is unambiguous. On the other hand, if *either* occurs in its standard position at surface structure, it can move to any possible surface position of *either* at LF. Thus, the ambiguity of sentences with non-displaced *either* is determined by the possible surface positions of this element.

Interestingly, the scope ambiguities in *either-or* constructions appear to be similar to those in constructions with *only*. Compare (32)-(34) to (26)-(28):

(32) They were advised to learn either [$_{DP}$ SPANISH or DUTCH].

(33) They were advised to either [$_{VP}$ learn SPANISH or DUTCH].

(34) They were either [$_{VP}$ advised to learn SPANISH or DUTCH].

Sentence (32) clearly is ambiguous. According to the first reading, they received an advise which said: learn Spanish or Dutch. Alternatively, this sentence also has the reading that the advise was to learn Spanish or the advise was to learn Dutch, but the speaker does not know which. The judgements for the other two sentences are somewhat less clear. For a number of the speakers of English which I consulted, the interpretation of sentence (33) is restricted to the first reading of (32). For sentence (34), most speakers of English allow only the second reading of (32). Note that these readings are exactly what Larson would predict for these constructions. These readings also pattern with the readings of the corresponding constructions with *only*.

However, there appears to be some variation with respect to the interpretation of the scope of *either* and *only*. In particular, some speakers also allowed for a wide scope reading for (33), but those that did also allowed for a wide scope reading for the corresponding sentence with *only*, (27). Also, speakers frequently were quite uncertain about their judgements, not only with respect to *either-or* disjunctions but also with respect to sentences with *only*. Further research is required to establish the exact conditions under which narrow scope readings and wide scope readings appear and disappear in these constructions.

In general, however, the interpretation of *either-or* disjunctions seems to pattern with the interpretation of focus particle constructions. If *either* appears in front of a DP disjunction, the sentence is ambiguous. Similarly, ambiguity arises if *only* appears in front of a DP. If *either* and *only* are placed in front of the matrix verb, they tend to act as scope markers. In these cases, the ambiguity is resolved. These scope effects receive a straightforward explanation if is assumed that *either* and *only* do not get wide scope of their own but only when attached to a scope taking expression, such as a noun phrase or a disjunction.

5. *Either* and exhaustivity

Thus far, it was shown that the initial conjunction *either* has a number of properties in common with the focus particle *only*. *Either* and *only* have a similar distribution, they are both sensitive to focus, and they can both give rise to scope ambiguities. These results are listed below:

(35) a. *Either* and *only* attach to XP only.

b. *Either* and *only* can attach to almost any major constituent.

c. *Either* and *only* associate with focus.

d. *Either* and *only* must c-command the focused phrase.

e. *Either* and *only* can give rise to scope ambiguities if attached to a scope taking expression.

f. *Either* and *only* behave as scope markers if attached to other expressions.

These similarities between *either* and *only* lack a satisfactory explanation if *either* is analyzed as a conjunction. On the other hand, these similarities automatically follow if *either*, like *only*, is a focus particle. Since *either* resembles *only* in many respects, the question arises whether *either* also resembles *only* with respect to its contribution to the interpretation of the sentence.[5] This will be the topic of this section.

With respect to the interaction of focus particles with the focus in the sentence, König (1991: 33) distinguishes the following three aspects: (i) sentences with focus particles entail the corresponding sentence without particles, (ii) focus particles quantify over the set of alternatives introduced by focus, and (iii) focus particles may include or exclude alternatives as possible values for the open proposition in their scope. Additive particles such as *also* and *too* add alternatives to the one explicitly mentioned in the sentence. *Only*, on the other hand, is a restrictive particle. It excludes all alternatives but the one explicitly mentioned in the sentence. Let us first look at the interpretation of sentences with *only*.

(36) a. John only introduced BILL to Sue.

b. John introduced BILL to Sue.

Sentence (36a) with *only* indeed entails the corresponding sentence without *only*, (36b). Furthermore, *only* quantifies over the set of alternatives introduced by focus. In the analysis of Rooth (1985), the VP modifier *only* quantifies over properties P. Rooth's semantic representation of (36a) is given in (37) (Rooth 1985: 44).

(37) $\forall P [[P\{j\} \& \exists y[P= \hat{}introduce'(y,s)]] \rightarrow P = \hat{}introduce'(b,s)]$

This representation says that if John has a property of the form 'introduce y to Sue', then it is the property 'introduce Bill to Sue'. Thus, the semantics of *only* involves universal quantification over properties. As can be seen from this semantic representation, *only* restricts the possible values for the property P to 'introduce Bill to Sue'.

Turning to *either*, it is clear that the sentence with *either* entails the corresponding sentence without *either*:

(38) a. John either introduced BILL to Sue or MARY.

b. John introduced BILL to Sue or MARY.

A semantic representation for (38a) similar to Rooth's (37) would be as follows:

(39) $\forall P [[P\{j\} \& \exists y[P= \hat{}introduce'(y,s)]] \rightarrow [P = \hat{}introduce'(b,s) \vee$
$P = \hat{}introduce'(m,s)]]$

According to this representation, if John has a property of the form ‘introduce y to Sue’, then it is the property ‘introduce Bill to Sue’ or the property ‘introduce Mary to Sue’. Thus, the set of alternatives is the same as for (37). But whereas (37) excludes all alternatives but one, (39) excludes all alternatives but two (or more, if the disjunction contains more than two disjuncts).

The question is whether *either* has a restrictive interpretation as the one in (39). In other words, is *either* exhaustive in that it requires all possible values for the property P to be expressed explicitly by the disjunction and that it excludes all other values for this property? Indeed, Zimmermann (2000: 267-8) claims that the function of *either* is to explicitly mark exhaustivity. He supports his claim by pointing at the observation that *either-or* disjunctions seem to require closure intonation. According to Zimmermann, disjunctions carrying closure intonation end on a low phrase-final tone and cover the space of all possibilities. Open disjunctions, on the other hand, end on a high phrase-final tone and express the possibility of each disjunct without making any claims to completeness. Since *either-or* disjunctions seem to require closure intonation, they seem to explicitly express exhaustivity.

Let us look at some way to test this assumption that *either* is exhaustive. That the focus particle *only* gives rise to exhaustive interpretations can be shown by the *No-Too* test (É. Kiss, 1998: 251):

(40) A: Only Jane called.
B: No, John called too.

Because B’s response with *too* is felicitous, *no* does not negate the proposition that Jane called, but rather the exhaustiveness expressed by *only*. However, if we follow

Zimmermann in his assumption that disjunctions are conjunctive lists of epistemic possibilities, we cannot apply this test to disjunctions without modification. The additive particle *too* indicates that B adds an assertion to the assertion expressed by A. If A uses a disjunction, however, A expresses a list of possibilities rather than an assertion. If B uses *too*, therefore, B's response should express a possibility rather than an assertion.

(41) A: Mr. X is either in Regent's park or in Victoria or in the City.

B: No, he might be in Brixton too.

To the three possibilities mentioned by A in (41), B adds a fourth possibility, hence the modal verb in B's response. If *either* gives rise to exhaustive interpretations, the response of B to the disjunction expressed by A (which is in fact example (26') of Zimmermann, 2000) should be felicitous here. Since B's response appears to be appropriate here, *either* seems to give rise to exhaustive interpretations.

Note that the kind of exclusion discussed in this section differs from the kind of exclusion refered to by the term 'exclusive *or*' or 'exclusive disjunction'. An exclusive disjunction 'A or B' is true when A is true, but B is not, or alternatively when B is true but A is not, but not when A and B are both true. An inclusive disjunction 'A or B', on the other hand, is true if A is true but not B, or B is true but not A, or A and B are both true. It is well-known from the literature that simple *or*-disjunctions can be interpreted inclusively or exclusively, depending on context and world knowledge (cf., e.g., Kamp and Reyle, 1993). The standard solution in semantics is to posit just one *or*, which has an inclusive meaning. The exclusive interpretation is derived pragmatically through the implication arising from the

Gricean maxim of quantity. Someone who uses a disjunction apparently is not in a position to claim that both conjuncts are true. Otherwise, the speaker would have used the stronger statement of a conjunction. The same appears to be true for *either-or* disjunctions. *Either-or* disjunctions can also be interpreted inclusively or exclusively, depending on context and world knowledge (McCawley, 1981). Many of the supposed examples of exclusive *either-or* disjunctions are examples in which it is impossible for more than one of the conjuncts to be true:

(42) Today is either Monday or Tuesday.

But the following sentence, adapted from Kamp and Reyle (1993), seems to be true even if Fred failed both the practical part and the theoretical part.

(43) If Fred has failed the entire test, then he has either failed the practical part or he has failed the theoretical part.

This means that also in *either-or* disjunctions, *or* can be interpreted inclusively. So *either* does not force an exclusive reading on the disjunction.

Note, furthermore, that many speakers of English allow *either-or* coordination to conjoin more than two conjuncts:[6]

(44) Jane ate either rice or beans or potatoes.

If *either-or* coordination is not necessarily binary, then *either* does not have a dual meaning in the sense that exactly two alternatives are considered. Since the number of

alternatives being considered in *either-or* constructions depends on the number of disjuncts, it is not for all speakers of English restricted to two.

Summarizing, in this section we have looked at the interpretation of *either*. An informal translation of *either* as 'exactly one of exactly two alternatives' is not confirmed by the facts. *Either* does not force an exclusive interpretation on the disjunction, nor does it seem to have a dual meaning. If *either* has any effect at all on the interpretation of the sentence, it must be that it yields an exhaustive interpretation. If it is true that *either* yields an exhaustive interpretation, *either* also resembles *only* in the effects of focus on its interpretation. On the other hand, if *either* does not yield an exhaustive interpretation, *either* has no truth-conditional effects at all. In this case, the element *either* occurring with disjunctions is a purely optional element. In both cases, the effects of *either* on the interpretation of the sentence lie in its relation to the focus in the sentence. With respect to its association with focus, *either* behaves identical to the focus particle *only* and is subject to the same restrictions.

The next section will be concerned with previous analyses of disjunctive *either*. In previous studies, *either* has been analyzed as a conjunction, as an adverb and as a quantifier. As was already shown in section 2, analyzing *either* as a conjunction is highly problematic because of the relatively free distribution of *either*. With respect to its distribution, *either* resembles focus particles and differs from simple conjunctions such as *or*. Analyzing *either* as an adverb or as a quantifier would explain these distributional differences between *either* and *or*, but would fail to provide an explanation for the observed sensitivity of *either* to focus.

6. Previous analyses of displaced *either*

That *either* can occur in other positions than the position immediately preceding the first disjunct has been observed before. Proceeding from the assumption that *either* is a conjunction originating in the position immediately preceding the first disjunct, its relative freedom of distribution has been explained as the result of movement of *either* (Larson, 1985) or reduction of the second conjunct (Schwarz, 1999). This section discusses these two approaches to displaced *either*.

According to Larson's (1985) movement analysis, left shifted *either* (as in (3a), repeated below as (45)) is accounted for by leftward movement of *either*.[7]

(45) Jane either ate [$_{DP}$ rice] or [$_{DP}$ beans].

In his analysis, *either* immediately precedes the disjunction at deep structure, but is moved away from its original position at surface structure to mark the scope of the disjunction:

(46) Jane either$_i$ ate [$_{DP}$ t_i [$_{DP}$ rice] or [$_{DP}$ beans]].

This movement analysis of *either* provides an elegant account of instances of left shifted *either* as well as of certain scope ambiguities arising with *either* (see section 4 for a discussion of these scope ambiguities). However, this movement account cannot easily be extended to account for right shifted *either*, as in (3b), repeated below as (47):

(47) [$_{IP}$ Jane either ate rice] or [$_{IP}$ she ate beans].

If the conjuncts are assumed to be of the same sort, which is one of the most agreed upon assumptions with respect to coordination, *either* must originate in the position preceding the first IP in Larson's account. Deriving the surface position of *either* from its deep structure position therefore requires rightward movement, as can be seen from (48):

(48) $[_{IP}\ t_i\ [_{IP}$ Jane either$_i$ ate rice] or $[_{IP}$ she ate beans]].

Since rightward movement in general seems to be prohibited, a movement analysis must be rejected for right shifted *either*.

However, this seems to be too hasty a conclusion, because an alternative analysis of (47) seems possible which involves non-Across-The-Board movement of *Jane* to a higher position:

(49) Jane$_i$ $[_{IP}$ either $[_{IP}\ [_{IP}\ t_i$ ate rice] or $[_{IP}$ she ate beans]]].

This analysis would preserve both the assumption that conjuncts are of the same sort and the assumption that *either* immediately precedes the first conjunct. Moreover, this analysis only requires leftward movement. Indeed, ATB violations have also been observed in other coordinate constructions in English (see Heycock and Kroch, 1994: 272-3):

(50) [The bag holding his savings]$_i$ he $[_{I'}$ dropped t_i without a second thought], and $[_{I'}$ ran for the exit].

However, the non-ATB analysis illustrated in (50) cannot be extended to account for the following sentence, where *either* is preceded not only by the subject but also by an auxiliary:

(51) Jane will either eat rice or she will eat beans.

Because *Jane* and *will* do not form a single constituent in any syntactic framework allowing movement, they cannot have moved out of the first conjunct. Hence, no movement analysis is possible which is able to account for all instances of displaced *either*.

Indeed, Larson acknowledges that a movement account is not tenable for right shifted *either*. Therefore, he assumes that sentences like (47) involve an asymmetric disjunction of VP and IP rather than a symmetric disjunction of IP and IP:

(52) $[_{IP}$ Jane [either $[_{VP}$ ate rice] or $[_{IP}$ she ate beans]]].

The second conjunct (i.e., the IP) must be subject to a semantic constraint which requires this clause to contain a noun phrase which is coreferential with the main clause subject. If the coreferential noun phrase in the second conjunct is treated as a variable, the second conjunct can be reanalyzed as a 'derived VP' with the VP interpretation $\lambda x.$*(x ate beans)*. So although the conjuncts can be of a different syntactic category in Larson's analysis, they must be of the same semantic type. This explanation would account for the contrast in acceptability between (53a) and (53b), since (53a) violates this constraint on coreferentiality.

(53) a. * Jane either ate rice or John ate beans.

b. Jane either ate rice or she ate beans.

However, although it is conceivable that left shifted *either* is to be analyzed by movement of *either* and right shifted *either* in some other way, this is not a preferable outcome. Left shifted *either* and right shifted *either* appear to involve the same element *either,* bearing the same properties. A distinct treatment of left shifted *either* and right shifted *either* would, for example, not provide any explanation for their equal sensitivity to focus. Note that the pattern in (53) is fully predicted by the condition on focus particles that they c-command the element in focus. In (53a), the contrasted element *Jane* is not c-commanded by *either*, hence its unacceptability. In (53b), on the other hand, the contrasted phrase *rice* is c-commanded by *either*. This explains why (53b) is acceptable. No coreference constraint is required to explain this difference in acceptability, nor do we need to assume that coordination is asymmetric in these cases.

In fact, the proposed constraint on coreference is somewhat suspicious. Naturally occurring exceptions to Larson's semantic constraint on coreference can be found rather easily:

(54) 'Within a matter of a day or two,' Dr. Yeomans said, 'the situation will become far more clear, and it will either become a nonevent or some appropriate announcement will be made - but not until this committee's had a chance to chew on it for a bit.'[8]

(55) ‘I believe,’ he said, ‘positions will either harden or there will be a settlement in the next few months.’[9]

(56) Perhaps Wallace is under the impression that the team will either change its mind or the league will win on appeal.[10]

(57) Yet our invitation was either a complete hoax [...] or else we had good reason to think that important issues might hang upon our journey.[11]

(58) The attachment will either open automatically or a dialog box will appear requesting that you either open the file from its current location or save the file.[12]

In none of these sentences is it possible to form a derived VP from the second conjunct by abstracting over material also present in the matrix clause. For example, no straightforward analysis is possible according to which the clause *some appropriate announcement will be made* in (54) is semantically incomplete and takes the part *it will* as its argument. Right shifted *either* is not restricted to the position immediately preceding IP or VP, witness example (57). Here, the first conjunct is a DP rather than a VP. Again, it is impossible to reanalyze the second conjunct as a ‘derived DP’ with the corresponding semantics. This means that the two conjuncts in these examples cannot be analyzed as being of the same semantic type. Thus, an analysis in terms of asymmetric coordination as proposed by Larson is not possible for these sentences. Under Larson’s analysis, these sentences are incorrectly predicted to be unacceptable.[13]

The main objection to Larson's movement analysis, however, concerns its explanation for why *either* can occur displaced. According to Larson, *either* moves leftward to mark the scope of the disjunction. However, left shifted *either* frequently appears in non-scopal positions, for example the position in (59) below.

(59) The rope drags, either on land or sea, while the balloon is free.

An investigation of all occurrences of *either* in the Selected Works of Edgar Allan Poe revealed that examples such as (59), where left shifted *either* appears in front of a PP in which a DP disjunction is embedded, occur rather frequently. In these cases as well as in cases of right shifted *either* such as (57), *either* occurs in a non-scopal position. Moreover, displacement of *either* does not seem to have any truth-conditional effects at all in these cases. This renders an analysis of shifted *either* according to which *either* moves for scopal reasons certainly less plausible.

Another analysis which proceeds from the assumption that *either* is a conjunction, is Schwarz's (1999) reduction analysis. According to Schwarz, what appears to be left shifted *either* is the result of a reduction operation affecting the second conjunct. This reduction operation is the familiar operation of Gapping (Ross, 1970). Schwarz's reduction analysis is therefore reminiscent of Seuren's (1985), who also derives phrasal initial coordination from clausal initial coordination. In Schwarz's analysis, the underlying structure of (3a) is (60), where the strike-out represents reduced material.

(60) Jane either [$_{VP}$ [$_{VP}$ ate rice] or [$_{VP}$ ~~ate~~ beans]].

Schwarz's main argument against a movement analysis, which is aimed not only against Larson's analysis but also against a Quantifier Raising analysis inspired by Munn (1993), is that the conditions on overt movement of *either* are not completely identical to the conditions on covert movement of quantifiers. Although the locality conditions on movement of *either* include the locality conditions on Quantifier Raising such as the Complex NP Constraint, movement of *either* is subject to an additional restriction that does not hold for quantifiers. This restriction, which Schwarz terms the Finality Restriction, entails that left shifted *either* is only possible if the disjunction occurs finally (example (61a) is Schwarz's (20a) and (61b) is Schwarz's (18a)):

(61) a. This pissed either Bill or Sue off.

b. ?? Either this pissed Bill or Sue off.

Under a movement account of left shifted *either*, (61a) is the source of (61b). Since no islands intervene between *either* and the disjunction, (61b) is incorrectly predicted to be acceptable. Note that Quantifier Raising does not yield an ill-formed result when applied in this context. The following sentence can be interpreted with a wide scope reading for *every guest* in (62) (= Schwarz's (22a)).

(62) Something pissed every guest off.

Schwarz argues that the Finality Restriction can be explained by the general requirement on gapped sentences that the conjuncts must be in some sense parallel. Remnants in the second conjunct that do not have a correlate in the first conjunct are

unacceptable, unless they can be analyzed as resulting from Right Node Raising. Because it is almost impossible to raise particles such as *off*, the unacceptability of (61b) is the result of the impossibility to associate the final particle *off* with the particle verb in the second conjunct as well as with the particle verb in the first conjunct.

So Schwarz claims that the possibility of *either* to appear to the left of its putative original position and the Finality Restriction on the occurrence of left shifted *either* should be explained in the same way: left shifted *either* is the result of Gapping and the Finality Restriction is the result of a parallelism requirement on gapped sentences. However, Schwarz's Gapping analysis is not able to account for right shifted *either* in the same way that it accounts for left shifted *either*. Gapping, as it is known from the literature, is a grammatical process which deletes the finite verb in the second conjunct of coordinate constructions under identity with material in the first conjunct. In addition to the finite verb, also other elements may be deleted. If *either* is assumed to always immediately precede the disjunction, as Schwarz does, the conjuncts in (3b) will be as indicated in (63).

(63) Jane either [[$_{VP}$ ate rice] or [$_{IP}$ she ate beans]].

But given this structure, there is no way in which these conjuncts could have been derived from a coordinate structure with identical conjuncts by means of Gapping. Because the second conjunct does not contain a gap, Gapping cannot have applied here. A possible way out would be to assume that (63) is derived from (64):

(64) Jane either [[$_{IP}$ Jane ate rice] or [$_{IP}$ she ate beans]].

Here, *either* immediately precedes the disjunction. In addition, the two conjuncts are of the same category. However, it is unclear how an underlying structure such as (64) could arise at all, since it contains a main clause subject as well as two embedded subjects. Moreover, to arrive at the surface structure in (63), reduction must affect the first conjunct rather than the second one. But Gapping is not able to affect the first conjunct in English and no other reduction operation is capable of deleting a non-peripheral subject from the first conjunct in English. Therefore, (63) cannot have been derived from (64) through reduction. This shows that sentences like (3b) are also problematic for Schwarz's reduction analysis.

On the other hand, Schwarz's explanation of the Finality Restriction as a parallelism requirement on gapped sentences can be maintained if is assumed that this requirement not only holds for gapped sentences but for conjoined focus expressions in general. Focus plays a central role in gapped sentences too, in that remnants of Gapping must contain a focused phrase. Therefore, the parallelism requirement might very well be a general requirement on parallelism between focused and backgrounded phrases in the conjuncts of a coordinate construction.

7. Locality effects with *either*

Although the movement analysis and the reduction analysis both fail to account for right shifted *either*, they correctly predict that the relation between left shifted *either* and the disjunction is a local one. Movement of *either* and the reduction operation of Gapping are both subject to locality conditions. These locality conditions do not

automatically follow from the status of *either* as a focus particle. As an illustration of the local relation between *either* and the disjunction, consider the following sentence, which shows that *either* may not be separated from the disjunction by a complex noun phrase:

(65) * Jane either revised her decision to cook RICE or BEANS.

In contrast, the relation between *only* and its focus may be long-distance (cf., e.g., Rooth, 1985):

(66) Jane only revised her decision to cook RICE.

This sentence may be understood with narrow focus on *rice*. The contrast between (65) and (66) seems to indicate that there must be some syntactic relation between *either* and the disjunction. Interestingly, locality effects can not only be observed with left shifted *either*, as in (65), but also with right shifted *either*:

(67) * The guy who either JANE had invited arrived or the guy who JOHN had invited did.

Notice, first, that the locality effects with right shifted *either* can neither be explained under Larson's account nor under Schwarz's account. Larson assumes that right shifted *either*, in contrast with left shifted *either*, does not involve any movement. Schwarz even argues that none of the cases of displaced *either* are derived through movement. The presence of locality effects with left shifted *either* as well as with

right shifted *either* suggests a unified account of these two constructions which involves movement of some kind.

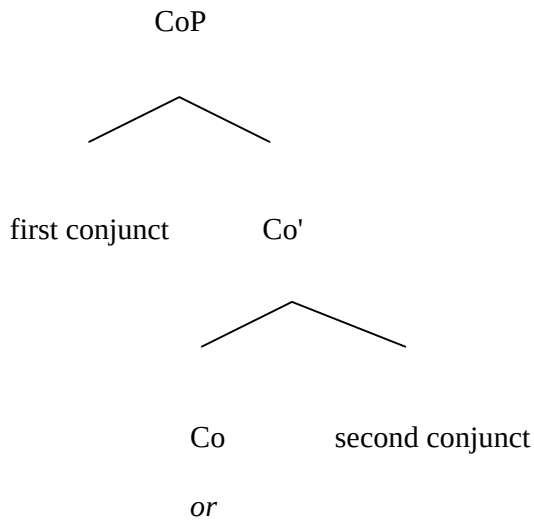
Important for the present discussion is to note that the unacceptability of (67) cannot be due to association of *either* with its focus over a syntactic domain which cannot be crossed by overt syntactic movement, such as a complex noun phrase. Because *either* and its focus *Jane* both occur inside the complex noun phrase, *either* does not associate with its focus over a syntactic island. Therefore, the unacceptability of (67) cannot be caused by the requirement that the relation between *either* and its focus must be a local one. Instead, the unacceptability of this sentence appears to be caused by locality conditions with respect to the relation between *either* and *or*. But if *either* must be in a local relation to *or*, this also accounts for the unacceptability of (65). From this we can conclude that the above examples do not present any evidence for a difference between *either* and *only* apart from the obligatory co-occurrence of *either* with *or*. Just as there are no locality conditions with respect to the relation between *only* and its focus, there are no locality conditions with respect to the relation between *either* and its focus.

A plausible explanation for the observed locality effects in (65) and (67) is that *either* originates in the position of *or* and moves leftward in all cases. Movement could then be driven by the requirement that *either* must have the focused phrase in the first conjunct in its syntactic scope. Such an analysis would explain why locality effects are observed with left shifted *either* as well as with right shifted *either*. It would also offer an explanation for why initial conjunctions always occur with a particular ordinary conjunction, for example, *either* with *or*. The focus particle and its conjunction would occur together in the lexicon and be base-generated as a pair under the same syntactic node. But only the focus particle would move up to satisfy its focus

requirements. However, such an analysis seems highly problematic in the light of standard views on coordination.

Under a standard analysis of coordination as in (68) (cf. Johannessen, 1993, 1998; Munn, 1987), *or* is the head of a Conjunction Phrase (CoP).

(68)



If *either* moves upward from the position of *or* to c-command the focused phrase in the first conjunct, the structure of (3a) would be as follows:

(69) Jane either$_i$ ate [$_{DP}$ [$_{DP}$ RICE] t_i or [$_{DP}$ BEANS]].

After movement, however, the structure of (3b) would be problematic:

(70) [$_{IP}$ [$_{IP}$ Jane either$_i$ ate RICE] t_i or [$_{IP}$ she ate BEANS]].

In its surface position in (70), *either* does not c-command its trace. In fact, proceeding from the structure in (68) no analysis seems possible according to which *either* and *or*

are base generated in the same position and one of the two (or perhaps even both) moves to its surface position. So how should we account for the syntactic relation between *either* and *or* then? Because an answer to this question probably requires rethinking the structure of coordination and hence would go far beyond the topic of this study, this will be left for further research.

This study argues that *either* is a focus particle. There have been earlier proposals to analyze *either* as an element which is not a conjunction. Johannessen (1993: 105ff., 1998: 154ff.), for example, argues that *either*, *both* and *neither* and their counterparts in languages such as Norwegian, German, Dutch, French, Modern Greek, Japanese and Latin are adverbs. This accounts for why these elements can occur far from the rest of the coordinate structure. Analyzing initial conjunctions as adverbs also explains why initial conjunctions can sometimes trigger inversion. The analysis of *either* proposed in this article is fully compatible with Johannessen's view on initial conjunctions, since focus particles are generally considered a special subclass of adverbs. In addition, the analysis proposed here offers an explanation for the focus sensitivity of these elements.

Another proposal in the literature is that *either*, *both* and *neither* are quantifiers (Dougherty, 1970; Higginbotham, 1991; Munn, 1993). This would explain why *both* can also occur with a plural NP which is not a coordinate structure (e.g., *both men*), and why *either* can occur with a singular count noun (e.g., *either man*). Although this may be true for initial conjunctions in English, this proposal cannot be extended to all languages that have initial conjunctions. In Dutch, for example, the initial conjunctions *of* ('either'), *en* ('both') and *noch* ('neither') do not display any quantifier-like behaviour and cannot be used to modify non-conjoined NPs. This

suggests that the quantifier-like behaviour of *either* might be a coincidental property of this element which is not tied to its status as a focus particle.

In the next section, additional evidence is provided showing that Dutch initial *of* ('either') patterns with adverbs in general and with focus particles in particular with respect to scrambling.

8. Scrambling in Dutch *of-of* constructions

In this section, we will look at the interaction of initial conjunctions with free focus. The type of focus that was discussed earlier, and which is associated with focus particles, is sometimes called bound focus (cf. Jacobs, 1984). Free focus, on the other hand, is the result of a complex interaction between syntactic structure, context and intonation. The phenomenon of scrambling is thought to be related to this latter type of focus. In this section, it will be argued that the presence of the Dutch initial conjunction *of* triggers the occurrence of scrambling effects in Dutch *of-of* constructions. Interestingly, the same effects can be witnessed with focus particles.

In Dutch, disjunction can be expressed by the conjunction *of* ('or') or by the pair *of-of* ('either-or'). According to Borsley (1994: 241), for languages in which initial conjunctions are identical to ordinary conjunctions, an analysis of initial conjunctions as conjunctions is even more plausble than for languages such as English, in which the two elements differ. Indeed, Kayne (1994: 58ff.) analyzes the first *et* ('and') in the French coordinate construction *et Paul et Michel* ('both Paul and Michel') as a conjunction (see also Progovac, 1998, who refers to this phenomenon as conjunction doubling) and would probably analyze the first *of* in Dutch *of-of* constructions as a

conjunction too. However, just like English *either*, this first *of* can shift to the left and to the right of its standard position (Haeseryn et al., 1997: 1446ff., 1507ff.):

(71) Of Jan zal de rozen snoeien of de tulpen planten.
Either Jan will the roses prune or the tulips plant
'Either Jan will prune the roses or plant the tulips.'

(72) Jan zal of de rozen snoeien of hij zal de tulpen planten.
Jan will either the roses prune or he will the tulips plant
'Jan will either prune the roses or he will plant the tulips.'

Analyzing *of* as a conjunction here yields the same problems as discussed above for shifted *either*. This suggests that Dutch *of* should probably not be analyzed as a conjunction either.

As de Vries (1992: 21) notes, the position in front of the initial conjunctions *en* ('both'), *of* ('either'), *noch* ('neither') and *zowel* ('both') seems to resist indefinite DPs. De Vries only gives examples with the pairs *en-en* ('both-and'), *zowel-als* ('both-and') and *noch-noch* ('neither-nor'), but the same effect can be observed in constructions with the pair *of-of* ('either-or'). Consider the contrast between the following two Dutch sentences:

(73) dat zij de rozen of geplant heeft of gesnoeid heeft
that she the roses either planted has or pruned has

‘that she has either planted or pruned the roses’

(74) ? dat zij twee rozen of geplant heeft of gesnoeid heeft
that she two roses either planted has or pruned has
‘that she has either planted or pruned two roses’

Sentence (74), where an indefinite DP *twee rozen* (‘two roses’) precedes the initial conjunction *of*, is worse than (73), where a definite DP occupies this position. Note that (74) only seems acceptable if *twee rozen* (‘two roses’) receives a strong reading (meaning ‘two of the roses’ or ‘those two roses’) rather than a weak existential reading (‘two non-specific roses’). At first sight, these sentences seem to provide counterevidence against our claim in section 2 that initial conjunctions attach to maximal projections only. That is, the structure of (73) appears to be the following:

(75) $[_{CP}$ dat zij $[_{VP}$ $[_{V'}$ de rozen of geplant heeft of gesnoeid heeft]]]

According to this representation, the initial conjunction *of* occurs inside the VP rather than adjoined to the VP. How can we account for this apparent counterexample to our generalization that initial conjunctions always adjoin to maximal projections? In fact, sentences like (73) yield Klein’s (1985) strongest argument for his claim that initial coordination of verbal heads is possible in Dutch.

Surprizingly, if the indefinite DP follows the initial conjunction *of*, the sentence suddenly becomes acceptable under the existential reading:

(76) dat zij of twee rozen geplant heeft of gesnoeid heeft

that she either two roses planted has or pruned has

'that she has either planted or pruned two roses'

This example shows that the initial conjunction *of* can be acceptable in left shifted position while the same sentence with *of* occurring in its standard position preceding the first conjunct (i.e., (74)) is much worse. Definite DPs are acceptable in the position in front of *of* as well as in the position following *of*:

(77) dat zij of de rozen geplant heeft of gesnoeid heeft

that she either the roses planted has or pruned has

'that she has either planted or pruned the roses'

The pattern observed here appears to be similar to the pattern that DPs in Dutch display when scrambling takes place in the presence of an ordinary sentential adverb such as *gisteren* ('yesterday'). Scrambling is the descriptive term that is used to refer to the occurrence of an object to the left side of an adverb in an SOV language. A well-known observation with respect to the standard cases of scrambling is that definite DPs are free to scramble, indefinite DPs often do not allow scrambling and pronouns are often forced to scramble (van der Does & de Hoop, 1998). In certain cases, scrambling of indefinite DPs is not infelicitous but induces a change of meaning. These scrambled indefinite DPs will then get a strong (i.e., partitive or referential) reading.

If the observed preference for DPs to appear in a specific position with regard to the initial conjunction *of* indeed results from scrambling, the prediction is that

pronouns should be much better in the position preceding *of* than in the position following *of*. This prediction seems to be borne out by the following examples:

(78) dat zij ze of geplant heeft of gesnoeid heeft
that she them either planted has or pruned has
'that she has either planted or pruned them'

(79) ?? dat zij of ze geplant heeft of gesnoeid heeft
that she either them planted has or pruned has
'that she has either planted or pruned them'

These scrambling effects in Dutch *of-of* constructions are completely identical to the scrambling effects DPs display with sentential adverbs.[14] This suggests that the position of the direct object in the above examples can be explained through the occurrence of scrambling. If this is true, we can also explain the apparent counterexamples against our generalization that *of* can attach to maximal projections only. If the position of the direct object in (73) and (74) is the result of scrambling, the structure of (73) is as in (80).[15]

(80) $[_{CP}$ dat zij [de rozen]$_i$ $[_{VP}$ of $[_{VP}$ t_i geplant heeft of gesnoeid heeft]]]

Here, the initial conjunction *of* is attached to a maximal projection, in accordance with our assumptions about initial conjunctions.

Because the initial conjunction *of* is argued to be a focus particle, the question immediately arises whether other Dutch focus particles give rise to scrambling effects too. That this indeed is the case, is illustrated by the following sentences:

(81) dat ik alleen de rozen geplant heb
that I only the roses planted have
'that I have only planted the roses'

(82) dat ik de rozen alleen geplant heb
that I the roses only planted have
'that I have only planted the roses'

In (81), the DP *de rozen* ('the roses') appears to the right of the focus particle *alleen* ('only'), whereas it appears to the left of this adverb in (82). With indefinites, on the other hand, scrambling is infelicitous, as (84) shows.

(83) dat ik alleen twee rozen geplant heb
that I only two roses planted have
'that I have only planted two roses'

(84) ? dat ik twee rozen alleen geplant heb
that I two roses only planted have
'that I have only planted two roses'

Pronouns, finally, only allow the scrambled version:

(85) dat ik ze alleen geplant heb
that I them only planted have
'that I have only planted them'

(86) *? dat ik alleen ze geplant heb
that I only them planted have
'that I have only planted them'

Summarizing, scrambling in Dutch *of-of* constructions displays the same pattern of acceptability as is displayed with ordinary adverbs and with focus particles. This is yet another argument that *either* is not a conjunction but an adverb, albeit a special one belonging to the subclass of focus adverbs. A recently advocated view with respect to scrambling is that scrambling is related to anaphoricity and intonation (cf. Choi, 1996; Neeleman & Reinhart, 1998; Costa, 1998; de Hoop, 1999). Neeleman and Reinhart (1998), for example, argue that scrambling affects the assignment of sentence stress. In unscrambled VPs, the default sentence stress falls on the object, whereas in scrambled VPs sentence stress falls on the verb. Because scrambled objects are destressed, scrambling can only take place if it is appropriate for the object to be fully destressed. This is the case if the object has been mentioned previously in the discourse or if it is the topic of the discourse.

The observed scrambling effects in Dutch *of-of* constructions therefore provide additional evidence for our hypothesis that initial conjunctions such as English *either* and Dutch *of* are focus particles, whose position is influenced by focus and intonation. In section 3, it was shown that *either* must c-command an element carrying

contrastive stress. This section showed that the Dutch initial conjunction *of* can precede a direct object only if this object can receive stress. Furthermore, *of* can follow a direct object only if it is appropriate for this object to be fully destressed. Whether an object can receive stress or not depends on the structure of the discourse. The scrambling effects shown in this section thus suggests that, even if two positions are equally possible according to the conditions on the distribution of focus particles discussed earlier, there is no true optionality in the placement of *of* and other focus particles. Rather, the position of the focus particle seems to split the expression into two parts. The part that is c-commanded by the focus particle tends to express the information in focus, that is, the non-anaphoric part. The other half of the sentence tends to express the background information or, in other words, the anaphoric part of the sentence.

9. Final remarks

In this study, it was shown that the initial conjunction *either* shares many properties with the focus particle *only*. These properties include their distribution, their sensitivity to focus, the scope ambiguities they participate in, and the exhaustive interpretation they give rise to. The observed similarities between *either* and *only* remain unexplained under an analysis of *either* as a conjunction, but follow if *either* is analyzed as a focus particle. Evidence from Dutch suggests that initial conjunctions in general might be focus particles, even if the initial conjunction is identical in form to an ordinary conjunction.

The view that initial conjunctions are focus particles implies that the distribution of these elements is not only determined by syntactic factors, but also by pragmatic and prosodic factors. This view contrasts with the traditional view, which holds that the position of initial conjunctions is determined purely syntactically on the basis of the size and position of the coordinate construction. According to the analysis proposed here, the clause containing an initial conjunction is subject to several factors influencing the position of the initial conjunction. In contrast, the second conjunct of a coordinate construction can be subject to a process of optional reduction, which applies to coordinate constructions in general. At this point, we might ask ourselves whether there is any relation at all between the position of the initial conjunction and the size of the second conjunct. It seems that there is, although the relation might not be as straightforward as is argued by Schwarz (1999) in his reduction analysis of shifted *either*. Although destressing and reduction are two separate phenomena, they are both anaphoric in nature (Williams, 1997). Reduction occurs mainly in the second conjunct and determines the surface form of the second conjunct. Destressing can also occur in the second conjunct, where it has the same effect as reduction, but only weaker. Destressing occurs in the first conjunct too, and here it is related to the position of the initial conjunction.

Now why would anaphoricity be marked differently in the first and second conjunct of a coordinate structure? This could be related to a well-known difference between the first and the subsequent conjuncts of a coordinate structure, namely that they behave differently with respect to reduction. Reduction of left peripheral or medial material is never possible from the first conjunct of a coordinate construction in English and Dutch. The first conjunct only allows for reduction of right peripheral material. In contrast with the first conjunct, left peripheral and medial anaphoric

material can be omitted very easily from the second conjunct, for example by means of Forward Conjunction Reduction or Gapping. In addition, the second conjunct also allows for reduction operations such as VP Deletion, Sluicing and Stripping, which eliminate right peripheral material.

Because very few reduction operations operate on the first conjunct, some other way might be needed to distinguish anaphoric material from non-anaphoric material in this conjunct (or focused material from background material, to use a different terminology). Stressing and destressing yields one way to distinguish non-anaphoric material from anaphoric material in the first conjunct. The choice for the position of the initial conjunction is another way to separate anaphoric material from non-anaphoric material. These two ways of marking anaphoricity seem to work together. The position of *either* thus appears to have the function of reinforcing the effects brought about by stressing and destressing.

Footnotes

[1] According to Klein (1985), initial coordination of verbal heads is possible in Dutch. However, see Hendriks and Zwart (2001) for a critical discussion of Klein's arguments. They argue for an alternative analysis of Klein's examples of initial coordination of verbal heads, according to which the conjuncts in these examples are all maximal projections. In section 8, Klein's strongest argument will be discussed.

[2] A c-commands B iff every X dominating A also dominates B.

[3] Although *even* has also been argued to associate with focus, *even* does not yield any truth-conditional effects but rather gives rise to a conventional implicature (Karttunen and Peters, 1979). As (i) illustrates, the distribution of focus is less restricted with the focus particle *even*:

(i) JOHN will even give his daughter a new bicycle.

Here, *even* occurs between one auxiliary verb and the VP, but still the subject DP can be focused (Jackendoff, 1972: 251). Only when two or more auxiliary verbs intervene between a focused subject and *even*, as in (ii), association with focus is blocked:

(ii) * JOHN will have even given his daughter a new bicycle.

This behaviour of *even* shows that, although focus particles have many characteristics in common, they do not form a homogeneous class.

[4] In Dutch, the reading corresponding to the wide scope interpretation is not available:

(i) (omdat) ze geadviseerd werden alleen Spaans te leren.
(because) they advised were only Spanish to learn

This sentence only has a narrow scope reading. A similar observation has been made with respect to corresponding sentences in German (von Stechow, 1991; Büring & Hartmann, 2001). In German, but not in Dutch, the infinitival clause can also occur non-extraposed. In that case, both readings are possible. According to von Stechow (1991), the extraposed infinitival clause is an island for movement out of it. Therefore, Quantifier Raising of [*only* DP] can only target the embedded IP, making the wide scope reading impossible. This view is fully compatible with the explanation for the scope ambiguities with *only* adopted in this paper. Büring and Hartmann (2001), on the other hand, explain the absence of the wide scope reading in extraposed infinitival clauses and the ambiguity of non-extraposed infinitival

clauses as directly following from the different adjunction sites of *only* at surface structure. However, their explanation crucially builds on the idea that focus particles only adjoin to elements of the verbal extended projection and never to DPs, which is an unattractive idea for various reasons. For example, according to this view, focus particles are strictly forbidden to appear in PPs in German. Given the similarities between the two languages and the absence of a wide scope reading for (i), the same prohibition presumably would have to hold for Dutch (although Büring and Hartmann only discuss German and English). However, the following example, which is taken from Hoeksema and Zwarts (1991: 61), shows that this claim is at least incorrect for Dutch :

(ii) Met alleen goede bedoelingen kom je er niet.
with only good intentions come you there not
'You won't get there with good intentions only'

[5] We will only be concerned with the aspects of interpretation arising from the interaction of *either* and *only* with the focus of the sentence. With respect to its inherent meaning, *only* has been argued to be a generalized quantifier (cf., e.g., de Mey, 1991; de Hoop, 1995). In particular, *only* has been argued to denote the superset relation. A sentence like *Only students like wine* is true if and only if the set of students is a superset of the set of individuals who like wine. In this sense, *only* is the reverse of *all*, which denotes the subset relation. Such a generalized quantifier interpretation does not seem to be available for *either* appearing in front of a disjunction of noun phrases. That is, it is not clear what should be the relation between the two sets in the sentence *Either students or teachers like wine*. Apparently, disjunctive *either* only resembles *only* with respect to its relation to focus, not with respect to its inherent meaning as a generalized quantifier.

[6] Sag et al. (1985) claim that *either-or* coordination and *both-and* coordination must be binary, in contrast to *neither-nor* coordination. However, they acknowledge the fact that there is variation among speakers of English with respect to *either* and that more liberal varieties of English allow for iterative *either-or* coordination.

[7] Munn (1993) and Winter (1998) suggest a modification of Larson's movement analysis according to which the coordinate structure moves instead of *either*. Munn, for example, argues that if *either* occurs displaced from the coordinate structure, its selectional restrictions are not satisfied (Munn, 1993: 187

ff.). By raising the conjunction *or* to the position of *either* at LF, followed by raising of the entire coordinate structure, these selectional restrictions will be satisfied. This accounts for the different readings of (i) and (ii). In (i), the narrow scope reading is allowed because the coordinate structure appears in the scope of the intensional verb. Alternatively, the noun phrase introduced by *either* could also have undergone QR at LF, which would have given us the wide scope reading. In (ii), the coordinate structure has obligatorily raised out of the scope of the intensional verb, thus accounting for the observation that (ii) does not have a narrow scope reading.

(i) Mary is looking for $[_{DP}$ either $[_{NP}$ or $[_{DP}$ a cook $[_{BP}$ a maid]]]]].

(ii) Mary is $[_{DP}$ either $[_{NP}$ or $[_{DP}$ a cook $[_{BP}$ a maid]]]]$_i$] looking for t_i.

Because these modifications of Larson's movement analysis suffer from the same drawbacks as Larson's analysis, they will not be discussed separately.

[8] After Asteroid Scare, Scientists Agree to Agree. New York Times, Late Edition (East Coast), Mar. 20, 1998.

[9] Vivien Kellerman, Garbage: Villages Sue Town Over Fees. New York Times, Late Edition (East Coast), Feb. 15, 1998.

[10] Selena Roberts, Wallace Comes To Camp But Stays a Knick in Limbo. New York Times, Late Edition (East Coast), Oct. 5, 1997.

[11] Arthur Conan Doyle, Sherlock Holmes.

[12] Yahoo! Mail - Online Support, http://help.yahoo.com/help/us/mail/read/read-17.html.

[13] While Larson's constraint on coreference is descriptively inadequate, there seems to be some truth in his observation that a certain amount of coreference is required between the conjuncts in an *either-or* disjunction. In several of the counterexamples presented in the text, the second conjunct contains a pronoun or definite description referring back to an element in the matrix clause or to the discourse. Notice that, in general, disjuncts in a disjunction must be related to each other, in the sense that they must be interpretable as relevant alternatives (Simons, 2001). This relatedness condition seems even stronger in disjunctions involving shifted *either*. An explanation for this observation might be that, since the position of *either* marks the focus of the sentence in these cases, the non-focal material is

accordingly marked as anaphoric or backgrounded. Hence, this non-focal material is characterized by a preference for pronouns and other anaphoric expressions to appear here.

[14] As Brigitta Hafka (p.c.) pointed out to me, the same pattern of acceptability can be observed in German *entweder-oder* ('either-or') constructions. This is expected, since German also is a scrambling language.

[15] According to Zwart (1993), direct objects are generated postverbally in both VO and OV languages. The OV order in Dutch subordinate clauses is derived by overt movement of the object to Spec-AgrO. The argument put forward here also holds if this structure is assumed for the subordinate clause under discussion.

References

Bayer, J., 1996. Directionality and Logical Form: On the Scope of Focusing Particles and Wh-in-situ. Kluwer, Dordrecht.

Beaver, D., Clark, B., to appear. “Always” and “Only”: Why not all Focus Sensitive Operators are Alike. Natural Language Semantics.

Borsley, R.D., 1994. In Defense of Coordinate Structures. Linguistic Analysis 24, 218-246.

Büring, D., Hartmann, K., 2001. The syntax and semantics of focus-sensitive particles in German. Natural Language & Linguistic Theory 19, 229-281.

Choi, H.-H., 1996. Optimizing Structure in Context: Scrambling and Information Structure. PhD Dissertation, Stanford University.

Costa, J., 1998. Word Order Variation: A constraint-based approach. PhD Dissertation, University of Leiden.

Does, J. van der, de Hoop, H., 1998. Type-shifting and Scrambled Definites. Journal of Semantics 15, 393-416.

Dougherty, R., 1970. A Grammar of Coördinate Conjoined Structures: I. Language 46, 850-898.

Gazdar, G., Klein, E., Pullum, G.K., Sag, I.A.,1985. Generalized phrase structure grammar. Basil Blackwell, Oxford.

Grootveld, M., 1994. Parsing Coordination Generatively. PhD Dissertation, University of Leiden.

Haeseryn, W., Geerts, G., Romijn, K., Rooij, J. de, Toorn, M.C. van den, 1997. Algemene Nederlandse Spraakkunst. Martinus Nijhoff, Groningen.

Hendriks, P., Zwart, J.-W., 2001. Initiële coördinatie en de identificatie van woordgroepen. Tabu 31: 3/4, 105-118.

Heycock, C., Kroch, A., 1994. Verb movement and coordination in a dynamic theory of licensing. The Linguistic Review 11, 257-283.

Higginbotham, J., 1991. Either/Or. In; T. Sherer (Ed.), Proceedings of the North East Linguistics Society 21. GLSA Publications, Amherst, MA, pp.143-155.

Hoeksema, J., Zwarts, F., 1991. Some remarks on focus adverbs. Journal of Semantics 8, 51-70.

Hoop, H. de, 1999. Optional Scrambling and Interpretation. In: Bennis, H., Everaert, M. (Eds.), Interface Strategies.

Hoop, H. de, 1995. “Only” a matter of context? In: den Dikken, M., Hengeveld, K. (Eds.), Linguistics in the Netherlands 1995. pp.113-124.

Jackendoff, R., 1972. Semantic Interpretation in Generative Grammar. MIT Press, Cambridge, MA.

Jacobs, J., 1984. Funktionale Satzperspektive und Illokutionssemantik. Linguistische Berichte 91, 25-58.

Johannessen, J.B., 1998. Coordination. Oxford University Press, New York/Oxford.

Johannessen, J.B., 1993. Coordination: A Minimalist Approach. PhD Dissertation, University of Oslo.

Kamp, H., Reyle, U., 1993. From Discourse to Logic. Introduction to Modeltheoretic Semantics of Natural Language, Formal Logic and Discourse Representation Theory. Kluwer, Dordrecht.

Karttunen, L., Peters, S., 1979. Conventional Implicature. In: Oh, C.-K., Dinneen, D.A. (Eds.), Syntax and Semantics, Vol. 11: Presupposition. pp.1-56.

Kayne, R.S., 1994. The Antisymmetry of Syntax. MIT Press, Cambridge, MA.

Kiss, É., 1998. Identificational focus versus information focus. Language 74.2, 245-273.

Klein, M., 1985. Coördinatieverschillen tussen het Nederlands en het Engels. Spektator 15:6, 396-405.

König, E., 1991. The meaning of focus particles: A comparative perspective. Routledge, London/New York.

Krifka, M., 1992. A Compositional Semantics for Multiple Focus Constructions. In: Jacobs, J. (Ed.), Informationsstruktur und Grammatik. Westdeutscher Verlag, Opladen, pp.17-53.

Larson, R.K., 1985. On the Syntax of Disjunction Scope. Natural Language and Linguistic Theory 3, 217-264.

McCawley, J.D., 1981. Everything that Linguists have Always Wanted to Know about Logic * but were ashamed to ask. Blackwell, Oxford.

Mey, S. de, 1991. “Only” as a Determiner and as a Generalized Quantifier. Journal of Semantics 8, 91-106.

Munn, A.B., 1993. Topics in the Syntax and Semantics of Coordinate Constructions. PhD Dissertation, University of Maryland.

Munn, A.B., 1987. Coordinate structures, X-bar theory and parasitic gaps, Unpublished manuscript, McGill University.

Neeleman, A., Reinhart, T., 1998. Scrambling and the PF Interface. In: Butt, M., Gueder, W. (Eds.), The Projection of Arguments. Lexical and Compositional Factors. CSLI, Stanford.

Neijt, A., 1979. Gapping: A Contribution to Sentence Grammar. Foris Publications, Dordrecht.

Progovac, L., 1998. Structure for Coordination. Part I. Glot International 3:7, 3-6.

Rooth, M., 1985. Association with Focus. PhD Dissertation, University of Massachusetts, Amherst.

Rooth, M., Partee, B., 1982. Conjunction, Type Ambiguity and Wide Scope Or. In: Flickenger, D., Macken, M., Wiegand, N. (Eds.), Proceedings of the First West Coast Conference on Formal Linguistics, Stanford University.

Ross, J.R., 1970. Gapping and the Order of Constituents. In: Bierwisch, M., Heidolph, K.E., (Eds.), Progress in Linguistics. Mouton, The Hague, pp.249-259.

Sag, I., Gazdar, G., Wasow, T., Weisler, S., 1985. Coordination and How to Distinguish Categories. Natural Language and Linguistic Theory 3, 117-171.

Schwarz, B., 1999. On the Syntax of *Either...or*. Natural Language and Linguistic Theory 17, 339-370.

Seuren, P.A.M., 1985. Discourse Semantics. Blackwell, Oxford.

Simons, M., 2001. Disjunction and alternatives. Linguistics and Philosophy 24:5, 597-619.

Taglicht, J., 1984. Message and Emphasis: On Focus and Scope in English. Longman, London.

von Stechow, A., 1991. Current Issues in the Theory of Focus. In: von Stechow, A., Wunderlich, D. (Eds.), Semantics. An International Handbook of Contemporary Research. de Gruyter, Berlin, pp. 804-825.

Vries, G. de, 1992. On Coordination and Ellipsis. PhD Dissertation, University of Tilburg.

Williams, E., 1997. Blocking and anaphora. Linguistic Inquiry 28, 577-628.

Winter, Y., 1998. Flexible Boolean Semantics: Coordination, Plurality and Scope in Natural Language. PhD Dissertation, University of Utrecht.

Zimmermann, T.E., 2000. Free choice disjunction and epistemic possibility. Natural Language Semantics 8, 255-290.

Zonneveld, R. van, 1992. X-bar Syntax and Coordination. In: Gilbers, D., Looyenga, S. (Eds.), Language and Cognition 2. University of Groningen, Groningen, pp.333-347.

Zwart, C.J.W., 1993. Dutch Syntax: A Minimalist Approach. PhD Dissertation, University of Groningen.