

# Focus, Topic, and Word Order: A Compositional View

Michael Wagner.  
Cornell University & McGill University

## Abstract

This paper looks at the cartographic approach to word order restrictions relating to focus and topic. The observed word order patterns are more flexible than is expected under the assumption of a totally ordered hierarchy of functional projections, suggesting that this standard assumption of the cartographic approach results in an all-too-Procrustean bed for syntactic typology. The observed patterns are as expected under a compositional view that tries to derive the observed word order patterns from the semantics of the focus operators involved. The evidence suggests that a cartography of natural languages has to take into account a broader range of syntactic configurations. A closer look at the compositional meaning of sentences can help understand existing constraints on word order variation.

**Keywords:** focus, topic, prosody, scope, compositionality

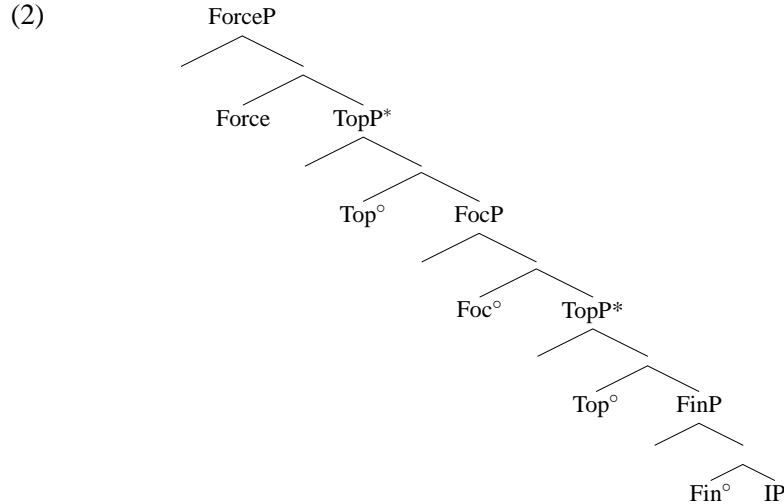
## 1 Constituent Order and Cartography

Rizzi (1997) explores the syntax of interrogative and relative pronouns, topics, and focused constituents. Three of the many incisive observations of this agenda-setting paper can be summarized as follows:

- (1) a. Interrogative and relative pronouns, topics, and focused constituents all occur in the left periphery of clauses.
- b. Their order relative to each other is fixed.
- c. They differ with respect to iterability: There can be only one focus or relative pronoun, but there can be multiple topics.

*To appear in: Jeroen van Craenenbroeck (Ed.): Alternatives to Cartography. Papers from the 2nd Brussels Colloquium on Generative Grammar.*

The proposed solution, henceforth called the *cartographic approach*, involves breaking up the earlier functional ‘CP’ projection into a sequence of functional projections:



This hierarchy plays a role in accounting for the three observations listed above in the following way:

- (3)
- a. Certain constituents occur in the left periphery because they move to the specifier of the relevant functional projection. These movements are induced by *criteria*: wh-criterion, focus-criterion, topic-criterion, ...
  - b. Their relative order is fixed because the functional sequence is ordered into a universal hierarchy.
  - c. Due to their interpretative properties topics but not foci can be nested recursively.

The core assumption of the cartographic perspective as it is outlined in Rizzi (1997) and Cinque (1999) is that the universal functional sequence is a totally ordered sequence of functional heads. What’s universal is their hierarchical order, but not every sentence may have every head in its functional spine in every language. Rizzi (1997) hypothesizes for example that focus and topic projections in the left periphery are activated only when needed, and whenever they are both present their relative order is fixed.

The cartographic approach to constituent ordering can be contrasted with what I want to call the *compositional approach*, which holds that the rela-

tive order of constituents follows from their semantics and the compositional interaction of the pieces involved in building up sentence meaning.

Up to a point, the two approaches are compatible. Once the meaning of the pieces has been identified, considerations of compositionality can provide substantive reasons for *why* the observed hierarchy is what it is. An example of such a rationalization of an observed generalization based on interpretative properties is exemplified by Rizzi (1997)'s account of why a sentence can have more than one topic but not more than one focus (3c).

We may, however, find ordering patterns that are incompatible with the assumption of a universally fixed total ordering. An example of ordering patterns that are paradoxical from the point of view of cartography but can be rationalized on semantic terms are those of certain adverbs in Norwegian and other languages discussed in Nilsen (2002), who proposes a polarity-based account as an alternative to a fixed hierarchy. Similarly, Van Craenenbroeck (2006) observes transitivity failures in the ordering of complementizers, *wh*-phrases, and topics in Venetian Italian which are incompatible with standard assumptions about what are possible triggers for movement in the cartographic approach.

This paper explores the grammar of overt and covert focus and topic operators. As already observed in Cinque (1999), the syntactic distribution of overt focus particles such as *only* and *even* poses a problem for a cartographic analysis. I will first discuss the issues that arise with these overt focus operators, and then argue that similar issues arise with unpronounced focus operators such as focus and topic. If the analogy is correct, this speaks against the view of postulating a fixed hierarchy of focus and topic projections in the left periphery as it was proposed in Rizzi (1997).

The more general point that can be made based on the data discussed is that some word order patterns found across languages might not fit into the rigid theory of a universally fixed total ordering. Furthermore, a better understanding of the interpretative properties of the operators involved and how they compose can provide the restrictive forces that constrain syntactic patterns without having to stipulate their hierarchical order. This is not incompatible with the essence of the cartographic project, which is to investigate cross-linguistic similarities in word-order patterns, and which has proven a very insightful project; but it may require changing some of the assumptions about what kinds of generalizations we should be looking for.

## 2 Focus and Givenness

### 2.1 Overt Focus Operators

The focus operator *only* takes two arguments, a focus constituent (marked by underlining), and a proposition in which focused constituents are replaced with variables, sometimes called the *presuppositional skeleton* (marked in (4) by  $\ulcorner$ hooks $\urcorner$ ):

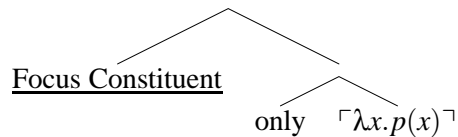
(4)  $\ulcorner$ Maria read only Moby Dick $\urcorner$ .

We can give *only* the following semantic entry (Wagner 2006a, adapting the analysis in Horn 1969; Fintel 1999, i.a.):

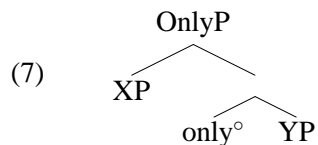
(5) Meaning of *only*  
 $\llbracket \text{only} \rrbracket = \lambda p_{\langle e,t \rangle} . \lambda f . \forall a \in C : p(a) \rightarrow (\wedge p(f) \rightarrow \wedge p(a))$   
 Presupposition:  $p(f)$  *Prejacent*

The compositional view sets out to explain the syntactic distribution of *only* by virtue of its semantic ‘needs.’ In particular, *only* as defined in (5) needs two arguments, and must be in the following configuration in order to be interpreted:

(6) *only* at LF



In other words, *only* takes the open property as its complement, and its focus must move to its specifier. While the compositional approach would hold that the syntactic configuration is a result of the semantic denotation of *only*, a cartographic approach could postulate a functional head for *only* somewhere along the functional spine, with a specifier (XP) and complement (YP), with similar consequences for the configuration at LF:



This is actually *not* the analysis proposed for *only* in cartographic work. E.g., Cinque (1999) notes that the syntax of focus particles is different and more complicated than such an analysis would predict.

As we will see, the reason for this is that focus operators occur in a second syntactic configuration in which they attach to the focus constituent (which could be of various kinds and sizes) and then take a propositional argument as their *second* argument—a configuration for which the cartographic approach does not provide any template. Focus operators like *only* and *even* appear to be able to occur in *both* configurations, suggesting a rather flexible syntactic patterning.

Even if (overtly pronounced) focus adverbs were excluded from a cartographic treatment by Cinque (1999) already, it is still worthwhile exploring them further in order to find out *why* they are not amenable to a cartographic treatment. These insights can then be used to evaluate whether the approach to unpronounced focus and topic operators that Rizzi (1997) proposes avoids these problems.

A first prediction of the compositional approach to *only* in (5) is that *only* should attach to predicates, which could be sentence-sized in the case in which an argument of a sentence is focused and abstracted over. In other words, it should be able to occur in the left periphery. There is indeed some evidence that in English, VP-*only* can attach to a sentence-sized node, and that even though, in the surface word-order, VP-*only* follows the subject and precedes the VP, the subject actually starts out below, and its surface position is just a surface quirk of syntax. There is a generalization about the associate of *only* in English which is that it must be c-commanded by *only*. But the subject of a sentence including VP-*only* can be contained in the focus of *only*, as was observed in McCawley (1970, 296). An illustration from Wagner (2006a):

- (8) They promised to stage Macbeth in its entirety. But then [Macbeth only gave his soliloquy.]<sup>7</sup> So the witches didn't give their dialog.

The position of *only* in the cartographic approach would not be predicted from its content but established empirically.

A prediction of both approaches is that, in cases where the associate of *only* is smaller than the entire sentence, this focus constituent should move to a position above the attachment site of *only*, in order to derive the correct configuration for interpreting *only*. Evidence for association by movement in English is discussed in Wagner (2006a). In languages such as Hungarian, this movement can happen overtly.

It seems, however, that there is variation as to which of the two arguments an operator takes first. This would not pose a problem to the compositional approach, but would be a conundrum for the fixed hierarchy approach. The syntax of VP-*only* seems compatible with a theory that posits a functional *only* projection as proposed above. The argument that semantically consists of an open property is the complement of the functional head, and the focus constituent moves to its specifier. However, not every sentence involving *only* fits this pattern, and there seems to be another construal for *only* in English:

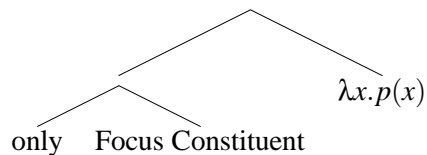
- (9) a.  $\lceil$ John only played baseball $\rceil$ .  
 b.  $\lceil$ John played only baseball $\rceil$ .

As discussed in Cinque (1999, 31), one obvious difference that sets DP-*only* apart from sentential adverbs such as *often* is that it can directly follow the verb:

- (10) \*He forgot often his name.

This can be taken as evidence that *only* forms a constituent with the DP that follows it.<sup>1</sup> In fact, there is evidence that [*only* + *focus constituent*] can move as a constituent, deriving the following configuration:

- (11) [ Only baseball [  $\lambda x$ . john played  $x$ . ] ]



Evidence for this kind of movement comes from the following ambiguity, observed by Taglicht (1984, 150):

- (12) They were advised to learn only Spanish.  
 a. They were advised not to learn any other language than Spanish.  
 b. They were not advised to learn any other language than Spanish.

One interpretation is that *only Spanish* undergoes covert movement. An alternative is that the surface structure actually is such that *only Spanish* attaches high and takes scope overtly, as in a rightward movement analysis, or in a Kaynian analysis involving movement to the left and subsequent remnant

movement (Kayne 1998). There is also an analysis using an unorthodox constituent structure, where as long as linear order is observed the syntactic parse can be re-bracketed on the surface, as in the categorial grammar analysis in Blaszcak and Gärtner (2005). Both overt and covert movement approaches correctly capture that the ambiguity disappears with VP-only:

- (13) They were advised to only  $\lceil$ learn Spanish $\rceil$ .
- a. They were advised not to learn any other language than Spanish.
  - b. \*They were not advised to learn any other language than Spanish.

So there are two ways to construct the same meaning using *only*. It is not clear how an analysis that treats *only* as a functional head can account for this flexibility. The syntactic pattern observed for DP-*only* is the reason that Cinque (1999) exempts focus-sensitive adverbs from the restrictions imposed by the functional hierarchy and proposes that they are ‘heads taking their modiftees as complements’ (p. 31).

This account remains moot, however, with respect to any structural restrictions on the occurrence of focus adverbs of this type, of which there are quite a number. If *only* can freely attach to its focus, then why is it that it is subject to more general restrictions on movement? Consider the following example:

- (14) She claimed that only her dad knows.
- a. ‘She claimed that her dad and no one else knows.’
  - b. \*‘The only claim she made is that her dad knows, but she did not claim that anyone else knows.’

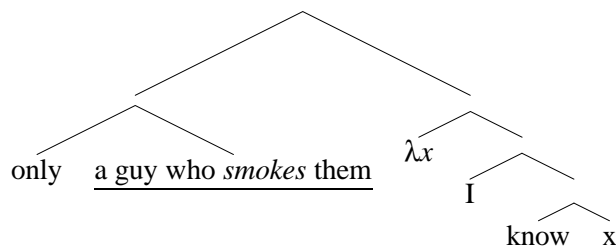
Also, at least for the case of English, this account is not quite sufficient, since it leaves open the question of why there is also the possibility of VP-*only*, which shows the kind of distributional pattern that the functional sequence *does* try to account for. Furthermore, from the semantic point of view, it is unclear which of the two arguments to call the ‘modiftee’ in the first place, so the characterization of the distribution of these adverbs leaves much to be desired. Ultimately, it seems a fundamental shortcoming of the treatment in Cinque (1999) to invoke different kinds of explanations for focus adverbs and other kinds of adverbs.

One difference between focus adverbs and other sentence adverbs such as *often* is that the former but not the latter take *two* arguments rather than one,

and this difference might account for the difference in syntactic construals. It seems that *only* can be pronounced attaching to either its first or second argument. The compositional approach might offer a solution for explaining the distribution of the two types of construals of focus adverbs such as *only*, since both configurations are compatible with the semantic needs of the operator. We could either stipulate an inherent ambiguity in the lexical entry of *only* with respect to which argument it has to combine first, or try to reduce one occurrence of *only* to the other by invoking syntactic movement.

Maybe even VP-*only* is in fact interpreted in the configuration in (11). Suppose association with *only* involves movement to the complement position of *only*, an idea discussed in Lee (2005) based on evidence from Korean and Wagner (2006a) for English. This movement analysis of focus association can be made compatible with the apparent island-insensitivity of focus association (Anderson 1972) by the claim that a constituent *containing* the focus can serve as the syntactic focus constituent (Drubig 1994; Krifka 1996; Wagner 2006a):

- (15) I don't know anyone who grows bananas,  
 ⌈I only know a guy who smokes them.⌋



Rather than invoking movement to complement position one could also postulate two different entries for *only*, differing in the order in which they combine with the two arguments. For more discussion of syntactic restrictions on the distribution of *only* see also Jacobs (1983), Bayer (1996) and Jaeger and Wagner (2003).

One conclusion that we can draw based on the observed distribution of *only* is that it does not lend itself easily to a cartographic analysis involving a fixed hierarchy. The compositional view, on the other hand, provides a rationalization of the distribution.<sup>2</sup>

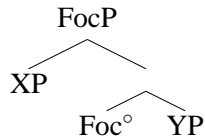
It is important to note that even in the compositional approach the particular syntactic configuration does not follow from the *overall* meaning, but

rather it follows from assumptions about how that meaning is carved up into pieces and the order in which the pieces take their arguments. Natural language often picks out one out of many conceivable ways of divvying up complex meaning, and in the case of *only* any approach might have to stipulate the order in which the two arguments are taken. If all languages use the same decomposition, then we should indeed expect to be able to fit all languages into some sort of universal template. However, languages might simply differ in how they carve up complex meanings, in which case we might not find a consistent syntactic pattern across languages.

## 2.2 Covert Focus Operators

Covert focus operators negotiate the encoding of focus and givenness in English and other languages. Rizzi (1997) postulates functional Focus and Topic projections with a concrete semantic import in ways that mirror the configuration observed in the case of *only* in (6). The Focus Projection marks its specifier XP as the focus and its complement YP as the presupposition:

(16) Focus Projection

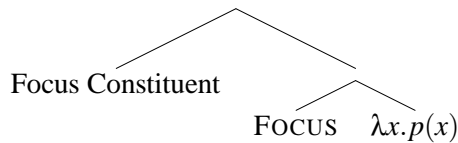


We can mimic the cartographic postulation of a functional focus projection by postulating the following unpronounced focus operator, in analogy to *only*. Note that the antecedent for focus marking does not to be a true proposition and be part of the context set  $C$ . In fact, it is neither sufficient nor necessary for the antecedent to be true. Rather, it must be salient in the discourse. I assume that there is a set  $\Delta$  which contains all constituents and entities salient in the discourse, and FOCUS introduces a presupposition about there being an antecedent in  $\Delta$  (for more discussion Wagner 2009).<sup>3</sup>

(17)  $\forall \sigma:$   
 $\llbracket \text{FOCUS} \rrbracket = \lambda p_{\langle \sigma, t \rangle}. \lambda x_{\sigma}. \exists a \in \text{ALT}(x) \cap \Delta : \wedge p(x) \not\wedge p(a). p(x)$

The LF-configuration for the interpretation of sentences involving an unpronounced focus operator would then appear as follows:

(18) FOCUS at LF



This two-place operator has the result that focus is interpreted in a configurational way, such that the second argument of the operator is the focus constituent and the first argument is the domain of the focus, not unlike the predictions of the functional projection in (16).

It might be impossible to test whether this operator has the same flexibility, attaching to either the first or the second argument leaving the meaning of the result constant, as we observed for *only*. Since the meaning would be identical, there is no way to tell unless we identify some phonological reflex of the focus operator on the constituent it attaches to.

However, the operator as formulated here may be too restrictive in another way. As we will see, this operator can be applied very flexibly. We can even swap which of two sisters plays the role of first or second argument of the operator. This is also possible with *only*, but in a much more restricted way since *only* operates on propositions. Still, one can attach *only* to the subject or the VP, leading to different truth conditions: *Bill only plays baseball*, vs. *Bill plays only baseball*. The FOCUS operator can apply to any node, taking either sister as its focused or given argument. This flexibility would be entirely unexpected if it was associated with a functional head in a fixed hierarchy.

An indication of the flexibility of this operator can be observed by looking at focus effects *within* a DP (cf. Rooth 1996), suggesting that maybe it need not always take a proposition-sized argument. I will henceforth mark accented words in small-caps, and prosodically subordinated material with underlining.

(19) A CANADIAN farmer met an AMERICAN farmer on the STREET.

This utterance could have wide focus or focus on *street*, and yet embedded within the DP there is an additional focus marking. So focus marking is even possible between sister constituents within DPs, or with respect to any other type of constituent. Moreover, one can swap what's given and what's focused, so at any given node either sister could be marked as given relative to the other. This reveals a flexibility that is unexpected if focus resides in a particular functional projection.

The additional flexibility of the focus operator can be captured by the following semantic entry for a covert focus-sensitive operator, which operates on constituents of any type:<sup>4</sup>

$$(20) \quad \forall \sigma, \forall \delta : \\ \llbracket \text{FOCUS} \rrbracket = \lambda x_{\sigma}. \lambda y_{\delta}. \exists [ay] \in (\Delta \cap \text{ALT}([xy])) : [ay] \neq [xy]. [xy]$$

This is a 2-place operator, and it introduces a presupposition that requires there to be a salient antecedent of a certain shape, just like the focus operator introduced in Rooth (1992). The only difference is that in this case it takes two arguments. Whenever this operator is used it takes two arguments, one constituent that is marked as given (which one could call the ‘background’ in Rizzi’s terminology), and one constituent that evokes alternatives, which we could call the ‘focus.’

The FOCUS operator has an effect on prosody: if the given constituent follows the focus, it is prosodically subordinated, which is at least reflected by a pitch-range reduction and can result in complete deaccenting (Wagner 2005). I will not discuss why FOCUS has this effect.

This operator predicts that it is not enough for a constituent to have been used before in order for it to be marked as given by FOCUS. In addition, there must be an alternative to the first argument, the focus, such that there is an antecedent involving that alternative. Conversely, it is not enough for a constituent to be focused; it must be focused relative to something else (although that something else can sometimes be elided). The intuition behind this can be brought out easily in the following type of example, a context in which the predicate *convertible* is given, and yet deaccenting it is dispreferred (Wagner 2006b):

- (21) A: Mary’s uncle, who produces high-end convertibles, is coming to her wedding. I wonder what he brought as a present.
- a. B: He brought a [CHEAP convertible].
  - b. #B: He brought [a RED convertible].
  - c. B: He brought [a red CONVERTIBLE ]

*Convertible* is destressed, but the stress that falls on *red* is ‘loaded,’ in that it invokes alternatives. *Red*, however, is not an alternative to *cheap*, as can be illustrated by other instances where *red* invokes alternatives:

- (22) *high-end* is not an alternative to *red*:  
Mary only likes RED convertibles.

Deaccenting *convertible* is only possible if there is a salient alternative  $Y'$  to the sister of *convertible* such that [ $y'$ *convertible*] is given in the context. Constituents are marked as given relative to another constituent: its sister.

This analysis is similar to the one proposed in Williams (1997) in that it holds that every instance of deaccentuation involves marking a constituent anaphoric and another constituent dis-anaphoric. Williams (1997, 599) concludes: “The lesson is that it is impossible to destress one thing without stressing another, and the stress that falls on the other is loaded, not empty.” It differs, however, from Williams’s proposal in requiring that the corresponding constituent in the antecedent must be a true alternative.

Sometimes, however, there does not seem to be any sister effect, and a constituent can be marked as given without a sense that alternatives for the sister constituent are evoked:

- (23) A: Smith walked into a store. What happened next?  
 a. #B: A detective arrested SMITH.  
 b. B: A detective ARRESTED Smith.

Here it seems that the presupposition of FOCUS is too strong, since no alternative to *arrested* is necessarily invoked. That direct objects can be marked as *given* even with sentence-wide focus was already observed in Halliday (1967) and Ladd (1980).

Some earlier accounts have interpreted these observations as evidence that apart from focus effects, there is a second and separate phenomenon of anaphoric destressing (Neeleman and Reinhart 1998; Reinhart 2006), which applies only to certain types of arguments, such as DPs. Similarly, Selkirk (1995) proposed a focus projection mechanism that provided different conditions on givenness and focus. But not all given DPs can actually be marked as given that freely. Consider the following observation:

- (24) A: Smith was suspected to have been involved in the burglary. Do you know what happened in the end?  
 a. B: I’m not sure. The thing i heard is they were going to arrest JONES or SMITH.  
 b. ??B: ..to arrest Jones OR Smith.  
 c. #B: ...to arrest JONES or Smith.

Marking *Smith* as given in a coordinate structure introduces a presupposition stronger than just that there is an antecedent for *Smith* in the context, in fact, it introduces precisely the presupposition of FOCUS. Consider a case where

it can destress:

- (25) A: Did they arrest only Smith?  
 B: No, they arrested Jones AND Smith. (given constituent: *only Smith*)

Or consider the following example. Sentence (26) requires a contrasting individual for *John*, such that the entire constituent *x or Smith* is given:

- (26) A: They want to arrest Lee or Smith?  
 B: No, they want to arrest JONES or Smith. (Constituent given in context: *Lee or Smith*)

Why is it that in these cases a DP cannot be destressed just by virtue of referring to a discourse-given entity when they occur in a coordinate structure? The solution proposed by Wagner (2005) is that *Smith* is not actually the sister of the predicate. The structure based on which givenness is evaluated is rather the following:

- (27) [ FOCUS([  $\lambda x$ . [ The police arrested x. ] ]) Smith ]

This movement changes the sister relations and consequently weakens the presupposition introduced by FOCUS. Marking *Smith* as given relative to the lambda-abstracted proposition invokes the presupposition that there is an alternative open property that applies to Smith that is salient. This is precisely the weak presupposition that destressing a direct object intuitively encodes. Movement in the present example facilitates givenness marking: givenness marking in situ would not have been possible, since the presupposition introduced would have been too strong. And this movement is impossible out of the coordinate structure in (24) due to the coordinate structure constraint.

The important lesson is that the presupposition introduced depends on where the operator attaches. It may be possible to postulate a flurry of focus positions at various points within DPs and CPs and account for the facts, but I think such an approach would miss the intrinsically relational nature of focus and givenness marking that the data suggests. Moving a constituent changes the sister relations, and as a consequence it changes the presupposition introduced by marking a constituent as given or focused.

This relational approach makes interesting predictions for focus- and givenness movement that differ from the ones expected in a cartographic approach. Movement changes the syntactic configuration, and thus changes what can be marked as given relative to which other constituent. We observed that the

moved constituent can be marked as given relative to the remnant, and the focus presupposition can thus be weakened.

(28) FOCUS([  $\lambda x$ . [ The police ARRESTED  $x$ . ] ]) Smith

Suppose that the moved constituent can either be the first or second argument of FOCUS, in other words, that the moved constituent can either be the one that is marked as given or the one that its sister is marked as given relative to, as proposed in Wagner (2005). Consider for the example what would happen if we attached the FOCUS-operator to the moved constituent rather than the remnant:

(29) [ $\lambda x$ . [ The police arrested  $x$ . ] ] FOCUS(SMITH).

The predicted presupposition of (29) is: There is an alternative  $y$  to *Smith* such that *The police arrested  $x$*  is given in the context. A context in which this presupposition is fulfilled is the following:

(30) A: Who did the police arrest?  
B: The police arrested SMITH.

In other words, we can use the same givenness operator to analyze cases of givenness marking and cases of ‘narrow focus.’ There may be some evidence that such restructuring and focus marking is indeed possible even in surface structure. Rooth (2005, cf.) notes the following contrast:

(31) a. A: What did Mary eat? B: I think Mary ate | the APPLE.  
b. A: What did Mary do? #? B: I think Mary ate | the APPLE.

According to Rooth (2005), it is possible to separate the direct object from the verb by a break, arguably a reflex of overt restructuring along the lines of (29), but only if the strong presupposition encoded by marking the entire remnant constituent as given, as in (b). It is not sufficient that *Mary* constitutes given information, as in (a).

The same pattern holds for overt focus movement to the left in German, providing more evidence that focus/givenness movement is indeed restricted in the way that would be expected based on the presupposition encoded by FOCUS:<sup>5</sup>

(32) a. A: What did Mary eat?  
B: Ich glaube den APFEL hat Maria gegessen.  
I think the apple has Maria eaten

- I think Mary ate the apple.
- b. A: What did Mary do?  
?# B: Ich glaube den APFEL hat Maria gegessen.  
I think the apple has Maria eaten

Moving the constituent *the apple* and subsequently marking the sister constituent as given results in the presupposition that there is an alternative *x* to *Apfel* such that Maria has eaten *x*. Alternatives of this sort are made available by the question in (32a) but not by the one in (32b), which does not include the predicate *eat*.

Of course, in German, just as in English, it is also possible to move the constituent *the apple* and to mark it as given relative to the remnant. This is a case of givenness-related scrambling, which is in fact very common in German:<sup>6</sup>

- (33) A: What about the apple?  
B: Ich glaube den APFEL hat Maria GEGESSEN.  
I think the apple has Maria eaten

The compositional theory can thus rationalize givenness and focus movement: it adjusts the presuppositions encoded by marking one constituent given relative to its sister. This view of the interaction of movement and focus marking is intrinsically flexible: it is sister constituents that are marked as given relative to each other, and movement adjusts the syntactic relations of constituents.<sup>7</sup>

The cartographic view, on the other hand, fixes the syntactic configuration of focus marking by stipulating several focus projections in the spine of functional projections. This approach does not do justice to the relational nature of information structuring observed in the data discussed here.

### 3 Recursive Nesting of Focus Operators

A sentence can include more than one focus operator. In such situations, the two operators can take either scope with respect to each other. This presents a problem for the view that certain focus operators occupy a fixed position in a hierarchy. Again, first I will first illustrate the point with overt focus operators, and then extend the discussion to unpronounced operators.

### 3.1 Nesting of Overt Operators

Two overt focus operators can occur in the same sentence (Krifka 1992). I will use the focus operator *even* in addition to *only* to illustrate the point:

- (34) Even John read Moby Dick.
- a. Asserted: John read Moby Dick.
  - b. Conventional Implicature of *even* (Karttunen and Peters 1979, 25/26): There are other *x* under consideration besides John such that *x* read Moby Dick and for all *x* under consideration besides John, the likelihood of *x* reading Moby Dick is greater than or equal to the likelihood of John reading Moby Dick.

Here's an example from (Wagner in press) with both focus operators in one sentence (I'm using underlining here to mark the focus of the operators):

- (35) **even** > **only**: Except for Bill, the kids in this summer camp have no respect for animals and the potential dangers, which makes them take too many risks, including with poisonous snakes.
- a. Even the most poisonous snake only frightens Bill.
  - b. Even the most poisonous snake frightens only Bill.

In this example, *even* outscopes *only*. The alternative propositions computed for *even* must include *only*, since otherwise the probabilities would not line up in the right way. *Only Bill* must be part of every alternative considered. It is clearly *more* likely that a more poisonous snake frightens Bill, but it is *less* likely that it would frighten *only* Bill:

- (36)
- a. least likely: The most poisonous snake frightens only Bill.
  - b. more likely: Average poisonous snakes frighten only Bill.
  - c. even more likely: Mildly poisonous snakes frighten only Bill.

The representation of the sentence at LF looks as follows:

- (37)  $\lambda P_1.$  even ([the most poisonous snake])( $P_1$ ) ([ $\lambda x.$ ( only (Bill) ( $\lambda y.$  x frightens y))]).

In (35), word order matches the scope. The word order, however, can also be reversed:

- (38) **even** > **only**: Except for Bill, the kids in this summer camp have no respect for animals and the potential dangers, which makes them

take too many risks, including with poisonous snakes.

- a. Only Bill is afraid of even the most poisonous snake.
- b. #Only Bill is even afraid of the most poisonous snake.

When the focus operator attaches to the focus constituent, wide scope is possible. The analysis involves moving the focus operator together with the DP, i.e., *even the most poisonous snake*, to take the right scope. The fact that (38b) is bad constitutes evidence that movement is indeed involved. It is impossible to move *even* in (38b) such that it can outscope *only*.

What's puzzling about these data is that there is compelling evidence that there is an NPI version of *even* with a reversed presupposition requiring lowest probability (Rullmann 1997). So why is movement necessary here? I think the reason may be that the NPI-version of *even* is not licensed by *only*, similar to other strong NPIs such as *in weeks* or the punctual reading of *until* (Zwarts 1998; Gajewski 2005). Compare the following example with (38b):

- (39) No one is even afraid of the most poisonous snake.

Negation happily licenses the NPI-version of *even* and the sentence becomes acceptable. Note that if this was in fact the standard version of *even*, movement would be necessary here to yield the right truth condition, but that should be ruled out for the same reasons as in (38b).

While the examples so far require that *even* outscope *only*, which in cartographic terms could be achieved by positing an *even* projection outscoping an *only* projection, the inverse scope is also possible. Consider the following context:

- (40) **Context II: only > even:** The kids in the summer camp are afraid of snakes to some degree, but it depends on how dangerous they are. Everyone is afraid of rattlesnakes, since they're really poisonous, but almost everyone is ok with some less poisonous snake.
- a. Only Bill is afraid of even the least poisonous snake.
  - b. Only Bill is even afraid of the least poisonous snake.

In this context, *only* must outscope *even* for the probabilities to come out right. Once again, the reverse linear order is also possible, at least for some of my informants:

- (41) **Context II: only > even**  
? Even the least poisonous snake would frighten only Bill.

# Even the least poisonous snake would only frighten Bill.

The reason these data raise a problem if one were to analyze it in cartographic terms is the following: suppose that there was an *even* and an *only* projection, then one should be higher in the hierarchy than the other. The fact that two different scopes are possible would have to be resolved by postulating multiple *only* and *even* projections, analogous to the multiple projections for topic and focus in (2) based on the observation that they can have different hierarchical arrangements. This is a possible but not very insightful move, and again does not do justice to the compositional and relational nature of the facts.

The compositional view on the other hand can account for the data by virtue of the fact that adding one operator leads to an expression that is compatible with adding the other, and it is simply the syntactic scope that the two operators take with respect to each other that will decide on the ultimate truth conditions. This is not unlike the explanation in Rizzi (1997) for the iterability of topics, but in fact it does away with the need to postulate a place for either *even* or *only* in the functional hierarchy.

Once again, we saw evidence that the syntax of overt focus operators such as *only* and *even* cannot be accounted for by the functional sequence—but that does not come as a surprise. As discussed before, it was already acknowledged in Cinque (1999) that focus operators are different. The compositional view might provide a better grip on the word order patterns observed for this class of adverb. It turns out, however, that an analogous kind of argument can be made for nested covert focus operators, in particular for the kind of topic-focus constructions that Rizzi (1997) discusses.

### 3.2 Nested Covert Focus Operators

The notion of topic discussed in Rizzi (1997) and referred to in the functional hierarchy in (2) seems to be that of what is usually called a ‘contrastive topic.’ This becomes evident in the examples used as an illustration of topics, (e.g., Rizzi 1997, 285):

(42) Your book, you should give t to Paul (not to Bill).

The contrastive topic, *your book*, invokes alternatives, and constituents that generally do not allow for the invocation of alternatives are prohibited:

(43) ?\*It, you should give t to Paul.

Büring (1997, 2003) observes that both the contrastive topic (CT) and the focus (FOC) of the sentence invoke alternatives. An example of a contrastive topic is the following:<sup>8</sup>

- (44) A: What did you buy on 59th street?  
B: On /FIFTYNINTH Street\, I bought the SHOES\ .

The answer in this dialog addresses the question under discussion, and the constituent *shoes* constitutes the focus. In addition to answering the question under discussion, this utterance also invokes a set of alternative questions about what the addressee bought at other locations. Invoking a set of alternative questions is a typical use of contrastive topics. Interestingly, in English the contrastive topic can also *follow* the focus:

- (45) A: What did you buy on 59th street?  
B: I bought the SHOES on /FiftyNINTH Street\.

The analysis in Büring (1997, 2003) consists of marking one constituent as a contrastive topic using the diacritic *CT* and the other as a focus using *FOC*. A non-compositional two-step process then creates a topic-semantic value for the expression. The prediction is that there should be no ordering restrictions between contrastive topic and focus.

Wagner (in press), however, argues that there is a simpler, compositional way of accounting for contrastive topics, which does not involve positing two different features CT and FOC. The idea is that contrastive topics simply involve a recursive nesting of two focus operators, similar to the nesting of overt focus operators discussed in the previous section. The constituent that associates with the focus operator taking wider scope is what we call a contrastive topic. Compositional views of contrastive topics similar in spirit were discussed in Williams (1997); Van Hoof (2003); Sauerland (2005). I will not discuss the various parallels and differences between the analyses here.

The basic idea put forward in Wagner (in press) is that a sentence involving a contrastive topic involves the same syntactic configuration as the one involved in a sentence containing both *only* and *even*: two focus operators each takes a focus constituent as its complement that then takes scope relative to the other. If this parallel is correct, then rather than deriving the syntactic distribution of topic and focus based on the functional sequence, we can simply derive it from the compositional structure. A semantic analysis of contrastive topic in those compositional terms is presented in Wagner (in press).

Suppose that contrastive topics are really just the associates of focus operators taking wide scope over another focus operator. Then we expect them to have an identical syntactic distribution to parallel cases with overt focus operators. We already saw that inverse scope between focus operators in English is possible, so it is no surprise that contrastive topic and focus can occur in either word order. But I would now like to turn to Italian, where we will see that (i) scope between focus particles is fixed at surface structure, and (ii) contrastive topics must precede foci. This is exactly as expected if covert focus particles are syntactically construed just like overt focus particles.

Rizzi (1997, 289/290) observes that contrastive topics differ from foci in various ways. They are left-dislocated, and precede foci in general. Another difference, already noted in Cinque (1990, 14, 56ff), is that contrastive topics can and sometimes must involve resumptive clitics while left-dislocated foci cannot. A clitic is obligatory in the case of direct objects:

- (46) a. *Il tuo libro, lo ho comprato.*  
           the your book, it have.I bought  
           ‘Your book, I bought.’  
       b. \**Il tuo libro, ho comprato.*  
           the your book, have.I bought

Using a resumptive clitic in the case of foci, however, is reported to be impossible:

- (47) a. \**IL TUO LIBRO lo ho comprato (non il suo).*  
           the your book it have.I bought (not the his)  
       b. *IL TUO LIBRO ho comprato (non is suo).*  
           the your book have.I bought (not the his)  
           ‘I bought your book, not his.’

This observation was used as evidence that contrastive topics and foci are substantively different. Within the cartographic approach, one involves movement to a topic projection and one involves movement to a focus projection, two different and hierarchically ordered projections in the functional spine.

Under the compositional view, however, contrastive topics involve focus operators that simply outscope a lower focus operator. We would expect then that the clitic data reported here would generalize to examples with overt focus operators. This is indeed correct. If the direct object associates with a focus operator that outscopes a focus operator associating with a higher argument, e.g., the subject, then clitic-left-dislocation is obligatory:<sup>9</sup>

- (48) There is a petting zoo, and for some reason they put some poisonous snakes in there, but people didn't really want to pet them. In fact, most of the snakes were not petted at all, except for one: the least poisonous snake. And even that got petted by only one visitor. So:
- a. \*Soltanto uno dei visitatori (lo) ha toccato anche il meno  
 only one of.the visitors (it) has touched even the least  
 velenoso dei serpenti.  
 poisonous of.the snakes  
 'Only one of the visitors touched even the least poisonous snakes.'
  - b. Anche il meno velenoso dei serpenti, \*(lo) ha toccato  
 even the least poisonous of.the snakes it has touched  
 soltanto uno dei visitatori.  
 only one of.the visitors  
 'Only one of the visitors touched even the least poisonous snakes.'

The reason for the linear order of constituents lies in their relative semantic scope, rather than in an inherently specified position in a fixed hierarchy. In Italian, but not in English, the relative order between them is fixed, and inverse scope is not possible.

Arguments other than direct objects show similar restrictions with respect to linear order, but behave differently with respect to clitics. The surface word order must reflect the scope of the focus operators. The examples corresponding to the English ones discussed above in the context that motivates the reading in which *only* outscopes *even* are as follows:

- (49) only > even
- a. Solo Paolo ha paura anche dei serpenti meno velenosi.  
 only Paolo has fear even of.the snakes least poisonous
  - b. \*Anche il serpente meno velenoso fa paura solo a Paolo.  
 even the snakes least poisonous make fear only to Paolo

If the intended meaning with *only* outscoping *even* is to be expressed using the predicate *fa paura* 'make fear' in (49b), the only way is to use a left-dislocated construction:

- (50) only > even
- Solo a Paolo anche il serpente meno velenoso (gli) fa paura.  
 only to Paolo even the snakes least poisonous make fear

If we switch to the context that motivates the reading in which *even* outscopes *only*, the judgments go exactly the other way, and only the sentence in which is the basic word order reflects the scope is grammatical:

- (51) even > only
- a. \*Solo Paolo ha paura anche dei serpenti piu' velenosi.  
only Paolo has fear even of.the snakes most poisonous
  - b. Anche il serpente piu' velenoso fa paura solo a Paolo.  
even the snakes most poisonous make fear only to Paolo

If the verb *ha paura* 'has fear' is to be used, again the only way is to get the right scope is by left dislocation:

- (52) even > only
- Anche dei serpenti piu' velenosi, solo Paolo ha paura.  
even of.the snakes most poisonous, only Paolo has fear

The interesting difference between Italian and English is that overt focus operator take surface scope in Italian but not in English. We also saw that contrastive topics in English can either precede or follow the focus of a sentence. If overt and covert focus operators behave alike, we would then expect that the order between topics and foci is also fixed in Italian. This is indeed correct:

- (53) A: Cosa hai comprato sulla cinquantanovesima strada?  
what have.2nd bought on-the 59th street?  
'What did you buy on 59th street?'
- B: Sulla cinquantanovesima strada ho comprato le scarpe.  
on-the 59th street have.1st bought the shoes.
- E sulla cinquantaduesima strada ho comprato la giacca.  
And on-the 52th street have.1st bought the jacket.
- 'On 59th street, I bought the shoes. And on 52nd street I bought the new jacket.'

Inverting the two focus constituents is dispreferred in this context:

- (54) A: Cosa hai comprato sulla cinquantanovesima strada?  
what have.2nd bought on-the 59th street?  
'What did you buy on 59th street?'

B: ?? Le scarpe, lo ho comprato sulla  
the shoes them have.1st bought on-the  
cinquantanovesima strada. E la giacca, la ho comprato  
59th street. And the jacket it have.1st bought  
sulla cinquantaduesima strada.  
on-the 52th street

'I bought the shoes on 59th street. And I bought the new jacket on  
52nd Street.'

This is converging evidence that overt and covert focus operators behave alike, and since the former are not amenable to a cartographic analysis, the same reasoning applies to covert ones.

### 3.3 Why is there a Clitic in Topicalization but not in Focus?

Focus Operators in Italian take overt scope. In order to get a focus operator to take scope over a preceding argument, left-dislocation is necessary to change the word order. In the case of direct objects, the left-dislocated constituent must be resumed by a clitic. But why would it be that clitic resumption is necessary?

The reason might be related to a restriction noted in Calabrese (1984), and discussed, more recently, in Stoyanova (2008). Pair-list wh-questions are not grammatical in Italian. Pair-list-questions could be analyzed as questions involving two nested focus operators, each associating with a wh-word. Perhaps in Italian, there is a general constraint against having more than one focus operator within a clausal domain:

- (55) Focus constraint on Italian:  
Each clause can contain only one focus operator.

If this is correct, and if contrastive topics involve nesting focus operators, then contrastive topics as we know them from English should actually be impossible in Italian. However, we might be able to add a focus/topic to a clause that already contains one if we add it *outside of that clause*. Take an analogous construction in English:

- (56) a. As for John, Mary really likes him.  
b. \*As for John, Mary really likes.

*as for* introduces a topic, but it's clearly not part of the main clause itself, but

seems to attach higher, perhaps taking a speech act as its argument. Similar to CLLD in Italian, we have to resume the direct object with a pronoun. The reason the pronoun is obligatory is because it's an obligatory argument. Consider:

(57) As for Monday, we'll go shopping (then).

If a left-dislocated constituent in Italian is indeed construed with an *as for*-like construction, this can explain various of the peculiar properties of CLLD. First of all, we expect obligatory clitics for all obligatory arguments (except the subject, since Italian is a pro-drop language).

But other peculiarities can be explained as well. Rizzi (1997, 290-291) and Cinque (1990, 57-60) observe, for example, that certain constituents that Rizzi (1997) calls 'bare quantificational elements like *nessuno* 'no one' and *tutto* 'tutto' cannot function as contrastive topics but can function as foci. But more generally, these elements cannot be pronominalized:

- (58) a. A: You saw no one?  
       \*B: Si, lo ho visto.  
           Yes, it have.I seen.  
       b. A: You did everything?  
       ?? B: Si, lo ho fatto.  
           yes, it have.I done

The example in (58b) can only be used when 'lo' refers to an entire set of actions that are salient in the context. This is the same condition that allows for topicalization of *everything* (Cinque 1990).

Negative quantifiers are also unacceptable in *as for* clauses, which also require a referential expression in order to be able to link up to the main clause:

(59) \*As for no one, I don't like him.

Finally, the presented analysis can account for the difference in weak cross-over between focus movement and CLLD (Rizzi 1997).

- (60) a. Gianni<sub>i</sub>, sua<sub>i</sub> madre lo<sub>i</sub> ha sempre apprezzato.  
       Gianni, his mother him has always appreciated  
       b. ??Gianni<sub>i</sub>, sua<sub>i</sub> madre ha sempre apprezzato.  
       Gianni his mother has always appreciated

The difference is simply that *Gianni* and *sua madre* are within the same do-

main in (b) but not in (a). Compare parallel cases in English:

- (61) a. As for Jim<sub>i</sub>, his<sub>i</sub> mother always appreciated him<sub>i</sub>.  
b. \*It's Jim<sub>i</sub> that his<sub>i</sub> mother always appreciated.

The compositional analysis also sheds light on the question why it appears as if there can be more than one topic but only one focus. It's simply because there is only one focus operator in a clause, and that's what we call the focus. All higher ones must resort to a strategy that adds them outside of the main clause, but that can be done iteratively stacking more than one.

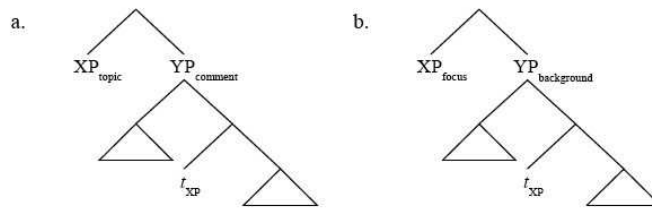
#### **4 Another Alternative: The Templatic Approach**

Neeleman and van de Koot (2007) discuss the relative order between focus and topic, and, similar argument in this paper, they present evidence that word order is more flexible than expected under the cartographic account of Rizzi (1997). The alternative explanation for the observed flexibility and also several restrictions proposed in Neeleman and van de Koot (2007) involves the postulation of so-called 'discourse templates' that are used to evaluate the well-formedness of certain syntactic configurations. I will henceforth call this the 'templatic approach.' The main difference from the functional hierarchy proposed in Rizzi (1997)—also a kind of discourse template—is that focus and topic can occur in multiple configurations, and only certain ones are ruled out. It can thus be characterized as a version of the cartographic approach with a more flexible hierarchy compared to the strict total ordering underlying the proposal in Rizzi (1997).

In the following I will look at the particular discourse templates proposed in Neeleman and van de Koot (2007) and argue that they are based on incorrect assumptions about the actual distribution of topic and focus. A caveat should be made. The discussion here will only address aspects of Neeleman and van de Koot (2007) concerning the relative order of topic and focus; it does not address the substantial part of the paper on the linear order of discourse given constituents. It will hence not do justice to the full range of arguments put forward for the templatic approach in this work.

Discourse templates have the effect that certain parts of the syntactic structure are mapped to either background or comment:

- (62) Discourse Templates



The treatment of focus is similar to Rizzi (1997)'s proposal that the complement of focus projections is part of the background of an utterance; it shares with the compositional approach in Wagner (2005) in that it is generally the sister of the constituent that evokes alternatives that is taken to be part of the background, i.e., part of an antecedent in the discourse. While in the templatic and cartographic approach this is stipulated for the template or functional sequence respectively, in the compositional approach this is a result of the semantic denotation of the 2-place focus operator.

The templatic approach is also similar to the compositional approach in Wagner (2005) in that the size of the background can be adjusted flexibly by moving the alternatives-invoking constituent more or less high in the phrase marker, which is not the case in the cartographic approach, where that position is fixed by the functional sequence.

Once again, it is important to point out that, similar to the cartographic approach based on the functional sequence, the templatic approach is not *in principle* incompatible with a compositional semantic analysis. However, the actual proposal in Neeleman and van de Koot (2007) does not provide such a compositional theory, and in fact crucially assumes a non-compositional treatment of contrastive topics since focus and topic can stand in very different syntactic relations with no interpretive effect. One main prediction of the templatic approach is summarized in Neeleman and van de Koot (2007) as follows:

- (63) Predictions of the Templatic Approach  
 “The full range of predictions, then, is as follows. As long as we are dealing with in-situ topics and foci, their relative order is free. However, things are different when movement comes into play. While a topic can move across a focused constituent (whether in situ or not), a focused constituent cannot move across a topic (whether in situ or not).”

The starting point for this characterization of focus/topic distribution is the

observation by Jackendoff (1972, 261) that contrastive topics can either precede or follow a focus in English, as discussed above:

- (64) a. Contrastive Topic  $\prec$  Focus:  
 A: Well, what about Fred, what did he eat?  
 B: /FRED\ate the BEANS.
- b. Focus  $\prec$  Topic:  
 A: What about the beans? Who ate them?  
 B: FRED ate the /BEANS\.

In the discourse-templatic approach, the contrastive topic can be analyzed here as being generated in situ, so this is just as expected. However, we saw above that languages that do not allow focus operators to take inverse scope cannot actually have contrastive topics following a focus. In fact, Dutch, the language Neeleman and van de Koot (2007) mostly focus on, patterns with Italian in this regard: in contrast to English, in Dutch it is impossible for contrastive topics to be ‘base-generated’ below foci and pronounced after them.

As before, the context that we can use to control what’s the topic and what’s the focus is the one that Büring (1997) calls contrastive aboutness-topics. These are utterances that answer the question under discussion but in addition evoke a set of alternative questions. It turns out that in this kind of context, it is impossible in Dutch to let an accented constituent that evokes the alternatives for the topic set *follow* the focus of the question:

- (65) A: Wat heb je gekocht op de Nieuwstraat?  
 what have you bought on the Nieuwstraat?
- a. B: Op de NIEUWSTRAAT heb ik SCHOENEN gekocht.  
 on the Nieuwstraat have I shoes bought.
- b. #B: Ik heb scshape schoenen op de NIEUWSTRAAT gekocht.  
 i have shoes on the Nieuwstraat bought

The only way to pronounce (65b) such that it is felicitous is to *deaccent Nieuwstraat*, in which case it is marked as given and is no longer acting as a contrastive topic.

The templatic approach thus fails to explain why topics must precede foci in Dutch but not in English.<sup>10</sup>

The compositional approach explains the observed restriction straightforwardly: contrastive topics are constituents that associate with a focus operator that takes wide scope over another focus operator. Dutch belongs to the class

of languages in which LF-movement of a focus operator plus its focus constituent is impossible, hence the word order restriction. The reason why a focus cannot move across a contrastive topic on the compositional view is simply that this would lead to the wrong interpretation, since it would mean that the ‘focus’ takes wide scope and ends up being the contrastive topic.

There are a number of restrictions that Neeleman and van de Koot (2007) attribute to templatic restrictions that might receive a more insightful explanation in the compositional approach. For example, it seems to be impossible to move a constituent [*only x*] across another focus:

- (66) A: Wie lezen er heden ten dage eigenlijk nog dichters?  
 a. B: Piet leest veel dichters, maar ik geloof dat FRED alleen  
 Piet reads many poets, but I believe that Fred only  
Bloem leest.  
 Bloem reads  
 ‘Piet reads many poets, but I believe that Fred reads only Bloem.’  
 b. \*B: Piet leest veel dichters, maar ik geloof dat  
 Piet reads many poets, but I believe that only  
 alleen Bloem FRED leest.  
 Bloem Fred reads

Under the compositional view, the focus operator attaching to *alleen Bloem* would take scope over the one attached to *Fred*, which would result in a reading in which *alleen Bloem* as a whole is a contrastive topic. However, as observed by Rizzi (1997), contrastive topics do not like to be ‘non-referential,’ and elements such as negative quantifiers are ruled out as contrastive topics. Clear topic contexts also reject constituents such as *only x*, including constructions that do not involve any movement at all:

- (67) \*As for only Bloem, Fred reads him.

Thus the compositional view also provides an explanation for this kind of restriction on word order, and in fact one that is linked to independently motivated restrictions on contrastive topics.

## 5 Conclusion

This paper looked at the cartographic approach to word order restrictions relating to focus and topic, and compared it with an alternative compositional approach that tries to derive certain word order restrictions from the way the

individual pieces are assembled to derive complex meaning. The observed word order patterns were argued to be incompatible with the strong assumption of a totally ordered universal functional spine, but were as expected under the compositional view.

What can we learn from the case of focus particles about the cartographic project? One important point that was also raised in the insightful discussion after Peter Svenonius's talk at the cartography conference in Brussels is that it is not possible to derive word order from the *overall meaning* of a sentence, since the tools of semantics offer all sorts of ways to decompose complex meaning into separate pieces. So even if we embrace a more compositional approach, we have to first find out in what particular way languages break down complex meaning. The construction of expressions with identical truth conditions might be fundamentally different across languages, depending on their particular decomposition of meaning into pieces. This means that the very rigid expectation of an universal template for all languages such as the functional sequence may form an all-too-Procrustean bed for syntactic structure. Ultimately, however, this insight should simply lead to a more refined and semantically more informed set of questions compared with the ones already under investigation in the cartographic approach. The project of mapping out the composition of sentence structure across languages remains essential.

#### **Acknowledgements:**

Thanks to the audience at BCGL and to Jeroen van Craenenbroeck, Gisbert Fanselow, Jon Gajewski, Hotze Rullman and two very insightful reviewers for helpful comments.

#### **Notes**

- 1 Buring and Hartmann (2001) argue that at least in German, apparent DP-*only* in fact attaches to C. This analysis has not, however, been extended to English, and I think there is reason to be skeptical also for the case of German.
- 2 A puzzle for the compositional view should be noted, however. The syntactic distribution of *only* and *even* differs in subtle ways, and it is not clear whether these differences can be reduced to their semantics. Jackendoff (1972, 251) observes that *even* but not *only* can associate with the subject across an intervening auxiliary (example adapted):

(i.) a. John will even  $\lceil$ have given his daughter a new

- bicycle<sup>↑</sup>.  
 b. \*John will only <sup>↑</sup>have given his daughter a new  
 bicycle<sup>↑</sup>.

- 3 Note that the notion of alternative set ALT still needs to be defined. See Wagner (2005) for discussion and Wagner (2009) for a formal definition.  
 4 Cf. the ‘relative givenness’ operator in (Wagner 2006b). To make it more parallel to the entry of other focus operators such as *only*, the operator here takes the alternative-evoking argument first.  
 5 The example here contrasts with the case of a matrix clause, where fronting the direct object to the first position and deaccenting the rest is perfectly acceptable (Fanselow and Lenertová 2006, and references therein):

- (i.) A: What did Maria do?  
 B: DEN APFEL hat Maria gegessen.  
 the apple has Maria eaten  
 ‘She ate the apple.’

I think the movement here adds a speech-act oriented exclamative meaning to this sentence. Alternatively, one can also insert an expletive here and deaccent the entire sentence, again with an exclamative impact, albeit a slightly different one:

- (ii.) A: What did Maria do?  
 B: MANN hat die einen Apfel gegessen.  
 man has she an apple eaten  
 ‘Boy, what an apple she ate.’

Adding such an exclamative force and hence triggering this movement seems possible only in matrix clauses, however. For example, adding the expletive to the first position is out of the question in an embedded clause unless it’s a quote—which would be odd under a propositional attitude verb like *believe*:

- (iii.)\* Peter glaubt MANN hat die einen Apfel gegessen.  
 Peter believes man has she an apple eaten

- 6 Scrambled given constituents can but need not be deaccented, in fact they’re often not deaccented when placed in first position. It is only when

- the constituent marked as given occurs to the *right* of its sister (or some other constituent that it can become prosodically dependent on) that it must be deaccented (Wagner 2005).
- 7 This also raises many questions, as a reviewer points out: if (32a) and (33) are really flip sides of the same type of givenness marking, then why do the two movements appear to differ in their syntactic properties? This would require a discussion that goes beyond the scope of this paper.
- 8 Notation: Accented elements are in capitals, some diacritics: fall: \ ; rise: /; fall-rise: ∨.
- 9 A reviewer suggested that Spanish shows the same pattern, but if one of the two focus operators is not overt, the facts are different:

- (ii.) There is a girl that only John visited. After discussing who that girl is and going back and forth about it possibly being Mary, the speaker, a bit impatiently, says:

A MARÍA ha visitado sólo JUAN.  
to Maria has visited only Juan

'Only Juan visited MARY', or 'It is MARY that only Juan visited.'

A difference between overt and covert focus particles would be unexpected here. Since I didn't test the nested focus data in Spanish and know little about the parallels and differences between Italian and Spanish CLLD I'm not sure how to address this issue.

- 10 At least in base-generated order. See Wagner (in press) for some discussion of cases where in German in non-base generated orders both word orders are possible, although the order is fixed in the base-generated order. The reason might be that the derived word order allows for reconstruction.

## References

- Anderson, Stephen R.  
1972 How to get 'even'. *Language*, 48(4): 893–906.
- Bayer, Josef  
1996 *Directionality and Logical Form: On the scope of focusing particles and wh-in-situ*. Kluwer, Dordrecht.
- Blaszczak, Joanna and Hand-Martin Gärtner  
2005 Intonational phrasing and the scope of negation. *Syntax*, 7: 1–22.

- Büring, Daniel  
1997 *59th Street Bridge Accent On the Meaning of Topic & Focus*. Routledge, London.
- Büring, D.  
2003 On D-trees, beans, and B-accent. *Linguistics and Philosophy*, 26(5): 511–545.
- Büring, Daniel and Katharina Hartmann  
2001 The syntax and semantics of focus-sensitive particles in German. *Natural Language and Linguistic Theory*, 19: 229–281.
- Calabrese, Andrea  
1984 Multiple questions and focus in Italian. In W. de Geest and Y. Putseys, (eds.), *Sentential complementation: Proceedings of the International Conference Held at UFSAL*, pp. 67–74.
- Cinque, Guglielmo  
1990 *Types of A'-Dependencies*. MIT Press, Cambridge, Ma.
- Cinque, Guglielmo  
1999 *Adverbs and functional heads: A cross-linguistic perspective*. Oxford University Press, Oxford.
- Drubig, Hans Bernhard  
1994 Island constraints and the syntactic nature of focus and association with focus. In *Arbeitspapiere des Sonderforschungsbereichs 340: Sprachtheoretische Grundlagen der Computerlinguistik*, volume 51. Sonderforschungsbereich 430, Tübingen/Stuttgart.
- Fanselow, Gisbert and Denisa Lenertová  
2006 Left peripheral focus: Mismatches between syntax and information structure. Ms., Universities of Potsdam and Leipzig.
- Gajewski, Jon R.  
2005 *Neg-Raising: Polarity and Presupposition*. Ph.D. thesis, MIT.
- Halliday, M.A.K.  
1967 Notes on transitivity and theme in English, part 2. *Journal of Linguistics*, 3: 199–244.
- Horn, Laurence R.  
1969 A presuppositional analysis of *only* and *even*. In Robert I. Binnick, Alice Davison, Georgia Green, and Jerry Morgan, (eds.), *Papers from the 5th annual meeting of the Chicago Linguistic Society*, volume 4. Chicago Linguistic Society, Chicago.

- Jackendoff, Ray S.  
1972 *Semantic Interpretation in Generative Grammar*. MIT Press, Cambridge, Ma.
- Jacobs, Joachim  
1983 *Fokus und Skalen. Zur Syntax und Semantik der Gradpartikel im Deutschen*. Niemeyer, Tübingen.
- Jaeger, Florian and Michael Wagner  
2003 Association with focus and linear order in German. Ms., Stanford University. [semanticsarchive.net/Archive/DVkNDY4M](http://semanticsarchive.net/Archive/DVkNDY4M).
- Karttunen, Lauri and Stanley Peters  
1979 Conventional implicature. In D.A. Dinneen and C.-K. Oh, (eds.), *Syntax and Semantics 11: Presupposition*, pp. 1–56. Academic Press, New York.
- Kayne, Richard S.  
1998 Overt vs. covert movement. *Syntax*, 2: 128–191.
- Krifka, Manfred  
1992 A compositional semantics for multiple focus constructions. In Joachim Jacobs, (ed.), *Informationsstruktur und Grammatik*, volume Sonderheft 4 of *Linguistische Berichte*, pp. 17–53. Westdeutscher Verlag, Opladen.  
1996 Frameworks for the representation of focus. In Geert-Jan M. Kruijff, Richard T. Oehrle, and Glyn Morrill, (eds.), *Formal Grammar Conference. Proceedings of the Conference on Formal Grammar at the 9th European Summer School in Logic, Language, and information*, pp. 99–112. Folli, Prague.
- Ladd, D. Robert  
1980 *The Structure of Intonational Meaning*. Indiana University Press, Bloomington.
- Lappin, Shalom, (ed.)  
1996 *The Handbook of Contemporary Semantic Theory*. Blackwell, London.
- Lee, Youngjoo  
2005 Exhaustivity as agreement: The case of Korean *man* ‘only’. *Natural Language Semantics*, 13: 169–200.
- McCawley, James D.  
1970 English as a VSO language. *Language*, 46(2): 286–299.

- Neeleman, Ad and Tania Reinhart  
1998 Scrambling and the PF-interface. In Miriam Butt and Wilhelm Geuder, (eds.), *The projection of arguments*, pp. 309–353. CSLI.
- Neeleman, Ad and Hans van de Koot  
2007 The nature of discourse templates. Ms. UCL.
- Nilsen, Øystein  
2002 *Eliminating Positions*. Ph.D. thesis, University of Utrecht.
- Reinhart, Tanya  
2006 *Interface Strategies*. MIT Press, Cambridge, Ma.
- Rizzi, Luigi  
1997 The fine structure of the left periphery. In Liliane Haegeman, (ed.), *Elements of Grammar*. Kluwer.
- Rooth, Mats  
1992 A theory of focus interpretation. *Natural Language Semantics*, 1: 75–116.  
1996 Focus. In Lappin (1996), pp. 271–297.  
2005 Topic accents on quantifiers. Ms., Cornell University.
- Rullmann, Hotze  
1997 Even, polarity, and scope. *Papers in Experimental and Theoretical Linguistics*, 4: 40–64.
- Sauerland, Uli  
2005 Contrastive topic: A reductionist approach. Ms. ZAS Berlin.
- Selkirk, Elizabeth O.  
1995 Sentence prosody: Intonation, stress, and phrasing. In John A. Goldsmith, (ed.), *Handbook of Phonological Theory*, pp. 550–569. Blackwell, London.
- Stoyanova, Marina  
2008 *Unique Focus. Languages without multiple wh-questions*. John Benjamins.
- Taglicht, Josef  
1984 *Message and Emphasis. On focus and scope in English*, volume 15 of *English Language Series*. Longman, London and New York.
- Van Craenenbroeck, J.  
2006 Transitivity failures in the left periphery and foot-driven movement operations. *Linguistics in the Netherlands*, 23(1): 52–64.

Van Hoof, Hanneke

- 2003 The rise in the rise-fall contour: does it evoke a contrastive topic or a contrastive focus? *Analogy, Levelling, Markedness: Principles of Change in Phonology and Morphology*, 41(3): 515–563.

von Stechow, Kai

- 1999 NPI licensing, Strawson entailment, and context dependency. *Journal of Semantics*, 16: 97–148.

Wagner, Michael

- 2005 *Prosody and Recursion*. Ph.D. thesis, MIT.
- 2006a Association by movement. Evidence from NPI-licensing. *Natural Language Semantics*, 14(4): 297–324.
- 2006b Givenness and locality. In Masayuki Gibson and Jonathan Howell, (eds.), *Proceedings of SALT XVI*, pp. 295–312. CLC Publications, Ithaca, NY.
- 2009 Relatively given, relatively focused. Ms. Cornell University/McGill University.
- in press A compositional analysis of contrastive topics. In Muhammad Abdurrahman, Anisa Schardl, and Martin Walkow, (eds.), *Proceedings of NELS 38*, volume 2, pp. 415–428.

Williams, Edwin

- 1997 Blocking and anaphora. *Linguistic Inquiry*, 28: 577–628.

Zwarts, Frans

- 1998 Three types of polarity. In Fritz Hamm and Erhard Hinrichs, (eds.), *Plural Quantification*, pp. 177–238. Kluwer, Dordrecht.