

# A syntactic typology of topic, focus and contrast<sup>\*</sup>

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## 1. Introduction

As is well-known, topics and foci may undergo A'-movement. This paper is concerned with the question what this fact can tell us about the typology of information-structural notions and their mapping to the syntax. We argue that the data support the following four-way typology:

(1)

	Topic	Focus
Non-contrastive	aboutness topic [topic]	new information focus [focus]
Contrastive	contrastive topic [topic,contrast]	contrastive focus [focus, contrast]

What the table in (1) expresses is that topic and focus are basic notions in information structure that can be enriched to yield a contrastive interpretation. In other words, a contrastive topic and a contrastive focus are an aboutness topic and a new information focus interpreted contrastively. We are not the first to make a suggestion along these lines; related ideas can be found in Vallduví and Vilkkuna 1998, Molnár 2002, McCoy 2003, and Giusti 2006.

The strongest evidence for the typology in (1) comes from the syntactic distribution of constituents with different information-structural functions. On the assumption that contrastiveness, topic and focus are privative features (as indicated in the table), we expect to find rules that mention [topic] and therefore generalize over aboutness topics and contrastive topics, rules that mention [focus] and therefore generalize over new information focus and contrastive focus, and rules that mention [contrast] and therefore generalize over contrastive topic and contrastive focus. We do not expect to find rules that generalize over aboutness topics and new information foci, over contrastive topics and new information foci, or over aboutness topics and contrastive foci. None of these pairs share a feature.

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The import of these predictions of course depends on what we mean by notions like ‘focus’, ‘topic’ and ‘contrast’. We take ‘focus’ to be the information highlighted in a proposition. For example, in the answer to a WH-question, the constituent that corresponds to the WH-expression is a focus. The rest of the sentence functions as the background to this focus; that is, the focus is highlighted with respect to this material (throughout we use small capitals to mark foci):

- (2) a. What did Rutger buy?  
b. Rutger bought A GUN.

We follow Reinhart (1981) in assuming that topics should be defined in terms of aboutness (the linguistic relevance of aboutness is motivated by several phenomena, including anaphora resolution). On Reinhart’s definition, a topic is the entity that the utterance is about. Thus, while ‘focus’ is notion operative at the level of propositions, ‘topic’ is primarily a discourse notion (see Tomioka 2007b for recent discussion). This is not to say that there may not be syntactic constituents that identify the topic. In fact, it is these linguistic topics that we are concerned with in this paper.

Linguistic topics should be distinguished from expressions contained in the utterance that merely index the current topic of discourse (see Lambrecht 1994 for extensive discussion)<sup>1</sup>. We can illustrate the distinction using the following discourse (throughout we use double underlining to mark topics):

- (3) a. Maxine was introduced to the queen on her birthday.  
b. She was wearing a special dress for the occasion.

In (3a), *Maxine* is a linguistic topic: it introduces a new topic of discourse. The initial comment made about Maxine is that she was introduced to the queen on her birthday. The pronoun *her* in this comment is not a linguistic topic, but a category that indexes the topic. We take the same to be true of the continuation of the discourse in (3b), which is what one might call an ‘all-comment’ sentence, linked to the topic *Maxine* through the pronoun *she* (see Vallduví 1992, Lambrecht 1994, and Vallduví and Engdahl 1996 for discussion). Backgrounds differ from comments in this respect: as focus is a notion associated with propositions, there is no such thing as an all-background sentence.

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<sup>1</sup> Our notion of (linguistic) topic corresponds to what Lambrecht calls ‘reference-oriented topic expressions’, while our notion of indexing elements corresponds to his ‘role-oriented topic expressions’.

The final notion we rely on is that of contrast. Constituents that are contrastive are understood to belong to a contextually given set out of which they are selected to the exclusion of at least some other members of the set. Both topics and foci can be interpreted contrastively. In English, contrastive topics and foci are marked by a special intonation. Contrastive foci typically carry what Jackendoff 1972 calls an A-accent: a plain high tone (H\*), often followed by a default low tone (see Büring 2003 and references mentioned there). Contrastive topics carry a B-accent, maximally realized as L+H\* followed by a default low tone and a high boundary tone (L H%). We will not indicate A- and B-accents in examples, but all constituents marked as contrastive topic or focus are taken to carry these accents in languages that distinguish them (like Dutch). Further tests that identify contrastive topics and contrastive foci will be introduced as we proceed. (Throughout we use italics to mark contrast.)

- (4) a. Rutger bought *A GUN*.  
 b. *Maxine* was introduced to the queen on her birthday.

On the appropriate intonational contours, (4a) conveys that Rutger bought a gun and not certain other relevant items, while (4b) highlights that the speaker knows that Maxine was introduced to the queen on her birthday, but could not make the same statement about other relevant individuals. (This could be because the speaker lacks knowledge about these other individuals or because he or she knows that a similar statement about them would not be true.)

On these definitions of topic, focus and contrast, the kind of rules excluded by the table in (1) are indeed not attested. In this paper we will demonstrate that the three types of rules that we expect to find do indeed exist. Before we turn to the discussion of individual languages, let us highlight one generalization. As is well-known, the foot of an A'-chain is interpreted as a variable. Consequently, elements that undergo A'-movement must have quantificational properties. This is true of contrastive topics and foci; as explained above, [contrast] involves selection from a set (see Rizzi 1997 and Kiss 1998 for related discussion). This is not true, however, of new information foci and aboutness topics. The latter can therefore not undergo A'-movement. Throughout this paper, we will encounter evidence confirming this generalization.

In section 2 we show Dutch A'-scrambling targets constituents with a contrastive interpretation. This does not mean, however, that these fronted categories behave like a natural class in *all* respects: where their distribution differs, this can be attributed to their interpretation as topic or

focus. In section 3, we show that in Japanese both aboutness topics and contrastive topics must appear in the left periphery of the clause, a requirement that sets them apart from other constituents. Again, this does not imply that they behave alike in all respects: contrastive topics undergo A'-movement, while aboutness topics bind a (zero) resumptive pronoun. In section 4, we show that in Russian new information foci and contrastive foci have the same underlying position. The presence or absence of contrastiveness, however, gives rise to very different surface syntax, as contrastive foci must undergo A'-movement. Finally, in section 5, we explore the implications of our proposal for the architecture of the clause.

## 2. Dutch A'-scrambling

There is general agreement that, in Germanic and beyond, there are two types of scrambling. A-scrambling feeds and bleeds binding and secondary predication, does not give rise to weak crossover effects, is clause-bounded, and does not give rise to scope-reconstruction. We cannot illustrate all these properties here, but for relevant discussion, see Vanden Wyngaerd 1989, Mahajan 1990, Zwart 1993, Neeleman 1994, and Neeleman and Van de Koot 2007. In contrast, A'-scrambling does not affect binding or secondary predication, gives rise to weak crossover effects, is not clause-bounded, and reconstructs (obligatorily) for scope. Again, we will not demonstrate these properties here, but refer the reader to Neeleman 1994, Jacobs 1997, Haider and Rosengren 1998, and Neeleman and Van de Koot 2007 for discussion.

In Dutch, the language we will concentrate on in this section, the two types of scrambling can be easily told apart, because only A'-scrambling can alter the basic order of arguments (subject – indirect object – direct object).<sup>2</sup> A-scrambling is restricted to the reordering of arguments and adjuncts (see Zwart 1993, and references cited there).<sup>3</sup> The two types of scrambling are also associated with different interpretive effects. A-scrambling operations typically mark the scrambled DP as discourse-anaphoric; see Reinhart 1995, Neeleman and Reinhart 1998, and Choi 1999, among others, for discussion. A'-fronting operations typically require the moved DP to be interpreted as either a contrastive focus (as in (5a)) or a contrastive topic (as in (5b); see Neeleman 1994 and Frey 2001). DPs that

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<sup>2</sup> Note that A'-scrambling can also affect categories other than DPs, including adverbials.

<sup>3</sup> Some speakers of Dutch marginally allow A-scrambling of a direct object across an indirect object, a possibility more generally available in German. The judgments reported here are from speakers who reject such scrambling.

are not interpreted contrastively cannot be scrambled across arguments, even if they are topic or focus.

- (5) a. Ik geloof dat [alleen *DIT* boek] Jan Marie *t* gegeven heeft.  
*I believe that only this book John Mary given has*  
 ‘I believe that John has given only this book to Mary.’  
 b. Ik geloof dat [*zo'n boek*] alleen *JAN* Marie *t* gegeven heeft.  
*I believe that such-a book only John Mary given has*  
 ‘I believe that only John has given such a book to Mary.’

One might conjecture that A'-scrambling is licensed by a mapping rule that assigns a moved constituent an interpretation as contrastive. The drawback of this suggestion is that constituents that remain in situ can also be interpreted in this way, so that it is difficult to see what effect the movement could have on the displaced category. This being so, we explore the possibility that A'-scrambling does not affect the interpretation of the moved category itself, but rather that of the constituent to which it adjoins.

In earlier work (Neeleman and Van de Koot 2007), we argued that movement of a contrastive focus marks the sister of the landing site as the background to this focus, while movement of a contrastive topic marks the sister of the landing site as the associated comment. Although we think this work was on the right track, some modifications are in order. The reason for this is that the partitioning of a proposition into focus and background is commonly taken to be exhaustive, as is the partitioning of an utterance into topic and comment. Therefore, if these movements mark a comment or a background they should uniformly target a position in the left periphery of the clause. This is not what we actually find: both topic and focus movement can land in positions preceded by other material.

- (6) a. Ik geloof dat Jan [alleen *DIT* boek] Marie *t* gegeven heeft.  
*I believe that John only this book Mary given has*  
 ‘I believe that John has given Mary only this book’  
 b. Ik geloof dat Jan [*zo'n boek*] alleen *MARIE t* gegeven heeft.  
*I believe that John such-a book only Mary given has*  
 ‘I believe that John has given such a book only to Mary.’

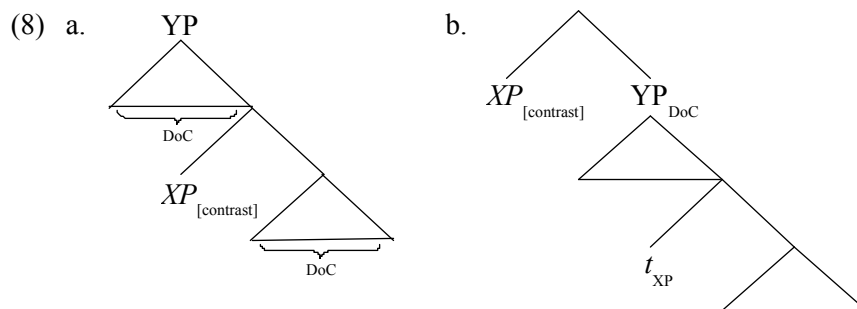
In fact, A'-scrambling can target a variety of positions. Irrespective of whether the moving phrase is a topic or a focus, it can land in a position between the subject and the indirect object, as in (6), a position between the complementizer and the subject, as in (5), or the first position in main clauses, as in (7). Further landing sites are available in structures containing

adverbs, as these are (usually) freely ordered with respect to moved topics and foci.

- (7) a. [Alleen *DIT* boek] zou Jan Marie *t* geven.  
*only this book would John Mary give*  
 ‘John would give Mary only this book.’  
 b. [*Zo’n boek*] zou alleen *JAN* Marie *t* geven.  
*such-a book would only John Mary give*  
 ‘Only John would give Mary such a book.’

What our earlier proposal was trying to express is that movement of a contrastive topic or focus marks that material in the comment or background that is used in calculating the contrast (the statement made about the contrasted category to the exclusion of alternatives). We will call this material the domain of contrast (DoC). As we will demonstrate, the partitioning of a sentence into a contrast and a domain of contrast need *not* be exhaustive and therefore marking a domain of contrast by movement is informative.

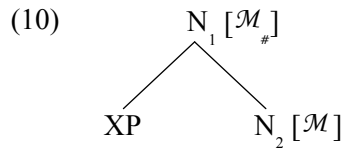
The idea, then, is the following. If a contrastive topic or focus remains in situ, the domain of contrast need not be a constituent, as indicated in (8a). Therefore, in interpreting the sentence, the hearer must construe an appropriate domain of contrast based on contextual clues. This is different if the contrastive constituent in (8a) moves out of YP, so that an otherwise discontinuous domain of contrast is turned into a constituent, as shown in (8b).



So movements of contrastive topics and foci do not mark the discourse functions of these elements themselves, nor their comment or background, but rather their domain of contrast; that is, the material relevant to calculating the set of alternatives on which the contrast operates (see Wagner 2005 for related ideas). This is expressed by the mapping rule in

(9). The structure in (10), to which (9) refers, contains the diacritic  $\mathcal{M}$  that we have used in previous work to encode A'-movement (on a par with the slash notation in HPSG):

- (9) *DoC Marking*  
 If XP in (10) is interpreted contrastively, then interpret  $N_2$  as the domain of contrastiveness.



The proposal summarized in (9) and (10) entails that the examples in (5) and (6) differ as to whether or not the embedded subject is included in the domain of contrast.

An immediate question that this proposal raises is how domains of contrast can apparently be of different semantic types (a proposition with a single  $\lambda$ -bound variable in (5) and a constituent with a  $\lambda$ -bound variable and an open slot for the subject in (6)). We assume, following Schwarzschild 1999 and others, that a contrast is always based on an expression containing a single  $\lambda$ -bound variable. This expression is used in information structure to generate the set of alternatives from which the contrastive constituent is chosen. If so, there must be an information-structural procedure of existential closure that transforms the domain of contrast in (6) into an expression of the right type. The interpretation of the existentially bound variable is then provided by the context (it must be as specific as the context allows). Thus, the contrast in (5a) is based on the expression  $\lambda x$  [John has given Mary  $x$ ], while the contrast in (6a) is based on  $\lambda x \exists y$  [ $y$  has given Mary  $x$ ]. If  $y$  is interpreted as ‘people’, then (5a) and (6a) differ in the set of alternatives from which the contrastive focus is selected, namely the set of things that John would give Mary versus the set of things that people would give Mary.

In order to see the effects of variation in DoC marking, it is not sufficient to look at isolated examples like (5) and (6); we need to consider example sentences in context. We will do so now, concentrating on structures with a moved contrastive topic. The position in which a contrastive topic can land will be shown to be sensitive to manipulation of contextual information relevant for calculating the set of alternatives from which the topic is selected. Very similar observations can be made about moved foci, but space does not permit us to illustrate this here.

Let us begin by considering the example in (11). Discourse coherence in these examples requires that we know that John is a student, which (in principle) allows us to extract information about him from the sentences in (11a) and (11b). (In this respect, (11) is comparable to cases like *John was drunk last night; but then you would expect a student to drink a lot.*) The leading sentence for these examples sets up a context that favours an interpretation of the direct object as a contrastive topic. This is because the question is about *een bromtol* ‘a humming top’, while the answer provides information about *een didgeridoo* ‘a didgeridoo’. The constituent used to shift the topic of discourse is, by definition, a contrastive topic (see Büring 1997, 2003, and references mentioned there).

- (11) Aan wie zou Jan een BROMTOL gegeven? Nou, dat weet ik niet, maar ik geloof ...  
 ‘To whom would John give a humming top? Well, I don’t know, but I believe ...’
- a. dat een student [*een didgeridoo*] [alleen EEN NEEFJE t zou  
     *that a student a didgeridoo only a cousin would*  
     geven].  
     give
- b. #dat [*een didgeridoo*] [een student alleen EEN NEEFJE t zou  
     *that a didgeridoo a student only a cousin would*  
     geven].  
     give  
     ‘that a student would give a didgeridoo only to a cousin.’

In (11a), the domain of contrast marked by topic movement contains a variable, which by the procedure outlined above must undergo existential closure, giving rise to  $\lambda x \exists y$  [*y would give x only to a cousin*]. If we take John to instantiate the existentially bound variable, the contrast will be based on the set of things that John would give only to a cousin, which fits the discourse perfectly. These information-structural operations are compatible with the semantics of the sentence, as we know that John is a student.

In (11b), the domain of contrast *does* include the subject *een student* ‘a student’, which implies that the contrast will be based on the open proposition  $\lambda x$  [*a student would give x only to a cousin*]. But this undermines the coherence of the discourse, even if we know that John is a student, because the extra material included in the domain of contrast leads to an unlicensed widening of the set of alternatives on which the contrast is



based, from the strange presents that John would give only to a cousin to the strange presents that a student would give only to a cousin.

If our account of the deviance of (11b) is on the right track, we predict that moving across the subject would be acceptable in a context in which it does not lead to a widening of the set of alternatives. That is, if the context is already about the strange presents that students give to members of their family, it should not matter whether the topic moves across the subject or lands in a lower position. The sentence in (12a) is coherent because, after existential closure,  $y$  in the enriched domain of contrast  $\lambda x \exists y$  [ $y$  would give  $x$  only to a cousin] can be interpreted as a student. (12b) is also coherent because the contrast is based on the domain of contrast  $\lambda x$  [a student would give  $x$  only to a cousin].

(12) Aan wie zou een student een BROMTOL gegeven? Nou, dat weet ik niet, maar ik geloof ...

‘To whom would a student give a humming top? Well, I don’t know, but I believe ...’

- a. dat een student [een didgeridoo] [alleen EEN NEEFJE  $t$  zou  
that a student a didgeridoo only a cousin would  
geven]  
give
- b. dat [een didgeridoo] [een student alleen EEN NEEFJE  $t$  zou  
that a didgeridoo a student only a cousin would  
geven]  
give  
‘that a student would give a didgeridoo only to a cousin.’

In the well-formed examples we have considered, the constituent marked as the domain of contrast contains a focus. This is not unexpected: the context invites a pairing of strange presents and family members and obviously the choice of the family member (the focus) is highly relevant to the choice of present (the topic). In fact, our proposal predicts that a contrastive focus cannot be excluded from the domain of contrast for a moved topic. We use the examples in (13) to explain why this should be the case.

The leading sentence in (13) sets up a context in which we are discussing the strange things that different groups of people ask their friends for. The short topic movement in (13a) marks a domain of contrast that is enriched to  $\lambda x \exists y$  [ $y$  would not dare ask anybody for  $x$ ]. Since the interpretation of  $y$  must be based on the immediate context, we are forced to interpret the existentially bound variable as ‘working youths’. In other words, the contrast is based on a set of strange presents that a working

youth would not dare ask anybody for. But these information-structural effects are incompatible with the actual semantics of the sentence, which states that a student would not ask anyone for a didgeridoo.

(13) Wie zouden werkende jongeren om een BROMTOL vragen? Nou, dat weet ik niet, maar ik geloof ...

‘Who would working youths ask for a humming top? Well, I don’t know, but I believe ...’

a. #dat *EEN STUDENT* [ om *een didgeridoo* [ niemand *t* zou  
that a student for a didgeridoo nobody would  
durven vragen]  
dare ask

b. dat [ om *een didgeridoo* ] [ *EEN STUDENT* niemand *t* zou  
that for a didgeridoo a student nobody would  
durven vragen]  
dare ask

‘that a student would not dare ask anyone for a didgeridoo.’

No such problem arises if the contrastive focus is included in the domain of contrast. In that case the contrast is based on the open proposition  $\lambda x$  [a student would not dare ask anybody for  $x$ ], which fits the context naturally.

There is a further set of predictions that can be derived from our proposal. Recall that the domain of contrastiveness for a focus consists of material chosen from the background, while the domain of contrastiveness for a topic consists of material chosen from the comment. This implies that DoC marking does not only identify material on which a contrast is based, but also implies that this material is to be construed as belonging to the background or the comment, depending on the interpretation of the contrastive constituent. This is not unimportant, because the information-structural status of backgrounds and comments differs. As we have already suggested, the topic-comment partitioning applies to an utterance, while the focus-background partitioning applies to a proposition. Consequently it is possible to embed a focus in a comment (as in (14a)), but it is not possible to embed a topic in a background (as in (14b)). (For relevant discussion, see Prince 1981, Reinhart 1981, 1995, 2006, Vallduví 1992, Lambrecht 1994, and Hajičová et al. 1998.)

- (14) a. topic [<sub>COMMENT</sub> FOCUS [<sub>BACKGROUND</sub> ... ]]  
b. \*FOCUS [<sub>BACKGROUND</sub> topic [<sub>COMMENT</sub> ... ]]

We should emphasize that (14a,b) are information structures, and not syntactic configurations. Given that the mapping between syntax and information structure need not be isomorphic, the ban on the embedding of a topic-comment structure in a background will not directly restrict syntactic structure. For instance, it does not follow from (14b) that topics cannot be preceded by foci. Any impact of information-structural constraints on word order in Dutch must result from the application of DoC marking. If no movement takes place, no material is marked as belonging to a background or a comment, and hence the syntax does not impose any restrictions on the mapping to information structure. However, we expect that the effects of (14b) will be felt if focus movement takes place. The material contained in the domain of contrast marked by movement of a focus must be part of its background. Since by (14b) a background cannot contain a topic, it is predicted that focus movement out of a constituent containing a topic will be impossible.

In other words, what we expect is that the placement of in situ topics and foci is free. However, while a topic can move out of a constituent containing a focus (whether in situ or not), a focus cannot move out of a constituent containing a topic (whether in situ or not).

In order to demonstrate that these predictions are borne out, we must sharpen our criteria for classifying a constituent as topic or focus. As pointed out earlier, contrastive foci are associated with an A-accent and contrastive topics with a B-accent. In addition, there are contextual criteria. It is well known that in the answer to a WH-question, the constituent that corresponds to the WH-operator is (usually) a focus. If it is interpreted contrastively, it qualifies as a contrastive focus. By this criterion, *de bonen* ‘the beans’ in (15a,b) is a contrastive focus. As we have already seen, a context that favours an interpretation of a constituent as contrastive topic is one in which the hearer answers a question that differs in that constituent from the one being asked. This allows us to classify *Wim* in (15a,b) as a contrastive topic (the original question mentioning *Fred*).<sup>4</sup>

What the data in (15) show, then, is that an in-situ focus may follow a topic, but cannot move across it.<sup>5,6</sup>

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<sup>4</sup> The judgments given here and below are based on a pronunciation of the examples in which the constituent marked as focus carries a plain high tone, and the constituent marked as topic carries a tune consisting of a high tone, a low tone and a high boundary tone (this intonation of Dutch topics is in line with the observations reported in Van Hoof 2003). As far as we can judge these matters, this pronunciation is very similar to what is found in English.

<sup>5</sup> As was pointed out to us by Michael Wagner (p.c.), the context in (15) and comparable ones below do not force the interpretations indicated, but merely

- (15) Hoe zit het met *FRED*? Wat heeft *HIJ* gegeten?  
 ‘What about Fred? What did he eat?’  
 Nou, dat weet ik niet, maar ik geloof  
 ‘Well, I don’t know, but I believe’
- a. dat *Wim* van de *BONEN* meer gegeten heeft dan vorig jaar.  
*that Bill from the beans more eaten has than last year*  
 ‘that Bill has eaten more from the beans than last year.’
  - b. #dat [van de *BONEN*] *Wim* *t* meer gegeten heeft dan vorig jaar.  
*that from the beans Bill more eaten has than last year*

There is a further test that can be used to corroborate the classification of topics and foci: negative quantifiers can function as foci, but not as topics

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favour them. All the contexts we use are based on implicit multiple WH-questions. In (15), this question is *Who ate what?*, while in (18) below, it is *What was eaten by whom?* Answers to multiple WH-questions tend to be constructed in such a way as to line up the topic with the fronted WH-phrase and the focus with the in situ WH-phrase. Thus, *Who ate what?* is most commonly answered by something like *John ate the BEANS*, *Mary ate the CHEESE*, etc. However, when there is reason to do so, it is also possible to swap the topic and focus functions, yielding answers like *JOHN ate the beans*, *MARY ate the cheese*, etc. (see Roberts 1996 and Büring 2003). Given that the contexts we use presuppose implicit multiple WH-questions, the possibility of a topic-focus swap also presents itself. Hence, in evaluating our empirical claims, one should not just rely on the effects of context, but also consider other indicators of topic- and focusness.

<sup>6</sup> Notice that overt topic movement cannot be used to rescue structures in which a topic is contained in the background of a moved focus. We speculate that this is because “repair by movement” would violate Relativized Minimality: focus movement creates an A’-position that blocks association of the topic with its trace. If so, comparable structures in which a topic is linked to a pronoun should be acceptable. Indeed, there is a sharp contrast between (i) and (ii). Moreover, topic fronting across a moved focus is widely attested in languages that have clitic doubling (such as Italian) or allow radical pro drop (such as Japanese).

- (i) \**Marie* heeft *DIT* boek Jan *t* zeker *t* niet gegeven.  
*Mary has this book John certainly not given.*
- (ii) Wat *Marie* betreft, *DIT* boek heeft Jan haar zeker *t* niet gegeven.  
*What Mary regards, this book has John her certainly not given.*  
 ‘As for Mary, John has certainly not given her this book.’

For related discussion, see Rochemont 1989, Culicover 1991, Browning 1996, among others.

(for obvious semantic reasons). This is corroborated by the fact that they cannot appear in the English *as for* construction, which marks topics:

(16) #As for no boy, I like him.

Therefore, if in the relevant context a constituent can be replaced by a negative quantifier, it cannot be a topic. Indeed, when *Wim* in (15a) is replaced by *niemand* ‘nobody’, the result is decidedly odd, as shown in (17a).<sup>7</sup> (The hearer is left to wonder which person is referred to as ‘nobody’.) However, the variant of (15b) in (17b), in which *de bonen* ‘the beans’ has been replaced by *nergens* ‘nothing’, is perfectly natural.

- (17) a. #dat niemand van de *BONEN* meer gegeten heeft dan vorig jaar.  
           *that nobody from the beans more eaten has than last year*  
           ‘that nobody has eaten more from the beans than last year.’  
       b. dat Wim *NERGENS* van meer gegeten heeft dan vorig jaar  
           *that Bill nothing of more eaten has than last year*  
           ‘that Bill has not eaten more from anything than last year.’

The data in (18) show that, by contrast, an in-situ topic may follow an in-situ focus or move across it. This observation is corroborated by the fact that in neither (18a) nor (18b) ‘the beans’ can be replaced by a negative quantifier (see (19)), whereas replacing ‘Bill’ by ‘nobody’ is unproblematic in both of these examples (see (20)). The results of this test are consistent with a classification of ‘the beans’ as topic and of ‘Bill’ as focus.

- (18) Hoe zit het met de *SOEP*? Wie heeft *DIE* gegeten?  
       ‘What about the soup? Who ate that?’  
       Nou, dat weet ik niet, maar ik geloof ...  
       ‘Well, I don’t know, but I believe ...’  
       a. dat *WIM* van de bonen meer gegeten heeft dan vorig jaar.  
           *that Bill from the beans more eaten has than last year*  
       b. dat [ van de bonen] *WIM* t meer gegeten heeft dan vorig jaar.  
           *that from the beans Bill more eaten has than last year*  
           ‘that Bill has eaten more from the beans than last year.’

- (19) a. #dat *WIM* nergens van meer gegeten heeft dan vorig jaar.  
           *that Bill nothing of more eaten has than last year*

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<sup>7</sup> The answer in (17a) is felicitous if the B-accent on the subject is omitted. Doing so allows the example to be construed as providing indirect information about Fred, namely that he did not eat more from the beans than he did last year.

- b. #dat [ nergens van] *WIM* *t* meer gegeten heeft dan vorig jaar.  
*that nothing of Bill more eaten has than last year*  
 ‘that Bill has not eaten more from anything than last year.’
- (20) a. dat *NIEMAND* van *de bonen* meer gegeten heeft dan vorig  
*that nobody from the beans more eaten has than last*  
*jaar.*  
*year*
- b. dat [ van *de bonen*] *NIEMAND* *t* meer gegeten heeft dan vorig  
*that from the beans nobody more eaten has than last*  
*jaar.*  
*year*  
 ‘that nobody has eaten more from the beans than last year.’

Let us summarize the results of this section. We have argued that A'-scrambling in Dutch is associated with the notion contrast. In particular, this type of movement marks the material relevant to calculating the set of alternatives on which the contrast operates. As a consequence, not all topics and foci can undergo A'-movement, but only those that are interpreted contrastively. Despite the fact that topic and focus movement have an identical trigger, they behave differently in certain respects. This is because the domain of contrast of a focus is taken from its background, while the domain of contrast of a topic is taken from its comment. As a consequence of the interaction between DoC marking and the information-structural constraints in (14), movement of a topic out of a constituent containing a focus is acceptable, but not the other way around.<sup>8</sup>

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<sup>8</sup> We assume throughout that in situ focus does not move at LF. The data can also be captured, however, if in situ foci do move, so as to create a representation in which focus and background are constituents (abstracting away from many details; see Krifka 2006). Such an analysis requires two additional assumptions. To begin with, when overt focus movement takes place, LF-movement of material marked as belonging to a background must not be allowed. Such movement would repair the ill-formed example in (15b). By contrast, when no overt focus movement takes place, LF-movement must be generally available. For instance, the topic in (15a) must move, as it would otherwise be part of a background created by LF focus movement. (Note, however, that parallel structures created by overt movement give rise to ungrammaticality; see footnote 6 for discussion.)

The restriction that marking relations established in overt syntax cannot be undone at LF has a precedent in the literature on multiple WH-questions: if overt movement is used to mark the scope of a WH-operator, its scope cannot be extended through subsequent LF-procedures. Consequently, *Who wonders what*

### 3. Japanese topic fronting

In this section, we consider the syntactic distribution of topics in Japanese as an example of a rule generalizing over aboutness topics and contrastive topics. In this language, both types of topic are marked with the particle *wa*, with contrastive topics obligatorily bearing stress. The two types of topic are often treated independently in the literature on Japanese. Kuno (1973), for example, claims that there are two uses of *wa*: thematic and contrastive. These terms refer to aboutness and contrastive topics, respectively (see Heycock 2007 for an overview of the literature). However, we claim that a unified account that makes reference to the notion [topic] straightforwardly explains the syntactic distribution of both aboutness and contrastive topics. Specifically, we argue that all topics, contrastive or not, must appear in clause-initial position:

(21) [Topic] is licensed in clause-initial position.

The effects of the above rule can be seen when we consider discourse contexts in which an item must be interpreted as an aboutness topic or contrastive topic. For instance, a request such as *tell me about X* forces *X* to be interpreted as an aboutness topic in the reply (Reinhart 1981). In Japanese, the item *X* in the response must be marked with *wa* and appear in a left-peripheral position. The examples in (22) illustrate the point for subjects, while those in (23) do so for objects.<sup>9</sup> (The nature of the empty category in (23a) is discussed below.)

(22) *Tell me about that dog.*

- a. Sono inu-wa kinoo John-o kande-simatta.  
that dog-*WA* yesterday John-*ACC* bite-closed  
b. #John<sub>i</sub>-o sono inu-wa kinoo *t<sub>i</sub>* kande-simatta.  
*John-ACC that dog-WA yesterday bite-closed*  
'The dog bit John yesterday.'

(23) *Tell me about that hat.*

- a. Sono boosi-wa John-ga kinoo *e<sub>i</sub>* kaimasita.  
that hat-*WA* John-*NOM* yesterday bought

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*John bought?* cannot be interpreted as a multiple WH-question, whereas *Who said that John bought what?* does allow such a reading (see van Riemsdijk 1978).

<sup>9</sup> For reasons unknown to us, an object *wa*-phrase prefers not to surface adjacent to a verb. In order to circumvent this issue, adverbials are inserted between object and verb throughout this section.

- b. #John-ga sono boosi-wa kinoo kaimasita.  
*John-NOM that hat-WA yesterday bought*  
 ‘John bought that hat.’

Contrastive topics display comparable behaviour. The exchange in (24) forces *Bill-wa* in the answer to be a contrastive topic. As expected, *Bill-wa* must appear in clause-initial position. The examples in (25) show that the same observation obtains when an object is a contrastive topic.

(24) *What did John eat at the party yesterday?*

Hmm, John-wa doo-ka sira-nai-kedo,  
 ‘Well, I don’t know about John, but...’

- a. Bill-wa 8-zi-goro MAME-O tabeteita (yo)  
*Bill-WA 8 o’clock-around beans-ACC eating (PRT)*  
 b. #MAME<sub>i</sub>-O Bill-wa 8-zi-goro *t<sub>i</sub>* tabeteita (yo)  
*beans-ACC Bill-WA 8 o’clock-around eating (PRT)*  
 ‘As for Bill, he was eating beans around 8 o’clock.’

(25) *Who ate the pasta at the party yesterday?*

Hmm, pasta-wa doo-ka sira-nai-kedo,  
 ‘Well, I don’t know about the pasta, but...’

- a. #BILL-GA mame-wa 8-zi-goro tabeteita (yo)  
*Bill-NOM beans-WA 8 o’clock-around eating (PRT)*  
 b. Mame<sub>i</sub>-wa BILL-GA 8-zi-goro *t<sub>i</sub>* tabeteita (yo)  
*beans-WA Bill-NOM 8 o’clock-around eating (PRT)*  
 ‘As for the beans, Bill was eating them around 8 o’clock.’

There is general agreement in the literature that aboutness topics must appear sentence-initially. As for contrastive topics, however, it is often assumed that these may remain in situ (Kuno 1973, Watanabe 2003; see Heycock 2007 for an overview of the literature). Below we deal with potential counterexamples to (21), but for now let us simply repeat that the examples in (24) and (25) demonstrate that *wa*-phrases that meet the interpretive criteria for contrastive topichood must appear clause-initially.

Although both aboutness topics and contrastive topics must appear in clause-initial position, the syntax of the two types of topics is not identical in every respect. As explained in the introduction, contrastive topics – but not aboutness topics – can undergo A’-movement. Indeed, it has been argued that contrastive topics bind a trace, while aboutness topics are base-generated in a left-peripheral position and associated with an (empty) resumptive pronoun (Saito 1985 and Hoji 1985, but see Kuroda 1988 and



Sakai 1994 for an alternative view). Hoji demonstrates that this distinction explains a number of differences between aboutness topics and contrastive topics concerning weak crossover, reconstruction for binding and sensitivity to island constraints. For example, an aboutness topic can be associated with a position inside a relative clause, but a contrastive topic cannot. Moreover, a pronoun associated with an aboutness topic can be overtly realized inside the relative clause, but not one associated with a contrastive topic (slightly modified from Hoji 1985: 152, 161):

- (26) Sono boosi-wa [<sub>TP</sub> John-ga [<sub>NP</sub> [<sub>TP</sub> e<sub>j</sub> e<sub>i</sub>/ sore<sub>i</sub>-o kabutteita]  
*that hat-WA John-NOM it-ACC was.wearing*  
 hito<sub>j</sub>]-o yoku sitteiru]  
*person-ACC well know*  
 ‘As for that hat, John knows well the person who was wearing it.’

- (27) ?\*(Susan zya nakute) Mary-wa, [<sub>TP</sub> John-ga [<sub>NP</sub> [<sub>TP</sub> e<sub>j</sub> e<sub>i</sub>/kanozyo<sub>i</sub>-o  
*(not Susan, but) Mary-WA John-NOM she-ACC*  
 butta] hito<sub>j</sub>]-o sagasite-iru]  
*hit person-ACC looking.for*  
 Lit.: ‘(Not Susan, but) Mary, John is looking for a person who hit (her).’

Thus, contrastive topics in Japanese, like their Dutch counterparts, undergo movement. However, unlike in Dutch, this movement does not seem to mark the domain of contrastiveness, as it is always to clause-initial position.

It is important to note that the rule in (21) mentions the notion [topic], rather than the morphological marker *wa*, which typically accompanies topics. This implies that if there are any *wa*-phrases not interpreted as topic, these need not appear in first position. The literature acknowledges that there are *wa*-phrases that need not be fronted, but at the same time it is often claimed that *any* constituent marked by *wa* is a topic (but see Kuroda 1988, 2005). It seems to us, however, that the empirical basis for this claim is questionable.

As a matter of logic, the fact that topics are marked by *wa* does not warrant the conclusion that *wa* is a topic marker. Unless one intends to render this assumption empirically vacuous, the best way to proceed is to consider the interpretation of non-clause-initial *wa*-phrases in some detail. If these phrases systematically fail to be interpreted as topics, the rule in (21) would receive support. If they do meet tests for topic-hood, this would refute (21). Our assessment is that the data go our way.

The crucial cases of *wa*-phrases in a non-clause-initial position are given below (see Hoji 1985, Saito 1985, Watanabe 2003, Tomioka 2007a, Heycock 2007, among others). The examples in (28) and (29) differ in that the *wa*-phrase in (28) is unstressed, while that in (29) is stressed.

(28) *Who did the dog bite?*

*JOHN<sub>i</sub>-O sono inu-wa kinoo t<sub>i</sub> kande-simatta.*  
*John-ACC that dog-WA yesterday bite-closed*  
 ‘The dog bit John yesterday.’

(29) *Who was being helpful at the accident scene?*

*JOHN-GA 3-nin-wa tasuketa.*  
*John-NOM 3-CL-WA helped*  
 ‘John helped at least three people.’

We argue that the *wa*-phrase in (28) is a discourse-anaphoric item, while the one in (29) is contrastive. Neither *wa*-phrase qualifies as a topic.

First, let us compare the context in (28), which allows a non-clause-initial *wa*-phrase in the answer, with those in (22) and (23), which require a reply with a fronted *wa*-phrase. Unlike the requests in (22) and (23), the question in (28) does not force the *wa*-phrase in the answer to be an aboutness topic. Discourse coherence is also guaranteed if the *wa*-phrase simply refers back to ‘the dog’. That unstressed in situ *wa*-phrases are indeed discourse-anaphoric is confirmed by the fact that the reply in (28) is infelicitous if uttered in response to a question that does not mention ‘this dog’, such as *What happened?* (Kuno 1973, Tomioka 2007a).

Our classification of unstressed *wa*-phrases receives support from the observation that they cannot be associated with an (empty) pronoun inside a relative clause, as the following example shows:

(30) *Who did the dog that the child bought yesterday bite?*

*#JOHN<sub>k</sub>-O sono kodomo<sub>i</sub>-wa kooen-de [<sub>NP</sub>[<sub>TP</sub> pro<sub>i</sub> e<sub>j</sub> kinoo*  
*John-ACC that child-WA park-at yesterday*  
*katta] inu<sub>j</sub>]-ga t<sub>k</sub> kande-simatta.*  
*bought dog-NOM bite-closed*  
 ‘The dog that this child bought yesterday bit John in the park.’

This example is a dislocation structure, as the *wa*-phrase does not occupy a thematic position in the main clause. It is generally assumed that dislocation structures require an interpretation of the *wa*-phrase as topic.

The ungrammaticality of the example therefore shows that non-clause-initial unstressed *wa*-phrases can indeed not be topics.

We now turn to the stressed *wa*-phrase in (29). Hara (2006) argues that a sentence containing a stressed *wa*-phrase induces the presupposition that a scalar alternative stronger than the assertion exists, as well as the implicature that this stronger alternative could be false. This seems to provide a correct characterization of the interpretation of stressed *wa*-phrases, as suggested by the use of ‘at least’ in the English translation of (29). However, nothing in Hara’s characterization of the semantics of contrastive *wa*-phrases forces the *wa*-phrase to be a topic. As Hara notes, stressed *wa*-phrases indeed differ from contrastive topics in languages such as German, in that the former do not require the presence of a focus in the sentence. Moreover, it is a well-known property of topics that they must be specific (Reinhart 1981). This effectively rules out a topic interpretation for *3-nin* ‘3-classifier’ in (29), which is a non-specific, quantified nominal.

Finally, a theory that treats all *wa*-phrases as topics would have to say that fronting of topics is optional. However, the *wa*-phrase in (29), which does not meet the semantic criteria for topic-hood under the intended non-specific interpretation of *3-nin*, resists fronting:

- (31) #*3-nin<sub>i</sub>-wa John-ga t<sub>i</sub> tasuketa*  
      *3-CL-WA John-NOM helped*  
      ‘John helped at least three people.’

Summarizing this section, the syntactic distribution of both aboutness topics and contrastive topics in Japanese can be captured by a single rule that refers to the notion [topic]. This correctly predicts the non-topical properties of *wa*-phrases that do not occupy clause-initial position.

#### 4. The position of Russian foci

In the previous sections we have discussed a rule that mentions the feature [contrast] (Dutch A’-scrambling) and a rule that mentions the feature [topic] (Japanese topic fronting). We now consider a rule that mentions the third and final feature in (1), namely [focus]. We present Russian data showing that all foci in this language share an underlying clause-final position. In other words, Russian foci obey the following rule:

- (32) [Focus] is licensed in clause-final position.

It is irrelevant to the argument we present whether foci are base-generated clause-finally or end up there via a derivation involving movement.

The generalization in (32) does not hold on the surface. New information foci indeed show up clause-finally, as illustrated in (33), but contrastive foci typically occupy positions further to the left, as we will see below (see Krylova and Khavronina 1988, King 1995, and Brun 2001).

- (33) a. Čto Saša čitajet? Saša čitajet KNIGU  
*what-ACC Sasha reads?* *Sasha reads book-ACC*  
 ‘What does Sasha read?’ ‘Sasha reads a book.’  
 b. Kto čitajet knigu? Knigu čitajet SAŠA  
*who reads book-ACC* *book-ACC reads Sasha*  
 ‘Who reads the book?’ ‘Sasha reads the book.’  
 c. Komu Anja dala knigu? Anja dala knigu KATE  
*who-DAT Anna gave book-ACC* *Anna gave book-ACC Kate-DAT*  
 ‘Who did Anna give the book to?’ ‘Anna gave the book to Kate.’  
 d. Čto Anja dala Kate? Anja dala Kate KNIGU  
*What-ACC Anna gave Kate-DAT* *Anna gave Kate-DAT book-ACC*  
 ‘What did Anna give Kate?’ ‘Anna gave Kate the book.’

The reader may wonder how we can substantiate the generalization in (32), if contrastive foci move. Our first argument is based on the scopal properties of contrastive foci, and in particular on the observation that they take scope in the same position as new information foci. The data fall out from (32), assuming that A'-movement obligatorily reconstructs for scope.

As a point of departure, consider the scopal properties of new information foci. In general, Russian exhibits surface scope (see Ionin 2001) and, in line with this, quantifiers that constitute a new information focus scope under other quantifiers. After all, new information foci occupy the clause-final position.

- (34) a. Odin mal'čik ljubit KAŽDUJU DEVOČKU.  
*one boy-NOM loves every girl-ACC*  
 ‘One boy loves every girl.’  $\exists > \forall; * \forall > \exists$   
 b. Odu devičku ljubit KAŽDYJ MAL'ČIK.  
*one girl-ACC loves every boy-NOM*  
 ‘Every boy loves one girl.’  $\exists > \forall; * \forall > \exists$   
 c. Ty predstavil odnogo učitelja KAŽDOMU STUDENTU.  
*you-NOM introduced one teacher-ACC every student-DAT*  
 ‘You introduced one teacher to every student.’  $\exists > \forall; * \forall > \exists$   
 d. Ty predstavil odnomu studentu KAŽDOGO UČITELJA.  
*you-NOM introduced one student-DAT every teacher-ACC*  
 ‘You introduced every teacher to one student.’  $\exists > \forall; * \forall > \exists$

The pattern of surface scope breaks down in the case of contrastive foci.<sup>10</sup> Even though these are fronted, they systematically take lowest scope. That is, they reconstruct obligatorily to a position below other quantifiers. Thus, the fronted contrastive foci in (35) take scope in exactly the same position as the in situ new information foci in (34).

- (35) a. *KAŽDUJU DEVOČKU* ja xoču čtoby odin mal'čik ljubil  
*every girl-ACC I-nom want that one boy-NOM loved*  
 (a ne každuju babušku).  
*and not every grandma-ACC*  
 'I want one boy to love every girl (and not every grandma).'  
 $\exists > \forall; * \forall > \exists$
- b. *KAŽDYJ MAL'ČIK* ja xoču čtoby odnu devočku ljubil  
*every boy-NOM I-NOM want that one girl-ACC loved*  
 (a ne každyj DEDUŠKA).  
*and not every grandpa-NOM*  
 'I want every boy to love one girl (and not every grandpa).'  
 $\exists > \forall; * \forall > \exists$
- c. *KAŽDOMU STUDENTU* ja xoču čtoby ty predstavil odnogo  
*every student-DAT I-NOM want that you introduced one*  
*učitelja, (a ne každomu PROFESSORU)*  
*teacher-ACC and not every professor-DAT*  
 'I want that you introduce one teacher to every student (and not to every professor).'  
 $\exists > \forall; * \forall > \exists$
- d. *KAŽDOGO UČITELJA* ja xoču čtoby ty predstavil odnomu  
*every teacher-ACC I-NOM want that you introduced one*  
*studentu, (a ne každyj dekanu)*  
*student-DAT and not every dean-ACC*  
 'I want that you introduce every teacher to one student (and not every dean).'  
 $\exists > \forall; * \forall > \exists$

It is not very surprising that Russian contrastive foci can move. As explained in the introduction, contrast is associated with quantificational

<sup>10</sup> In the Russian linguistic literature different types of focus are taken to receive different Intonational Contours (IKs). New information focus is marked by IK1 (a falling tone), whereas contrastive focus receives IK2 (emphatic stress marked by a rising tone). For discussion, see Bryzgunova 1971, 1981, Yokoyama 1986, and Krylova and Khavronina 1988. The judgments in the main text presuppose that the constituents marked as contrastive foci bear IK2, while the rest of the sentence is destressed.

properties that allow binding of a variable at the foot of an A'-movement chain (although it would take us too far afield to explore the trigger of movement). However, what is surprising is that the position into which contrastive foci reconstruct should be as low as it seems to be. For example, subjects normally outscope objects in Russian, because the subject position c-commands (and precedes) the object position. However, if the subject is a fronted contrastive focus, it must scope under the object, suggesting that the fronting operation is launched from the sentence-final position.

A second argument in support of (32) can be based on so-called split scrambling. Russian allows extraction of a contrastively focused element out of a larger constituent. There are many questions surrounding this phenomenon, but what is crucial here is that the material stranded by scrambling of the focused constituent provides an overt indication of the movement's launching site. If (32) holds, what we predict is that the stranded material must always occupy a clause-final position. The data below bear this out. If extraction takes place out of the object, then the object itself must be clause-final. If it takes place out of the subject, it is this constituent that must appear in clause-final position. (Although not illustrated here, other examples in which 'performance' is not clause-final are ungrammatical as well.)

- (36) a. *JAZZ-PIANISTA* mal'čiki slyshali [vystuplenije *t*]  
*jazz pianist-GEN boys-NOM listened performance-ACC*  
 (a ne jazz-gitarista)  
 (and not jazz-guitarist-GEN)  
 'The boys listened to the performance of the jazz pianist and not of the jazz guitarist.'
- b. \**JAZZ-PIANISTA* [vystuplenije *t*] slyshali mal'čiki  
*jazz pianist-GEN performance-ACC listened boys-NOM*  
 (a ne jazz-gitarista)  
 (and not jazz-guitarist-GEN)
- (37) a. *JAZZ-PIANISTA* devočku potrjaslo [vystuplenije *t*]  
*jazz pianist-GEN girl-ACC amazed performance-NOM*  
 (a ne jazz-gitarista)  
 (and not jazz-guitarist-GEN)  
 'The performance of the jazz pianist amazed the girl (and not of the jazz guitarist).'

b. \**JAZZ-PIANISTA* [ vystuplenije *t*] potrijaslo devočku  
*jazz pianist-GEN performance-NOM amazed girl-ACC*  
 (a ne jazz-gitarista)  
 (and not jazz-guitarist-GEN)

To summarize, if we assume, as stated in (32), that all foci in Russian are licensed in clause-final position, then both the scopal properties of fronted foci and the position of stranded material can be readily understood.

### 5. Decomposition and cartography

The data we have presented in this paper provide a strong argument against a cartographic approach to topic and focus movement (for a general overview of the framework, see Cinque 2002, Rizzi 2003, and Belletti 2004).

Like the proposal developed here, cartography aims at decomposition. For example, the functions combined in the C-node of Government and Binding Theory are distributed across several functional projections, such as WhP and FinP. As a result of this kind of decomposition, a clause consists of a large number of functional projections. In line with standard assumptions, these are taken to be generated in a fixed order, with specifiers that typically only host a phrase with one particular function.

On this view of syntax, one would at first sight expect universal ordering restrictions between any two constituents with distinct syntactic functions. Of course, reality is more complex and the way this additional complexity is dealt with in cartography is by allowing languages to vary in the extent to which movement takes place in overt or covert syntax.

In empirical domains other than the distribution of topic and focus, it has already been shown that a single hierarchy of functional projections is untenable, even under an extensive parameterization of movement operations. A number of authors have pointed to problems with the order of adverbials, in reaction to Cinque 1999 (see Bobaljik 1999, Haider 2000, Ernst 2001, and Nilsen 2003). Bobaljik observes that arguments, verbs and auxiliaries in Italian can be freely interspersed in Cinque's (1999) adverbial sequence. This fact is incompatible with Cinque's proposal that the adverbial sequence is given by the order of functional projections in the verbal domain.

Bobaljik argues that this hierarchy paradox may yield to a phrase-structural account. He suggests that there are independent argumental and adverbial hierarchies. These can be conceived of as separate tiers of the syntactic representation that are ultimately collapsed into a single structure.

Bobaljik draws an analogy with the shuffling together of two decks of cards, a process that preserves the internal order of each deck while it intersperses the cards of one deck among those of the other.

Although Bobaljik's proposal provides an account of the Italian data in terms of what one might call 'relativized cartography', it cannot capture the syntax of topic and focus movement. The data most immediately problematic are those found in Dutch (see section 2). One could imagine that there is a topic-focus hierarchy ( $\text{TopP} > \text{FocP}$ ), whose positions can be freely interspersed with positions in Bobaljik's argumental hierarchy. However, this is not sufficient to explain the fact that the order of constituents interpreted as topic and focus is free when they remain in situ, but rigid as soon as one of them moves. As we have shown, a topic can move out of a constituent containing an in situ focus, but a focus cannot move out of a constituent containing an in situ topic. The problem is that on a 'relativized cartography' approach moved topics and foci would occupy a position in the topic-focus hierarchy, while topics and foci that remain in situ would occupy positions in the argumental hierarchy. Hence, ordering restrictions must be formulated that involve positions in more than one hierarchy, showing that a tier-based account is insufficient.

Let us consider the problems that arise in some more detail. A cartographic implementation of the decomposition in the table in (1) would require three functional projections, namely  $\text{TopP}$ ,  $\text{FocP}$  and  $\text{ContrastP}$ . Cross-linguistic variation would be captured by the extent to which these projections trigger displacement. In Japanese, topics appear in the specifier of  $\text{TopP}$ . In Russian, foci appear in the specifier of  $\text{FocP}$ , while contrastive foci move on to the specifier of  $\text{ContrastP}$ . Finally, in Dutch, contrastive topics and foci move to the specifier of  $\text{ContrastP}$ .

The addition of  $\text{ContrastP}$  to the topic-focus hierarchy requires an additional ordering statement. The Russian data suggest that  $\text{ContrastP}$  dominates  $\text{FocP}$ . If it also dominates  $\text{TopP}$ , the landing site for contrastive topics and foci is identical and it is therefore impossible to capture the ordering restrictions associated with topic and focus movement. If  $\text{ContrastP}$  occupies a position between  $\text{TopP}$  and  $\text{FocusP}$ , one might attempt to capture the Dutch data by saying that contrastive topics move on to the specifier of  $\text{TopP}$ , while contrastive foci surface in  $\text{ContrastP}$ . However, if  $\text{TopP}$  can trigger movement, we would also expect displacement of aboutness topics, contrary to fact.

These considerations suggest that the ordering effects found in Dutch cannot be reconciled with the proposal that there are different functional projection hosting [topic], [focus] and [contrast]. This does not mean that the Dutch data are incompatible with a theory of phrase structure that



associates movement with functional projections. Descriptive adequacy can be achieved if the following assumptions are made (for detailed discussion see Neeleman and Van de Koot 2007):

- i. Contrast must co-project with either [topic] or [focus]. (This restricts movement to contrastive topics and foci.)
- ii. The position of TopP and FocP is free (at least in Dutch). (This captures the observed variation in landing sites.)
- iii. Projection of either [contrast] or [topic] and [focus] is optional (at least in Dutch). (This allows in situ topics and foci.)
- iv. Heads containing [contrast] mark their complements as the domain of contrastiveness. (This, in conjunction with restrictions on information structure, captures the observed ordering restrictions.)

However, each of these assumptions sacrifices a central tenet of cartography. Assumption (i) gives up the idea that features with individual syntactic effects have separate syntactic positions. Assumptions (ii) and (iii) give up the idea that there is a fixed clausal skeleton. Finally, assumption (iv) gives up the idea that movement is triggered by properties of the specifier. These sacrifices seem lethal.

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