

The Free Word Order Phenomenon



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Its Syntactic Sources and Diversity

Edited by

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Introduction

Joachim Sabel and Mamoru Saito

1. The free word order phenomenon: Its diversity and syntactic sources

The articles in this volume deal with the “free word order” or “scrambling” phenomenon from both empirical and theoretical perspectives. The free word order phenomenon is still an unsettled issue. It is open to debate how it is to be analyzed and how its parametric variation is to be explained. The articles contribute to the understanding of the phenomenon by exploring its diversity with respect to languages such as German, Japanese, Kannada, Malayalam, Serbo-Croatian, Tongan, and Turkish, and by discussing its syntactic sources in terms of adequate syntactic analysis.

The examination of the phenomenon within generative grammar goes back to Ross (1967). Ross proposed the rule of scrambling as an operation of the stylistic component and not of core syntax. Hale (1983, 1992), who discussed free word order in non-configurational languages such as Warlpiri, observed that those languages show a cluster of properties. Besides free word order, they allow for *pro*-drop and discontinuous constituents. Hale, based on this observation, proposed to analyze free word order as a base property, i.e. as a result of various base-generated word orders. In contrast, it has been argued that “non-standard word orders” in other languages such as German and Japanese are derived from the basic word order by syntactic movement (see, for example, Saito 1985, Tada 1993 for Japanese, and Weibelhuth 1989, Müller and Sternefeld 1994, Grewendorf and Sabel 1999 for German), although more refined base-generation analyses have been proposed to explain the free word order phenomenon in these languages as well (see, for example, Kitagawa 1990, Bošković and Takahashi 1998 for Japanese, and Bayer and Kornfilt 1994, Fanselow 2001 for German). For those who pursue the movement approach, the examination and the analysis of the properties of the relevant movement operation have become an important research topic.

Within the Minimalist Program (Chomsky 1995, 2000), it is assumed that the core syntactic computational system has two interfaces, the conceptual-

intentional (LF) and the articulatory-perceptual (PF). Against this background, it is still debated in the current research whether scrambling is an operation in the core syntax or if it is a PF-stylistic rule that falls outside of core syntax. If scrambling is a PF-operation, a question arises why it shares the properties of standard syntactic movements with respect to binding and extraction (Saito 1985, 2003; Mahajan 1990; and the contributions in this volume). On the other hand, if it is a syntactic operation, it should be explained why it is apparently semantically vacuous, subject to total reconstruction, as has been argued in Saito (1989). (For discussion of this last aspect, see the papers by Miyagawa, Sabel, and Saito in this volume.)

Once it is assumed that free word order is to be accounted for in the core syntax, ‘optionality’ becomes an important issue. The base-generation analyses presuppose that the phenomenon is inherently optional: different word orders obtain as different choices for the base structure are made. (See, for example, Hale 1983, Bošković and Takahashi 1998, Fanselow 2001, and Bošković this volume.) On the other hand, if freedom in word order results from a syntactic movement operation, a question arises with respect to its trigger. Under the minimalist assumption that movement applies only for reasons of checking morphological features (Last Resort), there should be a syntactic reason for this movement. Scrambling, then, could be analyzed as a feature-driven movement operation, triggered either by an EPP-/scrambling-feature, or by a topic-/focus-feature. An alternative would be that scrambling is a special kind of movement operation exempted from having a driving force, as argued by Fukui (1993), Saito and Fukui (1998), and Saito (2003). Note that only under the latter analysis is scrambling an optional movement operation in the theoretical sense. Within a feature-based analysis, the term “free” or “optional” word order is used only descriptively. The articles by Grewendorf, Jayaseelan, Kornfilt, Miyagawa, Otsuka, and Sabel in this volume examine a variety of possibilities for the trigger of scrambling. The paper by Saito, on the other hand, develops the analysis of scrambling as optional movement.

It has been claimed that scrambling applies for reasons of Case-checking (for example, Kitahara 2002). But this approach leaves unaccounted for the scrambling of those elements such as PPs that need not be checked for Case. It has also been argued that DP-scrambling applies for semantic reasons, i.e. that a scrambled DP is interpreted differently from a DP in situ (for example, de Hoop 1992, Diesing 1992). However, as has been pointed out by Ruys (2001), and Haider and Rosengren (2003), among others, the reading assigned to a scrambled constituent is often available in the base order as well. Finally, it has been hypothesized that scrambling applies in order to

achieve information structure effects. Under this analysis, the scrambled element represents a topic or a focus. This possibility is discussed in several articles in this volume, including those by Grewendorf, Jayaseelan, Miyagawa, Otsuka, and Sabel.

Another important issue is the binding properties of the scrambled phrases, a research topic initiated by Webelhuth (1989) and Mahajan (1990). Although it concerns the base-generation approach as well, the issue is phrased within the movement approach as whether scrambling patterns with NP- or wh-movement, i.e. whether it has A- or A'-movement properties. As the issue has implications for the landing site of scrambling (e.g., whether the movement is adjunction or targets a specifier position), it relates closely to the problems of optionality and trigger of scrambling mentioned above. The articles by Grewendorf, Jayaseelan, Miyagawa, Sabel, and Saito in this volume consider this issue. The paper by Murasugi and Kawamura, on the other hand, examines the acquisition pattern of scrambling in comparison with passive, and reports that Japanese-speaking children acquire the A'-properties of scrambling quite early.

The crosslinguistic examination of the topics mentioned above highlights the diversity in the properties of the free word order phenomenon. This leads to a complex of important questions concerning the parametric properties of languages. First, why is scrambling observed in some languages but not in others? It has been claimed that the possibility of scrambling is connected to the head parameter. (See, for example, Fukui 1993, Haider 1997, and Saito and Fukui 1998.) One idea is that scrambling freely applies to the left in left-branching languages such as Japanese, where complements are to the left of their selecting heads. This analysis is taken up in Kornfilt's article, which discusses rightwards scrambling in Turkish, an SOV language. (See also Bailyn 2002 and Bošković this volume, for relevant discussion on leftward scrambling in Slavic (SVO) languages). Others have claimed that *pro*-drop is a necessary condition for scrambling to obtain (see Sabel this volume). Still others have entertained the possibility that overt Case morphology is the necessary property relevant for the availability of scrambling (see, for example, Bošković this volume).

The second question is why we observe various differences among the free word order languages. Differences can be found, for example, with respect to the locality restrictions on scrambling. (See Müller and Sternefeld 1994, Sabel 1997, and Grewendorf and Sabel 1999 for discussion.) Scrambling out of finite clauses is possible in languages such as Hindi, Japanese, Korean, Mohawk, Persian, Russian, and Serbo-Croatian, but not in Dutch, German, Polish, and Warlpiri. Languages such as German, Dutch, Mohawk,

and Warlpiri have obligatory overt wh-movement and very restricted wh-scrambling. In this respect these languages contrast with Hindi, Japanese, Korean, Persian, and the Slavic scrambling languages. Similar differences can be found with respect to discontinuous constituents. For example, Warlpiri shows discontinuous DPs (adjectives can split, and it is also possible to split demonstratives), whereas DP discontinuity is not permitted as freely in Mohawk (adjectives can split, but it is normally impossible to have split demonstratives). (See Baker 2001, Pensalfini 2004, and Bošković this volume.)

These differences suggest that free word order is not a homogeneous phenomenon and that there is no single macro-parameter that is responsible for the absence/presence of the phenomenon. (See, for example, Hale 1992, Baker 2001, and Pensalfini 2004 for analyses of different types of free word order languages, i.e. configurational and nonconfigurational free word order languages.) If this is the case, detailed examination of each language would be necessary to uncover the source, or more precisely, the sources of the free order phenomenon. This is precisely what is pursued in the papers contained in this volume.

2. The contributions in this volume

The present volume addresses the topics mentioned above. Several authors offer new ways of analyzing the free word order phenomenon within the Minimalist Program. Among the concrete issues discussed are those related to the trigger for scrambling, the possibility of assimilating scrambling to topicalization or focus movement, and the technical implementation of the operation to prevent unwarranted derivations. Other topics that are investigated include the typology of scrambling languages, the factors that determine the presence/absence of scrambling in a language, and also the timing of the acquisition of scrambling within the course of first language acquisition.

On the empirical side, a variety of phenomena are discussed and analyzed. Among the topics are the proper analysis of rightward scrambling (as opposed to leftward scrambling) in Turkish, the A-/A'-nature and the trigger of scrambling in Tongan, and left-branch extractions and DP-Split in Slavic. More traditional issues such as the differences between remnant and non-remnant scrambling in German, and the reconstruction properties of Japanese scrambling are also examined. In addition, effects of information structure and locality constraints are discussed with respect to scrambling in German, Malayalam, and Tongan, for example.

We will close this introduction with short summaries of the articles contained in this volume.

2.1. Zeljko Bošković:

Left branch extraction, structure of NP, and scrambling

This paper considers some possible accounts for the cross-linguistic variation regarding left branch extraction (LBE), focusing on adjectival LBE, and explores their consequences for the internal structure of noun phrases as well as the analysis of scrambling. Three possibilities are examined: the first is based on the phase system extended to noun phrases, the second on the existence of a cross-linguistic variation in the position of adjectives within a noun phrase, with some languages having the traditional NP-over-AP structure and others Abney's (1987) AP-over-NP structure, and the third on Bošković and Takahashi's (1998) analysis of scrambling. The first two imply that languages that allow LBE of adjectives do not have DP and the third that the availability of scrambling is a prerequisite for allowing LBE. The paper also explores the role of Case in licensing scrambling, suggesting that Case does the job of D in scrambling languages.

2.2. Günther Grewendorf:

The discourse configurationality of scrambling

This paper argues that what has been called "scrambling" is really a cover term for several different kinds of movements that are subject to different restrictions and target different positions in the clause structure. More specifically, it shows that the so-called German middle field has a much richer structure than traditionally assumed, including two layers of topic and focus projections the internal configuration of which roughly corresponds to what Rizzi (1997) has proposed for the left periphery. The author argues that this allows us to solve several problems with the traditional analyses of scrambling, such as the fact that contrary to standard generalizations on German scrambling, there are well-formed examples of remnant "scrambling" and "scrambling" out of finite clauses.

2.3. K. A. Jayaseelan and R. Amritavalli:
Scrambling in the cleft construction in Dravidian

In a cleft sentence in Dravidian, the focus and the copula (moving together) appear to be able to “float” into the cleft clause that expresses the presupposition. The analysis proposed is that elements from the cleft clause move to topic positions to the left of the focus. Actually, only shortdistance clefts allow these extractions (i.e. allow this type of scrambling). The authors suggest that long-distance clefts employ relativization in order to extract the focus from the cleft clause. This accounts for the absence of “floating” with long-distance clefts, as relative clauses are known to be barriers for extraction. In short-distance clefts, the cleft clause is just an IP, which does not count as a phase. Therefore ‘direct’ extractions to focus and topic positions outside the clause are predicted to be possible.

2.4. Jaklin Kornfilt:
Asymmetries between pre-verbal and post-verbal scrambling in Turkish

“Scrambling” can apply both pre-verbally and post-verbally in Turkish, a head-final language. This paper shows, against some previous claims, that the two “scrambling fields” differ in certain respects. For example, post-verbal constituents c-command the pre-verbal (scrambled and nonscrambled) ones, but not vice-versa. Further, scrambled constituents in the pre-verbal field are placed in a hierarchical structure, while those in the post-verbal field form a flat sequence. The paper proposes that post-verbal constituents are indeed moved there by rightward adjunction (rather than being post-verbal due to leftward remnant movement), and that there is an operation that changes the hierarchical post-verbal adjunction structure into a flat one. Finally, rightward scrambling is argued to apply post Spell-Out, i.e. that it is a PF operation rather than a feature-driven syntactic movement.

2.5. Shigeru Miyagawa:
EPP and semantically vacuous scrambling

The claim that Japanese scrambling is a completely optional operation is often made on the basis of Saito (1989), which argues that (long-distance) scrambling is ‘semantically vacuous’ because it can be undone at LF. If it is semantically vacuous, it cannot be obligatory, hence it must be optional. The author argues that the evidence Saito gave could be explained in other

ways that do not lead us to the conclusion of semantic vacuity. Moreover, he maintains that instances of scrambling that are ostensibly ‘completely undone’ at LF are, in fact, not undone at all. Where there is reconstruction, it is the familiar kind often observed with wh-movement in languages such as English. This leaves us with a view of scrambling very much like the original Mahajan (1990) view: it is either A’- (wh-movement) or A- (raising) movement. According to the paper, there is, however, one narrow domain in which Saito appears to be correct – that scrambling appears to be completely undone. It is a domain – rather unusual and even odd – in which universal conditions on movement are completely ignored. It remains to be seen whether this operation is real movement, or if it is some sort of a stylistic PF ‘reordering’.

2.6. Keiko Murasugi and Tomoko Kawamura:

On the acquisition of scrambling in Japanese

This paper presents a theoretical and experimental study on the acquisition of scrambling and its reconstruction properties. Hayashibe (1975) reports that scrambling is acquired quite late in the development of grammar. Otsu (1992), on the other hand, reports that 3–4 year old children interpret scrambled sentences correctly when appropriate contexts are provided. Against this background, it was shown in Murasugi (2000) that 2–4 year old Japanese-speaking children interpret scrambled sentences correctly when they are made to pay proper attention to the Case markers. This paper develops this experimental study and demonstrates that those children who assign the correct predicate-argument structures to scrambled sentences exhibit knowledge of their reconstruction properties as well. The authors argue, based on this result, that children have knowledge not only of scrambling but also of its syntactic properties at a very early stage of language acquisition. They also point out that passive is acquired much later than scrambling, and discuss this fact in relation with Borer and Wexler’s (1987) A-chain maturation hypothesis.

2.7. Yuko Otsuka:

Scrambling and information focus: VSO-VOS alternation in Tongan

Focusing on scrambling in Tongan, this paper shows that it has properties characteristic of A-movement and that the scrambled constituent must represent new information. It is analyzed as an obligatory movement to

SpecTP licensed by two features on T: EPP and information focus (cf. Miyagawa 2001, 2003 and Bailyn 2003, 2004). The apparent contradiction between this analysis and Diesing's (1992) Mapping Hypothesis is also discussed. Based on this discussion, the following generalization is put forward: if a certain property is encoded phonologically, morphosyntactic means to achieve the same effect is not employed, and vice versa. This proposal has implications for the research on focus-driven scrambling as well. It claims that information focus is associated with T and predicts that focus-driven scrambling exists only in languages that do not have a phonological means (e.g., stress) to realize focus.

2.8. Joachim Sabel:

String-vacuous scrambling and the Effect on Output Condition

Different versions of the Principles and Parameters framework make different predictions with respect to the derivation of potentially derivationally ambiguous word orders. For example, if Move- α applies freely, it is often impossible to predict whether scrambling and NP-movement have taken place in German passive sentences. In contrast, if economy principles restrict the number of possible derivations, we can clearly predict whether scrambling and NP-movement have applied or not. Syntactic tests are used to show that potentially derivationally ambiguous word orders of the relevant type are in fact not ambiguous but only compatible with one derivation. This result is derived from the 'Effect on Output Condition' (EOC) (Chomsky 1995, 2000, 2001). It provides support for the minimalist version of the Principles and Parameters framework with economy constraints, as opposed to a conception of grammar in which 'Move' applies freely. It is shown that scrambling and NP-movement that have no effect at the PF-interface are impossible, i.e., an expletive *pro* and a scrambling-feature can enter the numeration only if they have an effect on the PF-output. It is argued further that certain instances of scrambling have an LF-effect. This constitutes evidence for a syntactic (feature-checking) approach of scrambling and against the view that scrambling is always a purely stylistic PF-phenomenon.

2.9. Mamoru Saito:

Further notes on the interpretation of scrambling chains

A proposal was made in Saito (2003) to explain the A/A'-properties of scrambling by means of cyclic interpretation. This paper attempts to extend

this analysis so that the effects of scrambling on quantifier scope and NPI licensing are properly captured. The central claim is that Full Interpretation in the sense of Chomsky (1986) applies cyclically to the information unit syntax transfers to semantics upon the completion of each phase. This makes it possible to account for the clause-boundedness of QR as well as the obligatory reconstruction of quantified phrases and NPIs proposed by long scrambling. In the course of the discussion, those examples of NPI scrambling that have been cited as counter-examples to radical reconstruction are explained away. At the end, suggestions are made for the ways syntax transfers information to semantics. Information concerning the role of each element, that is, whether it is an argument, a predicate, a modifier, an operator, or a quantifier, is sent to semantics upon the completion of each phase. On the other hand, information related to the anaphoric relation of NPs is sent to semantics independently of phase, still in the course of the derivation in the case of Condition (A) and at the termination of the derivation in the case of Condition (C).

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Left branch extraction, structure of NP, and scrambling

Željko Bošković

The paper examines the phenomenon of left branch extraction (LBE), focusing on adjectival LBE, and explores consequences of a proper analysis of LBE for the theory of locality, the internal structure of NP, and the phenomenon of scrambling. In addition to the two existing analyses of LBE (an ECP analysis and a remnant movement analysis), I consider three new analyses of LBE, one based on the phase-based locality system, which extends the phase system from clauses to NPs, one based on the existence of cross-linguistic variation regarding the position of adjectives in the traditional NP, with some languages having the traditional NP-over-AP structure, others having Abney's (1987) AP-over-NP structure, and one based on Bošković and Takahashi's (1998) analysis of scrambling. The first two analyses rely on the claim that languages that allow LBE of adjectives do not have DP and the third one on a correlation between LBE and scrambling, where the availability of scrambling is a prerequisite (but not sufficient) for allowing LBE. Although there are reasons to disfavor some of the analysis considered in the paper, ultimately I will not be able to provide a completely conclusive way of teasing apart all the alternative analyses. In this respect, the paper reflects our present understanding of LBE, which is currently too rudimentary to put us in a position to conclusively argue for one analysis of the phenomenon.¹ Rather, the goal of the paper is more modest: My hope is that the exploration of the alternative analyses of LBE in this paper will bring us closer to understanding the nature of this rather mysterious and somewhat forgotten phenomenon, spurring further research on it, as well as help us shed light on a number of important issues concerning the theory of locality, the internal structure of NP, and the nature of scrambling. Regarding scrambling, a correlation between LBE and a particular view of the structure of the traditional NP which allows the DP layer to be missing from an NP (namely, the generalization that languages that allow LBE do not have DP), and a correlation between LBE and scrambling (namely, the generalization that the availability of scrambling is a prerequisite for LBE), which are

argued for in the paper, will lead me to posit a correlation between the availability of scrambling and the absence of DP in a language, where the latter is a prerequisite for the former. An account of the correlation will be presented based on Bošković and Takahashi's (1998) analysis of scrambling. I will also explore the role of Case in the phenomenon of scrambling, suggesting Case does the job of D in scrambling languages.

The paper is organized as follows. After introducing LBE, in section 2 I summarize two existing accounts of LBE. In section 3 I turn to new approaches to LBE. Section 4 is the conclusion.

1. Introduction

Ross (1986: 127) proposed the Left Branch Condition (LBC), which blocks movement of the leftmost constituent of an NP. The condition has been used in the literature to block extraction of determiners, possessors, and adjectives out of NP.²

- (1) a. **Whose_i did you see [t_i father]?*
 b. **Which_i did you buy [t_i car]?*
 c. **That_i he saw [t_i car].*
 d. **Beautiful_i he saw [t_i houses].*
 e. **How much_i did she earn [t_i money]?*

As already noted by Ross, some languages, e.g., Latin and most Slavic languages, allow LBE, as illustrated by Serbo-Croatian (SC) (2) and Latin (3). (Pied-piping of the LBE remnant is also possible. (3) is taken from Uriagereka 1988.)

- (2) a. *Čijeg_i si vidio [t_i oca]?*
 whose are seen father
 'Whose father did you see?'
 b. *Kakva_i si kupio [t_i kola]?*
 what-kind-of are bought car
 'What kind of a car did you buy?'
 c. *Ta_i je vidio [t_i kola].*
 that is seen car
 'That car, he saw.'

- d. *Lijepi je vidio [t_i kuće].*
 beautiful is seen houses
 ‘Beautiful houses, he saw.’
- e. *Koliko je zaradila [t_i novca]?*
 how-much is earned money
 ‘How much money did she earn?’
- (3) *Cuiam amat Cicero [t_i puellam]?*
 whose loves Cicero girl
 ‘Whose girl does Cicero love?’

This paper investigates LBE focusing on adjectival LBE, with the goal to use it to shed light on the structure of NP, in particular, the structural position of AP within the traditional NP.³ My point of departure is Uriagereka’s (1988: 113) observation that LBE is allowed only in languages that do not have overt articles. Thus, Bulgarian, which Uriagereka mentions, and Macedonian, the two Slavic languages that have overt articles, differ from SC, Russian, Polish, and Czech, which do not have overt articles, in that they disallow LBE (see (4)–(5)). Notice also that Latin differs from modern Romance languages in that it allowed LBE and did not have overt articles.⁴

- (4) a. **Kakva prodade Petko [t_i kola]?* [Bulgarian]
 what-kind-of sold Petko car
 ‘What kind of a car did Petko sell?’
- b. cf. *Kakva kola_i prodade Petko t_i?*
- c. **Čija xaresva Petko [t_i kola]?*
 whose likes Petko car
 ‘Whose car does Petko like?’
- d. *Čija kola_i xaresva Petko t_i?*
- e. **Novata prodade Petko [t_i kola].*
 new-the sold Petko car
 ‘The new car, Petko sold.’
- f. *Novata kola_i prodade Petko t_i.*

- (5) a. **Kakva_i prodade Petko [t_i kola]?* [Macedonian]
 what-kind-of sold Petko car
- b. cf. *Kakva kola_i prodade Petko t_i?*
- c. **Čija_i ja bendisuva Petko [t_i kola]?*
 whose it like Petko car
 ‘Whose car does Petko like?’
- d. *Čija kola_i ja bendisuva Petko t_i?*
- e. **Novata_i ja prodade Petko [t_i kola].*
 new-the it sold Petko car
- f. *Novata kola_i ja prodade Petko t_i.*

2. Existing accounts of LBE

2.1. The ECP analysis

Corver (1992) proposes an ECP analysis that captures Uriagereka’s insight.⁵ He adopts the DP hypothesis, following Abney (1987). However, in contrast to Abney, for whom A takes NP as its complement, Corver adjoins AP to NP. Consider first Corver’s analysis of (1). Regarding (1b–c), Corver assumes that *that* and *which* are D^0 , hence cannot undergo XP movement, the underlying assumption being that LBE is a phrasal movement (see, however, Bošković 2001: 232–238). As for (1a), Corver assumes that *whose* is not a constituent, hence cannot undergo movement. (He places *who* in SpecDP and ‘*s* in D^0 ’)⁶ For Corver, AP LBE violates the ECP. His analysis of AP LBE is based on Chomsky (1986a) ECP system. Since it does not quite work, following Bošković (2005) I will modify it to enhance its empirical coverage. The following is thus a modified version of Corver’s analysis.

Consider (6), which involves adjectival LBE under the standard assumption that movement out of DP must proceed through SpecDP (see, e.g., Boeckx 2001, 2003a, Gavrusseva 2000, Giorgi and Longobardi 1991, Ormazabal 1991, Stowell 1989, Szabolcsi 1994, and Torrego 1987, who all build on the insights of Cinque 1980), and (7), a *that*-trace configuration.

(6) [_{DP} AP_i [_{D'} D [_{NP} t_i [_{NP}

(7) [_{CP} who_i [_{C'} that [_{IP} t_i [_{I'}

The configuration in (6) resembles the *that*-trace configuration in (7). Corver suggests the two should receive a uniform account. In particular, he applies Chomsky's (1986a) rigid minimality account of the *that*-trace effect to (6). On Corver's analysis, AP cannot antecedent govern its trace in (6) because of D', a minimality barrier in Chomsky's (1986a) sense projected by D.⁷ Consider now (8)–(11).

(8) **Handsome_i she saw [t_i boys]*.

(9) **Handsome_i she saw that [t_i boy]*.

(10) *Who_i do you think [t_i left]?*

(11) **Who_i do you think that [t_i left]?*

To account for the fact that both (8) and (9) are unacceptable we need to assume that both overt and null D project a minimality barrier. The null hypothesis (contra Chomsky 1986a) is then that the same should hold for both the overt and the null C. After all, the overt vs. null C/D distinction is really PF-based and should have no bearing on the syntax. It follows then that (8) contains a null D, which projects a minimality barrier, while (10) does not contain a null C. That is, the embedded clause in (10) is an IP, as argued in Bošković (1997), Doherty (1997) and Grimshaw (1997).

Turning now to languages that allow LBE, Corver's analysis of such languages is crucially based on his claim that such languages do not have DP at all. Corver offers several arguments in support of his claim. I will take SC as the representative of this language group, applying Corver's discussion of Czech and Polish to SC.⁸

First, SC does not have overt articles, which are the prototypical instantiation of D⁰. SC does have lexical items corresponding to *that*, *some*, etc., as well as possessives. However, such items are morphologically adjectives in SC (see Zlatic 1998), as (12) shows with respect to a partial paradigm.

- (12) a. *nekim mladim djevojkama*
 some.fem.pl.instr young.fem.pl.instr girls.fem.pl.instr.
- b. *nekih mladih djevojaka*
 fem.gen.pl.

Furthermore, in contrast to their English counterparts, the elements in question can occur in typical adjectival positions in SC, as shown in (13), where a possessive occurs in a predicative position of a copula construction. (English examples in (13)–(17) are given through glosses.)

- (13) *Ova knjiga je moja.*
 *this book is my

Another English/SC contrast which indicates that SC Ds are actually adjectives concerns the fact that, in contrast to English, the elements in question can stack up in SC, just like adjectives.

- (14) *ta moja slika*
 *this my picture

Moreover, their order is relatively free in SC, in contrast to English, where it is fixed. This is not surprising under the D-as-A analysis, since the relative order of adjectives is also relatively free.⁹

- (15) *Jovanova skupa slika* vs. *skupa Jovanova slika*
 John's expensive picture *expensive John's picture

- (16) *tall angry men* vs. *angry tall men*

Another argument, not noted by Corver, concerns the impossibility of modifying a SC prenominal possessive with adjectival morphology (*bratov* in (17)) by a possessive.¹⁰

- (17) **Moj bratov prijatelj spava.*
 my.nom brother's.nom friend.nom sleeps

This actually holds for adjectival modification of the possessives in question more generally, as shown in (18), which is not surprising given the claim that *moj* in (17) is an adjective. ((18) is acceptable only on the pragmatically implausible reading on which *bogati* modifies *konj* instead of *susedov*. A similar situation is found with multiple possessives.)

- (18) **bogati susedov konj*
 rich neighbor's horse

Assuming that an adjective cannot be modified by a possessive or, more generally, an adjective, (17)–(18) can be easily accounted for if SC possessives under consideration are indeed adjectives.

Based on the above arguments, following Corver (1992) I conclude all “D”s are As in SC. SC, and the same holds for other Slavic languages allowing LBE, does not project DP on top of NP.

Let us now examine LBE in SC in light of this conclusion. Consider (19).

- (19) *Lijepi*_i [_{VP} *t*_i [_{VP} [_V *gleda* [_{NP} *t*_i [_{NP} *kuće*]]]]].
 beautiful watches houses
 ‘Beautiful houses, he/she is watching.’

Given the absence of D, the problem that arises in English (1d) (cf. (6)) does not arise in SC (19): there is no D to project a minimality barrier. A question arises why V does not project a minimality barrier, i.e., why V’ isn’t a minimality barrier for the NP-adjoined trace. I assume that adjunction to XP voids the minimality barrierhood of X, i.e. when Y adjoins to XP, the head of X does not project a minimality barrier for the Y-chain (see Bošković 1992).

Why can’t adjunction to DP provide an escape hatch from the minimality effect of D in (1d), as in (20)?

- (20) **Beautiful*_i *he* [_{VP} *t*_i [_{VP} *saw* [_{DP} *t*_i [_{DP} [_D *D* [_{NP} *t*_i [_{NP} *houses*]]]]]]].

Chomsky’s (1986a) ban on adjunction to arguments provides an answer (for evidence for the ban, see Bošković 1997, 2004 c, McCloskey 1992, and Motapanyane 1994). Adjunction to DP in (20) is an instance of adjunction to an argument, hence disallowed. Is the ban on adjunction to arguments violated in SC (19)? The answer is no, if the ban is applied derivationally, i.e. at the point of adjunction. (Murasugi and Saito 1994 make the same proposal concerning the ban on adjunction to adjuncts). Following Takahashi’s (1994) approach to successive cyclicity, I assume movement of the AP in (19) does not start until the final target of the movement enters the structure.¹¹ At the point of adjunction, the relevant element is then not an argument in (19), in contrast to (20). More precisely, the object NP in (19) becomes an argument only when it merges with the V. However, adjunction to it occurs prior to this, hence it does not violate the derivational version of the ban on adjunction to arguments. On the other hand, under Takahashi’s view of successive-cyclic movement, adjunction to the object in (20) takes place after the object has been integrated into the clausal structure (recall

that the AP undergoes movement only after its target, located above IP, enters the structure, a point at which the direct object has already been merged with the verb). (20) then involves adjunction to an argument even under the derivational interpretation of the condition in question.

I now turn to additional data concerning LBE discussed in Bošković (2005), showing how they can be accounted for under a Corver-style analysis. Notice first that LBE out of a complement of a noun, which I will refer to as deep LBE, is disallowed (See (21b). See also Corver 1992 for Polish and Czech.)

(21) a. *On je vidio [NP [N' prijatelja [NP njegove majke]]].*
 he is seen friend his mother
 'He saw a friend of his mother.'

b. **Čije_i je on vidio [NP [N' prijatelja [NP t_i majke]]]?*
 whose is he seen friend mother
 'Whose mother did he see a friend of?'

(21b) can be accounted for in the same way as English (20). Like D in (20), the higher N in (21b) projects a minimality barrier (N') for the LBE trace. We could try to void the minimality effect by adjoining the possessive to the higher NP. However, the adjunction would involve adjunction to an argument for the same reason the adjunction of AP to the direct object DP does in (20).

Interestingly, deep LBE becomes much better if the lower NP is moved outside of the higher NP. True, (22) is still somewhat degraded, but the reason for this is that extraction of genitive complements of nouns is generally not fully acceptable in SC (see Zlatić 1994), as shown in (23). What is important for our current purposes is that (22) is clearly better than (21b) in spite of the marginality of genitive NP extraction. Notice also that moving the whole higher NP remnant of deep LBE in front of the verb does not improve (21b), as shown in (24).

(22) *(?)?Čije_i je on [NP t_i majke]_j vidio [NP prijatelja t_j]?*

(23) *(?)?On je [NP njegove majke]_j vidio [NP prijatelja t_j]?*

(24) **Čije_j je on [NP prijatelja [NP t_j majke]]_i vidio t_i?*

How can these facts be accounted for? The modified ECP analysis actually does not rule out (22), in contrast to (21b), since (22) does not have to in-

volve AP-adjunction to an argument, while (21b) does (to void the minimality effect).¹²

An obvious question that arises now is whether LBE and crosslinguistic variation regarding LBE can be accounted for without appealing to the ECP, given the well-known conceptual arguments against the ECP regarding the arbitrary nature of the notion of government. In section 3.1. I will present an updated locality account of LBE based on the current, phase-based approach to locality. Before doing that, I will examine an existing non-ECP account of LBE.¹³ I will eventually conclude that LBE can be accounted for without employing the ECP, thus contributing to the continuing attempt to eliminate the mechanism of government from the grammar.

2.2. Remnant AP fronting

Adopting Abney's (1987) NP-as-complement-of-A analysis, Franks and Progovac (1994) present a remnant AP fronting analysis of LBE.¹⁴ Under this analysis, traditional AP LBE actually involves remnant movement of the AP out of which the NP complement of A has moved.

- (25) $[_{AP} \text{Crveno } t_i]_j \text{ je on kupio } t_j [_{NP} \text{auto}]_i$.
 red is he bought car
 'He bought a red car.'

As noted in Bošković (2005), the analysis faces several problems. According to Franks and Progovac, the NP *auto* in (25) right adjoins to IP. However, if this were correct we would expect the NP always to follow the adjunct in constructions like (26)–(27), which is not the case.

- (26) *Crveno je on kupio auto prije tri dana.*
 red is he bought car before three days
 'He bought a red car three days ago.'

- (27) *?*Crveno je on kupio prije tri dana auto.*

The fact that the NP in question must precede the adjunct in (26)–(27) provides evidence against the rightward movement analysis. The alternative is to assume *auto* in (25) actually moves to the left, with remnant VP fronting (i.e. fronting of the VP out of which *auto* has moved) feeding remnant AP fronting, as a result of which *auto* ends up in a sentence final position in

spite of moving to the left.¹⁵ A problem with this analysis is that constructions in which an NP complement of A clearly undergoes leftward movement are degraded, as shown in (28). This indicates that NP movement out of AP, the crucial ingredient of the remnant AP movement analysis, is not fully acceptable in SC, a fact which invalidates the remnant AP movement analysis.¹⁶

- (28) ?**Kuće_i je on vidio lijepo t_i.*
 houses is he seen beautiful
 ‘He saw beautiful houses.’

Another problem with the remnant movement analysis is that it is not obvious how it can account for a very interesting fact concerning LBE illustrated in (29)–(30) for SC and (31) for Russian.¹⁷

- (29) a. *Visoke je on vidio djevojke.*
 tall is he seen girls
 ‘Tall girls, he saw.’

- b. *Lijepo je on vidio djevojke.*
 beautiful is he seen girls
 ‘Beautiful girls, he saw.’

- (30) a. **Visoke je on vidio lijepo djevojke.*
 b. **Lijepo je on vidio visoke djevojke.*

- (31) a. **Simpatičnye emu nravjatsja vysokie studenty.*
 good-looking he-dat likes tall students
 ‘He likes good-looking tall students.’

- b. *Simpatičnye emu nravjatsja studenty.*

Apparently, AP LBE is not possible in the presence of another AP (see, however, section 3.2.1.). I will refer to the construction in question as double AP LBE. (32) gives the structure of (30a) under the remnant AP movement analysis.

- (32) * $[_{AP} \text{Visoke } t_i]_j \text{ je on vidio } t_j [_{AP} \text{lijepo djevojke}]_i$.

To account for this type of construction, Franks and Progovac (1994) propose that AP cannot undergo the movement that feeds remnant AP fronting.

In other words, AP cannot move out of AP. The question is why. We could revive the A-over-A Principle (Chomsky 1964), which would block AP movement out of AP. However, the principle has a number of undesirable consequences. E.g., it rules out (33a-b), which involve movement of an NP out of an AP. I conclude therefore that the A-over-A Principle has to be eliminated from the grammar.

- (33) a. *Who_i did he see friends of t_i?*
 b. *John and Mary_i, he saw friends of t_i.*

Note also that although banning AP movement out of AP would suffice to account for (32), it does not say anything about (34), which does not involve AP movement out of AP.

- (34) **Visoke lijepe on gleda djevojke.*
 tall beautiful he watches girls
 'He is watching tall beautiful girls.'

Under the remnant AP movement analysis, (34) can be analyzed in essentially the same way as (25), namely, as involving NP movement out of AP, followed by remnant AP fronting (the higher AP would undergo the movement). It is not clear how this derivation can be ruled out.

The most serious problem for the Franks and Progovac (1994) account of the ban on double AP LBE is raised by constructions like (35).

- (35) a. *Novim_i je on [AP zadovaljan [t_i poslom]].*
 new is he content job
 'He is content with his new job.'
 b. *Hrabrim/svojem_i je on [AP vjerman [t_i vojnicima]].*
 brave/his is he loyal soldiers
 'He is loyal to brave/his soldiers.'

In (35), the adjective uncontroversially (i.e. under anybody's analysis) takes NP as its complement. Significantly, AP LBE from the NP complement of the adjective is possible. There seems to be no way of making a relevant distinction between (30) and (35) under the remnant AP movement analysis. Under this analysis, all the constructions in question involve a double AP LBE configuration, hence should be ruled out because they involve movement of an AP out of an AP (full AP movement out of AP in (30) and remnant AP movement out of AP in (35)), which is by hypothesis disallowed.

The problem is actually more general. It is difficult to see how one can make a principled distinction between (30) and (35) in Abney's system more generally, where the constructions in question have essentially the same structure in the relevant respects.

In addition to the problems noted above, it is not clear how several other properties of LBE can be captured under the remnant AP movement analysis. E.g., it is not clear how the relevance of the presence vs. absence of DP for LBE and the deep LBE data from section 2.1. can be captured under this analysis. The above discussion forces us to the conclusion that the remnant AP movement analysis cannot be maintained.

3. New analyses of LBE

3.1. The phase analysis

In this section I consider a phase-based implementation of the DP/NP analysis (cf. Bošković 2005), in which, as in the ECP analysis, locality plays the central role.¹⁸ As a preliminary attempt at a phase analysis, let us assume that DP, but not NP, is a phase, on a par with Chomsky's (1999) proposal concerning clausal phasehood that CP, but not IP, is a phase (see also Franks and Bošković 2001). Let us furthermore assume that D cannot have the escape hatch for successive-cyclic movement EPP feature. The assumptions seem to give us the desired result. Given the PIC, LBE out of DP in English is now ruled out.¹⁹ It is still allowed in SC, given that the traditional NP is indeed an NP in SC. The analysis is, however, too strong when it comes to English. It undergenerates in that it rules out all phrasal movement out of DP in English, including (36).

(36) *Who do you like* [_{DP} [_{NP} friends of t]]?

Consider now the following revision of the phase analysis. DP is a phase and can have the escape hatch EPP feature, just like CP, which means that *who* in (36) can move through SpecDP. (I continue assuming that NP is not a phase, which holds for both English and SC.) Suppose, however, that AP movement from the NP adjoined position to SpecDP is ruled out.²⁰ This can be achieved by adopting a version of Bošković's (1994, 1997) and Saito and Murasugi's (1999) condition on chain links given in (37), which rules out movement that does not cross an XP boundary (see also Fukui 1993 and Grewendorf and Sabel 1999).²¹

- (37) Each chain link must be at least of length 1, where a chain link from A to B is of length n if there are n XPs that dominate B but not A.

The reader is also referred to Abels (2003a,b) and Ishii (1999), where the relevant movement (movement from the position adjoined to the complement of X to SpecXP) is ruled out via economy because it is considered to be superfluous. More generally, according to these authors, when an element X is already located in the minimal domain of a head (see Chomsky 1993 for the definition of minimal domain) it cannot move to another position in the minimal domain of the same head, which is the case with the movement we are interested in, given that movement is a last resort operation driven by the need to create a local configuration between two elements.²²

A particularly strong case against movement that is too local is made in Grohmann (2000, 2003), who develops a full-blown theory of anti-locality which rules movement from X to Y if X and Y are too close.²³ He gives a host of empirical arguments for the anti-locality hypothesis and places it within a broader theoretical context, arguing it follows from Bare Output Conditions.

In short, given the above discussion, the AP is too close to move to SpecDP, movement illustrated in (38). Given the PIC, which rules out (39), this prevents AP extraction out of DP, while still allowing (36), which abstractly has the structure in (40).²⁴

- (38) $*[_{DP} AP_i [_{D'} D [_{NP} t_i [_{NP} \dots$

- (39) $*AP_i [_{DP} [_{D'} D [_{NP} t_i [_{NP} \dots$

- (40) $[_{DP} NP_i [_{D'} D [_{NP} [_{N'} [_{PP} t_i$

Turning now to SC (21)–(22), we can account for these data if we modify the assumption that NP is not a phase, i.e. if we assume that NP headed by a noun that takes a non-trace complement is a phase (see also Wurmbrand and Bobaljik 2003 for the claim that whether or not a phrase functions as a phase may depend on the structural environment in which it occurs, which means that some projections are phases only in certain contexts). The assumption immediately rules out (21b), repeated here, since the higher NP is a phase. Movement from the position adjoined to its complement is then ruled out by the PIC. (The AP (recall the possessive is actually an adject-

tive) cannot move to the higher SpecNP for the same reason it could not move to SpecDP in (38).)

- (41) **Čije_i je on vidio [NP prijatelja [NP t_i [NP majke]]]?*
 whose is he seen friend mother
 ‘Whose mother did he see a friend of?’

What about (22)? The improved status of (22) can be accounted for given Chomsky’s (1999) proposal that locality and the PIC are evaluated at the next phase level, which admittedly involves some look-ahead. Given this assumption, no problems arise with movement of the lower NP out of the NP in object position since at the point of evaluation, the object N does take a trace complement, hence its maximal projection is not a phase.

- (42) *(?)?Čije_i je on [NP t_i [NP majke]]_j vidio [NP prijatelja t_j]*?

Notice also that LBE out of traditional A-taking-NP-as-complement constructions like (35) is readily accounted for given that AP is not a phase. ((35a) is repeated here as (43).)

- (43) *Novim_i je on [AP zadovaljan [NP t_i [NP poslom]]].*
 new is he content job
 ‘He is content with his new job.’

Finally, (34) is also straightforwardly accounted for. The APs cannot be moved together since under the current analysis they do not form a constituent (in contrast to the remnant movement analysis). I assume that if APs undergo separate LBEs, the example is ruled out as a relativized minimality violation since an AP would move over an AP. (I return to double AP LBE below.)

The phase analysis thus accounts for the full LBE paradigm. I conclude, therefore, that it is possible to account for LBE under the DP/NP analysis without appealing to the ECP. Recall, however, that the main motivation for the minimalist drive to eliminate the ECP and, more generally, the notion of government is the powerful nature and arbitrariness of the mechanisms in question. Given the assumptions we were led to adopt above, the phase analysis is starting to look almost as arbitrary as the ECP analysis.²⁵ While the complexity of the data to account for may justify the theoretical complications (i.e. appeal to some arbitrary assumptions), in accordance with

the minimalist drive to eliminate arbitrariness from the grammar, in the next section I discuss an alternative DP/NP analysis which does not employ either the ECP or phases (cf. Bošković 2005). While the analysis is more principled (i.e. it relies on fewer arbitrary assumptions) than either the ECP or the phase analysis, it is, however, based on a rather radical proposal concerning crosslinguistic variation regarding the structure of the traditional NP which will hopefully be confirmed by future work.²⁶

3.2. The AP/NP analysis

There is a great deal of controversy concerning the position of AP within the traditional NP, which was brought about by the DP Hypothesis. The long-standing assumption has been that AP is dominated by NP. However, Abney (1987) argues AP actually dominates NP. More precisely, A takes NP as its complement. A great deal of effort has been spent in the literature trying to determine which of the two analyses is correct. I would like to suggest they are both correct, but for different languages. In particular, I suggest that in English, A indeed takes NP as a complement (the AP-over-NP pattern), as Abney argued. In SC, on the other hand, N takes AP as its Spec. (Assuming AP is adjoined to NP would also work. I will refer to the SC pattern as the NP-over-AP pattern.)²⁷ The presence/absence of DP determines which pattern a language will exhibit, DP languages exhibiting the AP-over-NP pattern and NP languages the NP-over-AP pattern. I assume that the AP-over-NP pattern is the default, i.e. it is specified as the canonical option in UG. Why is it that NP languages have to switch to the NP-over-AP pattern? To account for this, I make what seems to me to be a rather natural assumption, namely, that AP cannot be an argument (see also Stowell 1991: 209–210). In English-type languages, the assumption has no relevant consequences, since DP always dominates AP. However, this is not the case in SC-type languages, where, due to the lack of DP, AP would end up functioning as an argument if the AP-over-NP pattern were employed. It follows then that whenever DP is lacking in a language, NP has to cover AP, i.e. the NP-over-AP pattern has to be employed. We thus deduce the dependence of the AP-over-NP/NP-over-AP patterns on the presence/absence of DP in a language.

Let us now instantiate the proposed analysis with respect to an actual example. Suppose we want to merge *big* and *cars*. The question is which element will project. Given Chomsky's (1999) proposal that even pure

Merge is subject to Last Resort (see also Bošković 2002a and Hornstein 2001), either *big* or *cars* has the relevant selectional feature. In English it is *big*, and in SC *cars*.²⁸ The relevant difference between English and SC is thus instantiated in lexical terms, in line with the current research effort to reduce crosslinguistic variation to lexical differences.

The AP/NP analysis gives us the most principled account of the impossibility of AP LBE in English. The extraction is not possible because it would involve extraction of a non-constituent (the AP is not a constituent to the exclusion of the NP in English, as shown in (44).) The non-constituency problem does not arise in SC, where the NP dominates AP (see (45)).

(44) [_{DP} D [_{AP} Adj [_{NP} N]]]

(45) [_{NP} AP N]

The different behavior of English and SC with respect to AP LBE, as well as the relevance of DP for AP LBE, are thus straightforwardly accounted for. In fact, the AP/NP analysis provides us with a more principled account of the different behavior of English and SC in the relevant respect than the alternative analyses discussed above, given the overwhelming independent support for the crucial assumption that only constituents can undergo movement.

Independent evidence for the A/N difference in the headedness of the traditional NP in English and SC would provide particularly strong evidence for the AP/NP analysis of AP LBE. There actually is independent evidence to this effect.

A strong argument for A headedness of English NP, noted by Abney (1987), concerns (46).

(46) *too big of a house*

The adjective appears to be assigning genitive Case to the following NP in (46), which is realized through *of*-insertion (see Chomsky 1986b on genitive Case-licensing), in accordance with the-A-taking-NP-as-complement analysis. On the other hand, in SC *A* *always* agrees in Case with the noun, which gets its Case externally from outside of the traditional NP, indicating a Spec-Head Agreement configuration, in accordance with the N-as-the-head analysis.

Another argument regarding Case concerns the following contrast between English and SC.

- (47) *The real him/*he will never surface.*
- (48) a. *Pravi on/*njega se nikad neće pojaviti.*
 real he.nom/him.acc refl never neg+will show-up
 ‘The real him will never show-up.’
- b. *Vidjeli smo pravog njega/*on.*
 seen are real him.acc/he.nom
 ‘We saw the real him.’

Where overt Case morphology appears in English, as in (47), we can see that prenominal adjectives disrupt Case assignment (the pronoun bears (likely) default accusative instead of the expected nominative), which can be more straightforwardly accounted for under Abney’s analysis, where the A can shield the pronoun from outside case assignment as an intervening head. As (48) shows, SC differs from English in the relevant respect, suggesting Abney’s analysis should not be applied to SC. Notice also that the case of the pronoun in SC changes in an accusative environment (see (48b)), which indicates that we are not dealing with a default case in the SC construction under consideration (i.e., a pronoun following an adjective does not bear a default case in SC. Notice also that the unacceptable variants of (48a–b) remain unacceptable even if we use the agreeing adjectival forms (*pravog njega* in (48a) and *pravi on* in (48b).)²⁹

Consider now the following ellipsis data.

- (49) **I hate political problems, but I hate social even more.*
- (50) **Je déteste les problèmes politiques, mais je déteste les sociaux*
 I hate the problems political but I hate the social
 encore plus. [French]
 even more
- (51) *Ja mrzim političke probleme, a socijalne mrzim još više.* [SC]
 I hate political problems but social (I) hate even more

Under Abney’s analysis, the impossibility of eliding a noun modified by an adjective in English (49) and French (50) can be interpreted as indicating that A cannot license the ellipsis of its complement NP.³⁰ The contrast between English and French (49) and (50) and SC (51) then provides evidence against the A-as-the-head analysis of SC.³¹ Notice also that, as the following

examples from Valois (1991) show, NP ellipsis in English can take place in the presence of NP-adjuncts, in contrast to adjectival modifiers.

- (52) a. *I like John's pictures from three years ago, and I also like Bill's from last year.*
 b. *I like John's picture by this photographer, and I also like Bill's by his sister.*

This fact provides strong evidence for the AP/NP analysis, which treats SC adjectival modifiers and NP-adjuncts in English in essentially the same way – they are both covered by NP, exhibiting the NP-over-AP/adjunct pattern (recall that the NP-over-AP pattern can be instantiated by either locating adjectives in SpecNP or by adjoining them to NP), but differently from adjectives in English, which exhibit the AP-over-NP pattern, i.e. they are not covered by NP.

Abney (1987: 333) observes that in English, prenominal adjectives can determine the type of the noun phrase in a way that postnominal adjectives cannot, which follows if prenominal adjectives actually head the NP. To illustrate this, consider the contrast in (53).

- (53) a. *I've known a dog smarter than Fido.*
 b. *??I've known a smarter dog than Fido.*

When not embedded under a modal or a negative element, *know* selects non-predicative noun phrase as its object (see Bresnan 1973). The predicative nature of the prenominal comparative “percolates” to the noun phrase, in contrast to the postnominal comparative. Given that determining the features of the enclosing phrase is a property typical of heads, it follows that in English, prenominal A heads the “NP”. Significantly, SC contrasts with English in the relevant respect.

- (54) a. *Znao sam pametnijeg psa od Fida.*
 known am smarter dog than Fido
 ‘I’ve known a dog smarter than Fido.’
 b. *Znao sam psa pametnijeg od Fida.*

Given Abney’s reasoning, these data should be interpreted as indicating that, in contrast to English, the prenominal A does not head the “NP” in SC.

The data thus provide additional evidence for the NP-over-AP analysis for SC.³²

Abney (1987: 340) observes that superlatives must precede descriptive adjectives in English. (Comparatives behave like superlatives in the relevant respect.)

- (55) a. *the big fancy car*
b. **the big fanciest car*
c. *the fanciest big car*

Abney gives a selection-based analysis of these data: The superlative takes AP as its complement, not the other way round. (Note that under Abney's analysis, multiple AP constructions involve A's taking APs as complements.) Significantly, SC differs from English in the relevant respect.

- (56) a. ?*velika najskuplja kola*
big most-expensive car
b. *najskuplja velika kola*

Given Abney's analysis of the English data, the contrast can be accounted for if no complementation relation is involved between the relevant elements in SC. (Note that under the NP-over-AP analysis, multiple APs are located in multiple specifiers of NP.)³³

Admittedly, some of the arguments for the different behavior of English and SC regarding the position of AP are not very deep and/or are based on phenomena that are ill understood. However, the sheer number of arguments (more precisely, the fact that arguments for the A-as-the-head analysis of English routinely fail in SC, where the data are exactly opposite of what is predicted by this analysis) provides evidence that the AP/NP analysis is on the right track. Probably the strongest argument for different behavior of English and SC-type languages in the relevant respect comes from certain data regarding the ban on double AP LBE, which I have left unexplained so far. (The argument concerns a contrast between SC and Bulgarian, an English-type language.) I turn to it in the next section.

3.2.1. *Double adjective LBE*

Recall that, as shown in (30) ((30b) is repeated in (57)), adjectival LBE in multiple A-as-a-modifier constructions (i.e. double AP LBE) is disallowed, in contrast to simple adjectival LBE, as in (29), and adjectival LBE in A-as-the-head constructions, as in (35).

- (57) **Lijepa je on vidio visoke djevojke.*
 beautiful is he seen tall girls
 ‘He saw beautiful tall girls.’

In this section I provide an explanation for the impossibility of double AP LBE. I will continue to assume the NP-over-AP pattern for SC-type languages, instantiated through a multiple specifiers structure, as illustrated in (58).³⁴

- (58) [_{NP} AP [AP [_{N'} N]]]

To account for the ban on double AP LBE, I appeal to McGinnis’s (1998a,b) Principle of Lethal Ambiguity, which says that two elements equidistant from a target K are lethally ambiguous for attraction by K if they are featurally non-distinct.³⁵ Since multiple Specs of the same head are equidistant (see McGinnis 1998a,b), given the structure in (58), (57) involves Lethal Ambiguity.³⁶ Neither AP can then be attracted from outside of the NP in (57). The impossibility of double adjective LBE is thus accounted for. (The reader can verify that the account of (57) readily extends to **lijepa je on visoke djevojke vidio* and **lijepa je on visoke vidio djevojke.*)

Interestingly, (57) improves significantly if *lijepa* is contrastively focused (bearing strong contrastive stress), as in the following context:

- (59) A: *I think that Marko said he saw ugly tall girls.*
 B: *Ma, ne, lijepa je on vidio visoke djevojke, ne ružne.*
 no beautiful is he seen tall girls not ugly

This is not surprising under the Lethal Ambiguity account. In the derivation in question, *lijepa* undergoes focus movement (SC is a focus-movement language, see Bošković 2002b and Stjepanović 1999), which means it bears the [+focus] feature. It is plausible that this feature makes it featurally distinct from *visoke*, which is not contrastively focused. Since Lethal Ambiguity

holds only for featurally non-distinct elements, this makes Lethal Ambiguity irrelevant to the derivation of (57) under consideration. (Below, for ease of exposition I will disregard the focus-movement derivation.)

Notice that double AP LBE is also possible when a wh-phrase is involved.

- (60) *Koje je Petar novo auto upropastio?*
 which is Petar new car ruined
 ‘Which new car did Peter ruin?’

This is expected under the current analysis, since the [+wh] feature makes the fronted adjective featurally distinct from the non-fronted adjective, just like the [+focus] feature does in (59), making Lethal Ambiguity irrelevant. In fact, given the claim made in Bošković (2002b) and Stjepanović (1999) that SC wh-phrases may undergo focus movement rather than wh-movement (in the context in question), (60) may be another instance of the saving effect of focus on double AP LBE, hence accountable in exactly the same way as (59).

It is also worth noting that the contrast between (59), where the adjective that is left-branch extracted undergoes focus movement, and (57), where the adjective that is left-branch extracted undergoes scrambling, can be interpreted as providing evidence that, as argued by Saito (1994) and Saito and Fukui (1998), scrambling is not driven by feature checking, i.e. checking of some kind of a scrambling feature (see, e.g., Grewendorf and Sabel 1999, Kitahara 1997, Müller 1997, Sabel this volume, and Sauerland 1999 for scrambling-feature checking).³⁷ If it were, the scrambling feature should make the adjectives in (57) featurally non-distinct, which would render Lethal Ambiguity irrelevant in (57), on a par with (59).

Notice also that (35), which was difficult to differentiate from (57) under Abney’s analysis of the structural position of AP, is readily accounted for since the APs are not equidistant in (35) (see Chomsky 1995 for definitions of equidistance). ((61) gives the relevant part of (35).)

- (61) [_{AP} [_A A [_{NP} AP [_N N]]]]

The proposed analysis thus accounts for the surprising contrast between (57) and (35). Crucial to the account was adoption of the traditional NP-over-AP structure for AP modification in SC, which provides strong evidence for the NP-over-AP analysis of adjectival modification, at least for

SC. Another crucial aspect of the analysis was placing the adjectives in (57) in multiple specifiers of the *same* head. The analysis thus also provides evidence for this approach to adjectival modification.³⁸

Since the AP-over-NP structure for AP modification does not involve Lethal Ambiguity (in fact, the AP-over-NP analysis assigns the same structure to traditional AP modification and A-as-the-head structures, i.e. both have the structure in (61)), the prediction is that in AP-over-NP languages, the presence of another adjective would not prevent an adjective from undergoing movement, in contrast to SC-type languages (i.e. NP-over-AP languages), where multiple adjectival modification gives rise to a Lethal Ambiguity configuration, freezing the adjectives in place. The prediction bearing out would provide strong evidence for the AP/NP analysis. However, the prediction seems to be untestable, since adjectives appear to be immobile in AP-over-NP languages for independent reasons. Thus, they cannot undergo LBE outside of the traditional NP for reasons discussed above. Fortunately, there is one construction where the prediction can be tested. The construction involves DP internal movement of adjectives in Bulgarian, an AP-over-NP language, as illustrated in (62).

- (62) *xubavi_i te t_i momičeta*
 beautiful the girls
 ‘the beautiful girls’

Arnaudova (1996, 1998), who applies Abney’s DP/AP-over-NP analysis to Bulgarian, analyzes (62) as involving A movement to D.³⁹ What we are interested in is what happens in double AP examples. Recall that in SC, adjectives in such examples are equidistant from the target of movement, hence immobile, given Lethal Ambiguity. This is not the case in Bulgarian, an AP-over-NP language. Significantly, an adjective can undergo movement in the Bulgarian construction in question even in the presence of another adjective, which provides a confirmation of the current analysis.

- (63) *xubavi_i te t_i visoki momičeta*
 beautiful the tall girls
 ‘the beautiful tall girls’

Recall that Bulgarian, which does not allow LBE, patterns with English with respect to the structure of NP, more precisely, DP in the languages in question. As a result, (63) does not involve Lethal Ambiguity. The fact that the AP/NP analysis provides us with a principled account of the contrast be-

tween SC and Bulgarian with respect to the mobility of an adjective in the presence of another adjective, as well as the SC internal contrast with respect to the mobility of an adjective in the presence of another adjective between traditional adjectival modification and traditional adjective-as-the-head structures, provides strong evidence for the AP/NP analysis.

To summarize the discussion so far, I have considered several accounts of crosslinguistic variation regarding LBE. The most principled account is provided by the AP/NP analysis, on which the ban on LBE in English-type languages follows from the ban on movement of non-constituents, a problem that does not arise in SC-type languages, where LBE does not involve non-constituent movement. When it comes to the position of adjectives in the traditional NP, we have seen that there is evidence for crosslinguistic variation in the relevant respect, some languages having the NP-over-AP structure, others having the AP-over-NP structure. Which structure a language will have depends on the presence/absence of DP in it, the lack of DP leading to the NP-over-AP structure. Obviously, I was not able to deal with all the issues concerning the structure of NP within the confines of this paper. In fact, at our present level of understanding, whichever analysis one takes with respect to the issue of the structural status of NP/AP/DP within the traditional NP for any given language, a host of open questions will inevitably remain. I hope to return to some of them in future work.

3.4. The scrambling analysis

In this section, I explore an alternative to the DP/NP analysis of LBE. The alternative is based on the conjecture that the right way to divide LBE and non-LBE languages does not depend on the presence/absence of DP, but the possibility of scrambling. More precisely, whether or not a language allows LBE depends on whether or not it allows scrambling, only scrambling languages allowing it.⁴⁰ In this respect, note that Slavic languages that allow LBE, such as Russian, SC, Polish, and Czech, are all scrambling languages. Regarding Bulgarian, which disallows LBE, although Bulgarian displays some freedom of word order, its word order is noticeably more rigid than in SC, a closely related language, which I interpret as indicating Bulgarian has no scrambling. As for Romance, modern Romance languages do not have scrambling and disallow LBE. Latin, on the other hand, had scrambling and allowed LBE. English is another example of a non-scrambling language disallowing LBE.⁴¹

In tying scrambling and LBE I am essentially going back to Hale's (1983) observation that discontinuous constituency is a property of scrambling languages, given that examples of discontinuous constituency often involve LBE. The LBE/scrambling correlation can be easily captured under base-generation analyses of scrambling such as Bošković and Takahashi (1998) (BT), which base-generates "scrambled" elements in their surface non- θ -positions and moves them to their θ -positions in LF, θ -theoretic considerations driving the movement (see Fanselow 2001 for another base-generation analysis). Before showing how the LBE/scrambling correlation can be captured under BT's analysis, in the next section I briefly summarize it.

3.4.1. *Bošković and Takahashi's analysis of scrambling*

BT's analysis of scrambling was intended to address certain problems that arise under the classical analysis of Japanese scrambling, which considers scrambling in Japanese to be an optional overt movement operation that applies for no reason at all (see, e.g., Fukui 1993, Saito 1992, 1994, and Saito and Fukui 1998). In minimalist terms, the scrambling movement of *sono hon-o* in (64) does not involve any feature checking, which raises an obvious problem for Chomsky's (1986b, 1995) conception of movement as a last resort operation, applying only when necessary.

- (64) $[_{IP} \text{Sono hon-}o_i \ [_{IP} \text{John-ga} \ [_{CP} [_{IP} \text{Mary-ga} \ [_{VP} t_i \text{katta}]] \text{to}]] \text{omotteiru}]$
 that book-ACC John-NOM Mary-NOM bought that thinks
 'That book, John thinks that Mary bought.'

BT propose an analysis of scrambling that replaces the optional overt movement of the classical account that violates Last Resort with an obligatory LF movement that conforms with Last Resort. They propose the scrambled element in (64) is base-generated in its SS position. If it were to remain there in LF the derivation would crash because *sono hon-o* would not be Case- and θ -licensed. *Sono hon-o* therefore lowers in LF to a position where it can receive Case and a θ -role. The movement is obligatory in the sense that if it does not take place, the derivation would crash.⁴²

- (65) a. SS: $[_{IP} \text{Sono hon-}o \ [_{IP} \text{John-ga} \ [_{CP} [_{IP} \text{Mary-ga} \ [_{VP} \text{katta}]] \text{to}]] \text{omotteiru}]$
 b. LF: $[_{IP} \text{John-ga} \ [_{CP} [_{IP} \text{Mary-ga} \ [_{VP} \text{sono hon-}o \text{katta}]] \text{to}]] \text{omotteiru}]$

BT give a number of arguments for this analysis. Thus, the analysis explains the otherwise puzzling undoing property of scrambling (radical reconstruc-

tion in Saito's terms; for relevant discussion, see Saito 1992 and Tada 1993, Miyagawa this vol., among others). Consider (66), where *daremo-ni* must have narrow scope. (I indicate the position where *daremo-ni* is interpreted with *e*. Under BT's analysis, this is the landing site of LF lowering, whereas under the classical analysis this is the launching site of overt movement.)

- (66) *Daremo-ni dareka-ga [Mary-ga e atta to] omotteiru.* $\exists > \forall; * \forall > \exists$
 everyone-DAT someone-NOM Mary-NOM met that thinks
 'Everyone, someone thinks that Mary met.' (Bošković and Takahashi 1998)

Why can't the scrambled element take scope in its SS position? The puzzling fact is immediately explained under BT's analysis: *daremo-ni* must lower in LF to the position where it is θ - (and Case) marked. Since it necessarily lowers into the embedded clause, it cannot scope over *dareka-ga*.

It is worth noting here that the undoing effect provides strong evidence against attempts to analyze scrambling as focus or topic movement (see, e.g., Bailyn 2001, Miyagawa 1997, and note 37). What the undoing effect shows is that semantics does not "know" about scrambling (at least long-distance scrambling, which is what we are concerned with here), i.e. for semantics, scrambling does not exist. Now, if scrambling were focus movement, we would be dealing here with focus movement that semantics does not know about. This raises an obvious problem that has to be addressed by the focus movement analysis.⁴³ Until the problem is addressed in a satisfactory manner, it is difficult to see the focus movement analysis as a viable alternative.

Returning to BT, among other things, BT's analysis also accounts for the inability of adjuncts to undergo scrambling, illustrated by Saito's (1985) (67). (Following BT, I ignore quasi-argument adjuncts, which Murasugi 1991 argues are actually arguments, and short-distance scrambling of adjuncts, since in the latter case it is not clear whether we are dealing with scrambling or with base-generation even under the overt movement analysis of scrambling.)

- (67) a. *Mary-ga [John-ga riyuu-mo naku sono setu-o*
 Mary-NOM John-NOM reason-even without that theory-ACC
sinziteiru to] omotteiru.
 believes that thinks
 'Mary thinks that John believes in that theory without any reason'
- b. **Riyuu-mo naku Mary-ga [John-ga e sono setu-o sinziteiru to]*
omotteiru.

Under the assumption that scrambling is an optional movement operation applying without any driving force, the ungrammaticality of (67b) on the relevant reading is puzzling. Why is it that, in contrast to arguments, adjuncts cannot scramble? Under the BT analysis, the puzzling fact is readily explained. Under this analysis, the adjunct is base-generated in its SS position in (67b) and must lower to the embedded clause in LF to modify the embedded predicate. Note, however, that the adjunct is fully licensed in its SS position. In contrast to *sono hon-o* in (64), which has Case and θ -features that are not licensed in its base-generated, SS position, the adjunct in (67b) possess neither a Case feature nor a θ -role that could motivate its LF movement. Since there is no reason for the adjunct to lower into the embedded clause in LF Last Resort prevents it from moving.

There are actually exceptions to the impossibility of adjunct-scrambling. Thus, the adjuncts in (68)–(69) can undergo scrambling. (The contrast between (67b) and (68) was noted by Mamoru Saito (p.c.).)

- (68) *?Naze Mary-ga [CP e John-ga sono setu-o sinziteiru ka] sitteiru.*
 why Mary-NOM John-NOM that theory-ACC believes Q knows
 ‘Mary knows why John believes in that theory.’

(Bošković and Takahashi 1998)

- (69) *Kyuuni-sika Mary-ga [CP John-ga e nakidasa-nak-atta to] itta.*
 suddenly-NPI Mary-NOM John-NOM start-to-cry-neg-past that said
 ‘Mary said that John only suddenly started crying.’

(Boeckx and Sugisaki 1999)

Note that the adjunct in (68) has a [+wh]-feature that can be licensed only in the embedded SpecCP and the adjunct in (69) is a negative polarity item (NPI), whose licensing negation is located in the embedded clause. The correct descriptive generalization concerning scrambling of adjuncts is that adjuncts can undergo scrambling iff there is a formal requirement on them that can be satisfied only in a lower clause. The generalization immediately follows under the BT analysis: the formal requirement is necessary to drive LF lowering. Thus, in contrast to the adjunct in (67b), the adjuncts in (68)–(69) do have a formal feature that cannot be checked in their base-generated, SS position, namely the +wh and the NPI feature. The adjuncts in (68)–(69) have to lower into the embedded clause to check these features. BT’s analysis thus accounts both for the contrast between arguments and non-wh/non-NPI adjuncts as well as the contrast between wh- and NPI-

adjuncts and non-wh/non-NPI adjuncts with respect to scrambling, both of which remain unaccounted for under the standard analysis. More generally, the BT analysis straightforwardly captures the otherwise mysterious generalization that a phrase that undergoes scrambling (be it an argument or an adjunct) must have a formal requirement that can be satisfied only in a lower position.

As discussed by BT, the LF lowering analysis captures several additional otherwise puzzling properties of Japanese scrambling. Among other things, it accounts for the fact that movement out of scrambled elements is possible although extraction out of heads of non-trivial chains is otherwise disallowed (cf. Takahashi 1994 and Ormazabal et al. 1994), the fact that LF scrambling is disallowed, and a surprising failure of numeral float in certain constructions where radical reconstruction is blocked by independent factors (more precisely, the fact that a short-distance scrambled element that floats a numeral cannot bind an anaphor). Oku (1998a,b) shows that BT's analysis also explains why Japanese freely allows argument drop in spite of the absence of standard subject and object agreement.

3.4.2. Scrambling and LBE

Returning to LBE, let us consider how the LBE/scrambling correlation can be captured under BT's analysis, which base-generates "scrambled" elements in their surface non- θ -positions and moves them to their θ -positions in LF, θ -theoretic considerations driving the movement (see also Bošković 2002c for an analysis along these lines for discontinuous constituents in Old English, which are shown to be subject to θ -restrictions that are easily explained under BT's analysis). Given Higginbotham's (1985) θ -identification analysis of adjectives (see also his autonomous θ -marking), on which an adjective and a noun it modifies enter into a θ -relation, adjectives can also move in LF for θ -theoretic reasons. Under BT's analysis, the LBE example *Visoke on gleda djevojke* would then have the SS in (70), with no relevant overt movement taking place. The adjective then undergoes lowering in LF to the position where it is interpreted (71), θ -considerations (more precisely, θ -identification) driving the movement. (Depending on how the θ -requirement on A/N combinations is precisely stated it is actually possible that the noun would move in LF to the adjective, instead of the adjective moving to the noun, in which case the LF of (70) would be *Visoke djevojke on gleda*. I ignore this possibility below.)

(70) SS: *Visoke on gleda djevojke.*
 tall he watches girls

(71) LF: *On gleda visoke djevojke.*

BT's analysis of scrambling, based on LF movement driven by θ -theoretic considerations, thus provides a straightforward way of capturing AP LBE, given Higginbotham's θ -identification analysis of adjectives.⁴⁴ LBE of determiners can also be easily captured, given Higginbotham's θ -binding analysis of determiners, on which a determiner and its noun enter into a θ -relation. θ -motivation behind LF assembling of elements affected by LBE is also straightforward in the case of possessives.

Turning to deep LBE, from the perspective of the scrambling analysis (21b) can be accounted for by appealing to economy, i.e. by assuming the adjective lowers to the closest noun with which it can undergo θ -identification. More precisely, I assume that if an adjective can undergo θ -identification within NP1 with N1, it is not allowed to look deeper into NP1 for another N to undergo θ -identification with.⁴⁵ From this perspective, the improved status of (22) also follows since the problem that arises in (21b) does not arise in (22). As for the ban on double AP LBE, the Lethal Ambiguity account of the ban can be maintained under the analysis of LBE presented in this section if we assume a version of Chomsky's (1995: 356–357) approach to equidistance, on which an element that is in the minimal domain of a head (*visoke* in (57), the head being *djevojke*) would essentially count as equidistant with an element that is moving to the minimal domain of the same head (*lijepe* in (57)).

Notice now that under BT's analysis we simply need a formal reason to place the scrambled element in LF in the position where it is interpreted. Strictly speaking, the reason does not have to be θ -related. E.g., licensing the agreement relation between the adjective and the noun could also plausibly drive LF movement of the adjective. In this respect, note that in SC, the adjective and the noun agree in case and ϕ -features (gender and number). Some evidence that this version of the BT analysis, which does not depend on Higginbotham's view of θ -relations within NP (i.e. on assuming a θ -relation between adjectives and nouns; see note 47), may be on the right track is provided by discontinuous constituents from Warlpiri. Consider (72)–(73).

(72) *kurdu- jarra- rlu ka- pala maliki wajilipi- nyi wita- jarra- rlu.*
 child dual erg pres dual dog chase nonpast small dual erg
 ‘The two small children are chasing a dog.’

(73) *maliki ka- pala wajilipi- nyi kurdu wita- jarra- rlu.*
 dog pres dual chase nonpast child small dual erg
 (Hale 1981)

The two small children is discontinuous in (72), but not in (73). Only in (72), both parts of the split NP must have the number and case endings. On the analysis under consideration, we can account for the paradigm by assuming that the number/Case agreement is in principle optional in Warlpiri. However, it is forced in (72), where it is needed to drive LF assembling of the split NP under BT’s analysis. The current analysis thus explains why we find more morphology (i.e. richer agreement) when a noun and an adjective that modifies it are discontinuous than when they are not.

Particularly illuminating in this respect are SC (74)-(75), which also exhibit the richer-agreement-when-separated pattern that receives a straightforward account under the current analysis.

(74) a. *Čičinu je on Tominu kolibu*
 uncle’s(fem.acc.sg) is he Tom’s(fem.acc.sg) cabin(fem.acc.sg)
 srušio.
 torn-down
 ‘He tore down uncle Tom’s cabin.’

b. **Čiča je on Tominu kolibu*
 uncle(masc.nom.sg) is he Tom’s(fem.acc.sg) cabin(fem.acc.sg)
 srušio.
 torn-down

(75) a. **On je srušio čičinu Tominu kolibu.*
 b. *On je srušio čiča Tominu kolibu.*

(74) shows that the split of *uncle* and *Tom* is possible only when *uncle* and *Tom* (and *cabin*) agree in Case and ϕ -features, although when the split does not take place, *uncle* and *Tom* cannot agree, as illustrated in (75).⁴⁶ The agreement pattern in (74) is not surprising under the analysis suggested above, where the agreement is necessary to drive LF lowering of *uncle*.

It is worth noting that under the agreement analysis, Japanese is not expected to allow LBE since it lacks adjectival agreement. In fact, assuming an extension to APs of the different treatment of NPs in scrambling and non-scrambling languages proposed below, which seems straightforward,⁴⁷ under the agreement analysis we would expect to find adjectival LBE only in scrambling languages in which adjectives agree (though not necessarily in all of them, see the discussion below (76)).

3.4.3. *Scrambling and the categorial status of Noun Phrases*

Let's see where we are now. So far, we have established two generalizations regarding LBE:

- (76) a. Only scrambling languages may allow LBE.
 b. Only non-DP (i.e. NP) languages may allow LBE.

Under the scrambling analysis, the fact that the LBE/NP correlation (76b) holds for the languages considered may be an accident, and the same may hold for the DP/NP analysis regarding the LBE/scrambling correlation (76a). To tease apart the two analyses, we need to look for LBE languages that have scrambling and DP, or LBE languages that do not have either scrambling or DP. I emphasize here that non-LBE languages do not provide a conclusive test since interfering factors may prevent LBE even in the absence of DP and the presence of scrambling (see note 4. E.g., the presence of a possessive affix that is not syntactically generated on the possessor can ban LBE of possessives.) However, we would not have to consider one of the two correlations under consideration (the LBE/NP correlation and the LBE/scrambling correlation) an accident if we can establish an NP/scrambling correlation, where the presence of DP would correlate with the lack of scrambling, more precisely, where the lack of DP would be a prerequisite for scrambling. LBE, scrambling, and the categorial status of the traditional NP would then all be correlated. This option seems inherently more interesting than its alternative. In the absence of clear evidence to the contrary, I therefore posit the generalization in (77).⁴⁸

- (77) Scrambling Generalization 1: The scrambling/NP correlation
 Only NP languages may allow scrambling. (+scrambling → -D)

Given (77), the presence of DP implies the impossibility of scrambling. In other words, scrambling languages do not have DP. (Note that we are not dealing here with a two-way correlation.) Can the generalization be deduced from independent assumptions?

Under BT's analysis, (77) entails that DPs, but not necessarily NPs, must establish a θ -relation as soon as possible, i.e. in overt syntax. This can be ensured given certain assumptions regarding lexical insertion and Last Resort. Chomsky (1995) assumes no aspect of lexical insertion, including pure Merge, is subject to Last Resort. On the other hand, Chomsky (2000) suggests pure Merge is subject to Last Resort, an assumption that leads to a considerable enrichment of the theory of selection. In Bošković (1997: 37–39) I take a position that falls in between these two positions, namely, I suggest only pure Merge of functional elements is subject to Last Resort.⁴⁹ There are a number of appeals to economy of representation principles intended to ban unnecessary projections (see, e.g., Bošković 1997, Chomsky 1995, Franks 2000, Grimshaw 1993, Radford 1995, Safir 1993, and Speas 1994). Interestingly, they are all in actual practice applied only to functional elements, i.e. they are used to ban only unnecessary functional structure. We can make this “accident” more principled by taking my (1997) position that only pure Merge of functional elements is subject to Last Resort. Let us assume then that functional heads are indeed merged into the structure only if there is a reason for it. As discussed in Bošković (1997), the functional/lexical category distinction makes sense given that lexical elements determine what we want or choose to say, and functional elements merely help us build legitimate grammatical structures. In Bošković (1997) I appeal to the natural assumption that the latter (building legitimate grammatical structures), but not the former (what we want or choose to say), is subject to economy principles to justify subjecting only pure Merge of functional elements to Last Resort. Functional elements are then inserted into the structure only to the extent that they are necessary to build legitimate structures.⁵⁰ Another way to approach the issue at hand would be to assume that only functional categories are selected, a natural consequence of which would be to require only pure Merge of functional elements to be motivated by selectional requirements. The upshot of the above discussion is that pure Merge of a functional projection, but not pure Merge of a lexical projection, must have independent motivation. Given that the traditional NP is DP in non-scrambling languages, and NP in scrambling languages, pure-merging the traditional NP with X, with X projecting, will have to have independent motivation in non-scrambling, but not in scrambling languages. Since

scrambling is pure Merge under the BT analysis (see Saito 1994 and Saito and Fukui 1998 for a different perspective on this assumption), we thus derive the costlessness aspect of scrambling and capture the scrambling/NP correlation, deducing generalization (77). To illustrate (assuming scrambling involves non-feature checking adjunction to IP), a DP (traditional NP in non-scrambling languages) cannot be pure-Merged adjoined to IP without violating Last Resort, while an NP (traditional NP in scrambling languages) can be. A DP can still be pure-Merged in its θ -position given that such merger involves θ -feature checking.⁵¹ I conclude, therefore, that the correlation between the absence of DP and the availability of scrambling can be accounted for under the BT analysis of scrambling if pure Merge of functional, but not lexical elements, is subject to Last Resort, as argued in Bošković (1997).

3.4.4. *Scrambling and Case*

Having shown how the scrambling generalization in (77) can be deduced, I now turn to another generalization regarding scrambling, which goes back to Sapir (1921) (see also Alexander 1990), showing where the generalization fits in the system developed above.

- (78) Scrambling Generalization 2: The Scrambling/Case Correlation
 Only languages with overt case-marking may have scrambling.
 (+scrambling \rightarrow +case)

(78) makes case a prerequisite for scrambling so that only case-marking languages can have scrambling. One way of interpreting (78) that would tie it to generalization (77) is to assume that in scrambling languages Case does the job of D (see also Enç 1991, who observes that Case in Turkish can encode semantic notions that are typically associated with D), e.g., by performing Higginbotham's (1985) θ -binding,⁵² which I assume is not possible in non-scrambling languages. Under this view, non-scrambling languages would have to have a DP (the open position of the noun would otherwise remain unbound), while the traditional NP could in principle be either an NP or a DP in scrambling languages, the NP option being forced in scrambling contexts, as discussed above. Interestingly, in scrambling languages that have both overtly case-marked and non-case-marked NPs, e.g., Japanese and Choctaw, only the former can scramble (see Saito 1983, 1985, and Alexander 1990 for Japanese and Alexander 1990 for Choctaw).⁵³

- (79) a. *John-ga dare(-o) nagutta no?*
 John-nom who-acc hit
 ‘Who did John hit?’
 b. *Dare-o John-ga nagutta no?*
 c. **Dare John-ga nagutta no?* (Saito 1985: 267)
- (80) a. *John-at Bill-(a) habli-tok.*
 John-nom Bill-obl kick-past
 ‘John kicked Bill.’
 b. *Bill-a John-at habli-tok.*
 c. **Bill John-at habli-tok.* (Alexander 1990: 174)

One way to interpret the above data is to assume that the traditional NP can, but does not have to, have the DP layer in Japanese and Choctaw. The DP option would be forced in examples where case-marking is absent since due to the absence of a case-marker, the θ -position of the noun that needs to be bound within the traditional NP would remain unbound in such examples unless the DP projection is present (recall that D can bind the θ -position of a noun). However, the presence of the DP layer would make scrambling impossible for reasons discussed above, hence the ungrammaticality of (79c) and (80c).⁵⁴

Let me finally note that in Bošković (2002d) I also gave an alternative deduction of (77) which maintains the idea that an argument DP but not an argument NP must establish a θ -relation immediately, and which also deduces the scrambling generalization in (78). The alternative in fact makes a rather tight connection between the generalizations in (77) and (78). I will briefly summarize it below, leaving a detailed exploration of its ramifications for another occasion.

In the spirit of Cheng’s (1997) clausal typing requirement, according to which all clauses must be typed at SS (a clause being typed as interrogative either with a question particle or by placing a wh-phrase in SpecCP, i.e. interrogative position), I proposed the *Argument Identification Requirement*.

- (81) The Argument Identification Requirement
 An argument must be identified at SS, i.e. overt syntax.

Argument identification is done either through overt case-marking (the underlying assumption here is that overt case-marking does have some semantic import, as in many traditional grammars, see, e.g., Stevanović 1969

for SC, and Sigurðsson 2002, Uriagereka 2002, Butt and King in press, Svenonius in press, and Stjepanović in preparation), or by placing an argument in a θ -position. Given a further assumption that N, and not D, is the actual source of Case (in some languages D can get Case via low-level morphological Case agreement/spreading which is irrelevant for our purposes), which means that NPs, but not DPs are case-marked in the syntax, we then capture both the NP/scrambling correlation and the scrambling/Case correlation. In DP languages, an argument can be identified only by placing it in a θ -position in overt syntax, while in NP languages an argument can also be identified through case-marking, hence it does not need to be placed in a θ -position in overt syntax. Under BT's approach to scrambling, it follows that only NP languages can have scrambling.⁵⁵ This analysis can also explain why Japanese subjects cannot scramble (cf. Saito 1985), given Saito's (1985) claim that they do not bear "regular" Case. Saito argues *-ga* is not the phonetic realization of abstract nominative case, which in our terms means *-ga* cannot identify an argument. It follows then that *ga*-marked phrases cannot scramble (on the impossibility of subject scrambling in Japanese, a somewhat controversial issue, see also Iseda 2004 and references therein).

4. Conclusion

The above discussion has hopefully brought us closer to understanding the nature of the mysterious phenomenon of left branch extraction. I have explored several analyses of the phenomenon as well as their consequences for the theory of locality, structure of NP, and scrambling. Concerning locality, I have made several proposals regarding how Chomsky's phase-based theory of locality can be applied to the NP level if crosslinguistic variation regarding left branch extraction is to be captured via locality of movement. Regarding the structure of NP, I have argued languages may differ with respect to the presence of DP in the traditional NP. Additionally, capturing crosslinguistic variation regarding left branch extraction may require positing crosslinguistic variation regarding the position of adjectives in the traditional NP, with some languages having the traditional NP-over-AP structure, others having Abney's AP-over-NP structure. Finally, I have established two generalizations regarding scrambling, namely, that only scrambling languages may allow left branch extraction and that only NP languages may allow scrambling. I proposed an account of these generalizations based on Bošković and Takahashi's analysis scrambling. The

account led me to the conclusion that pure Merge of functional, but not lexical elements, is subject to Last Resort. I have also explored the role of Case morphology in the phenomenon of scrambling, more precisely, the generalization that only languages with overt Case marking may have scrambling, suggesting that in scrambling languages case does the job of D.

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Notes

1. For this reason, some of the remarks made in the paper will remain on a rather speculative level. Notice also that the alternative analyses of LBE discussed in the paper are sometimes based on mutually conflicting assumptions.
2. French behaves like English in all respects except that it allows (1e) ((1a–d) are unacceptable in French), which indicates (1e) may not be a reliable test for whether a language allows LBE in general. Below, I will disregard such constructions. I will also confine the discussion to LBE in overt syntax, putting aside the question of whether the languages considered allow LBE in covert syntax. (See Sabel 2002 for some relevant discussion. Finding a difference in the availability of LBE between overt and covert syntax would not be surprising given that the two components have been argued to differ regarding locality of movement; see Huang 1982 for the view that covert movement is less local than overt movement and Bošković 1998 for the claim that overt movement is less local than covert movement.)

3. I will therefore mostly ignore works that focus on other types of LBE, e.g., possessor LBE (for recent discussion of possessor LBE, see Boeckx 2003a and Gavruseva 2000.)
4. Bošković (2001) notes a potential counterexample to the ban on LBE in Bulgarian concerning the *li*-construction and explains it away. Note that we are dealing here with a one-way correlation, not having articles being a prerequisite, but not sufficient, for LBE. Whatever is responsible for the correlation between articles and the impossibility of LBE (call it X) is not the only principle of the grammar. A number of things could go wrong if X is not active in a language that could still block LBE. E.g., LBE could leave a (null) PF affix in a position where it could not be properly supported. Last Resort could also be an interfering factor. Suppose, e.g., that the only operation that could LB move a phrase in a language is topicalization and that adjectives cannot bear a topic feature (i.e. undergo topicalization) in the language, much like, e.g., control infinitives in English. Adjectival LBE in such a language would invariably violate the Last Resort Condition. Notice also that the way Uriagereka's observation is deduced below, even the presence of null articles (more generally, determiners) will block LBE (for relevant discussion, see also Boeckx 2003a).
5. See also Bowers (1987) and Corver (1990) for ECP accounts. Kennedy and Merchant (2000) argue against the ECP analysis based on the intriguing claim that some (though not all, see their p. 119) LBC violations in non-LBE languages can be rescued by ellipsis, which they treat as PF deletion. Showing that a violation can be rescued by a PF operation, however, does not necessarily argue against a syntactic treatment of that violation. See, e.g. Lasnik (2001) and Bošković (2002b) for different ways of instantiating rescuing effects of various PF operations/mechanisms on violations of locality restrictions on movement and/or licensing of traces. (The authors do attribute an aspect of these restrictions to PF.) Since this work focuses on languages that allow LBE I leave investigation of the very interesting rescuing effect of ellipsis on LBE in languages that normally do not allow it for future research.
6. As we will see below, this analysis leaves room for the existence of a language that has DP/determiners to allow possessor LBE. All that would have to happen in such a language is that the whole possessor is located in SpecDP, not just a part of it, as in English. This may be an appropriate way to handle Hungarian, a language that has determiners and allows LBE of possessors at least in some cases. (Hungarian possessive LBE may, however, involve a left dislocation-type configuration with a resumptive pronoun; see den Dikken 1999. For discussion of Hungarian possessor LBE, see also Boeckx 2003a, Szabolcsi 1983/1984, 1994, and Gavruseva 2000, among others.) Note that Hungarian does not allow adjectival LBE, as expected given the discussion below.

- (i) a. **Magas(-ak-at) látott lány-ok-at.*
 tall-pl-acc saw-3sg girl-pl-acc
 b. cf. *Magas lány-ok-at látott.*
 ‘Tall girls, he saw.’
 c. **Milyen(-ek-et) látott lány-ok-at?*
 what-kind-of-pl-acc saw-3sg girl-pl-acc
 d. *Milyen lány-ok-at látott?*
 ‘What kind of girls did he see?’

In fact, it should become obvious below that the way to refute the DP/NP analysis, one instantiation of which is Corver (1992), is to find a language with determiners that allows adjectival LBE, adjectival LBE being much more informative in the relevant respect than possessor LBE. (This is one of the reasons I am focusing on adjectival LBE. Notice that, following Corver 1992 and Grosu 1974, I assume not all LBC violations should necessarily be analyzed in the same way.)

7. The relevant definitions from Corver (1992) are given in (i) (see Corver 1992 for details).
- (i) A is a M(inimality)-barrier for B if A includes B, D (an X^0 i-commander of B), and G (a maximal projection not necessarily distinct from A) containing B, where D i-commands B if the first constituent containing D contains B.
8. The claim that languages can differ with respect to the presence vs. absence of DP (regarding the latter option, see also Fukui’s 1986 discussion of Japanese and Mahajan’s 2003 discussion of SOV languages) has obviously important ramifications for the semantics of NP. For relevant discussion that assumes the crosslinguistic variation in question, see Willim (2000) and especially Chierchia (1998), who convincingly argues (contra Longobardi 1994) that the presence of DP is not necessary for argumenthood. Note that there is some controversy regarding the issue of whether SC lacks DP. Thus, Progovac (1998) and Leko (1999) argue for DP in SC (see also Rappaport 1998 for a more general Slavic perspective intended to be applicable to SC), while Stjepanović (1998), Zlatić (1997, 1998), Bošković (2004a), and Trenkić (2004) argue against DP in SC (for an overview, see Bošković in press). Note also that, as far as I can tell, the analyses considered in this paper would not crucially change if pronouns are Ds, more precisely, the only Ds in SC.
9. The order of the SC elements in question is sometimes fixed (see Zlatić 1997, 1998 and Leko 1999), but the same of course holds for adjectives (see, e.g., Sproat and Shih 1991). What is important here is the contrast between English and SC with respect to the permutability of the elements in question.

Note that the permutation can have a semantic effect. Thus, (ia) only has Larson and Cho’s (1999) POSS-modifying reading, on which *Jovan’s former house* refers to the house that Jovan formerly owned. To express Larson and Cho’s N-modifying reading, on which *Jovan’s former house* refers to an ob-

ject that Jovan now possesses and that was once formerly a house, it is necessary to use (ib).

- (i) a. *bivša Jovanova kuća*
 former Jovan's house
 b. *Jovanova bivša kuća*

10. Note that a postnominal possessive noun that is assigned genitive by the head noun can be modified by a possessive (more generally, an adjective), as in *prijatelji(nom) moga(gen) brata(gen)* 'friends of my brother'. (Note that *brata* is a noun, not an adjective. The reader is also referred to Corbett 1987 for a peculiar construction found in Upper Sorbian and Slovak in which only the possessive modifying the possessive bears the adnominal genitive.)
11. In Takahashi's system, this is quite generally the case; successive-cyclic movement does not start until the final target of movement enters the structure, contra Chomsky (1999). Takahashi's approach is revived in Bošković (2002a) and Boeckx (2003a), where it is argued to be empirically superior to Chomsky's (1999) system. In fact, the analysis to be presented can be considered an argument in favor of this approach.
12. Notice that movement of the complement NP in (22) raises no problems with respect to the ECP assuming that its trace is lexically governed (see, however, Corver 1992).
13. Note that I confine the discussion of the existing accounts of LBE to accounts that focus on languages that allow LBE. For another such analysis, which is based on the possibility of pronunciation of lower copies of movement, see Fanselow and Čavar (2002) (see also Bošković 2005 for a criticism of this analysis).
14. Franks and Progovac actually propose the analysis for what I in Bošković (2005) call extraordinary LBE, which under the remnant movement analysis involves remnant PP movement. However, Franks and Progovac do hint that the remnant movement analysis should also be applied to constructions like (25).
15. It is worth noting in this respect that LBE constructions actually sound best when the remnant of LBE precedes the verb (see Fanselow and Čavar 2002 and Bošković 2001), a potentially significant fact.
16. Note that under the analysis presented in section 3.2., where adjectives are argued to be located in SpecNP, the ungrammaticality of (28) follows immediately if intermediate, bar-level elements cannot move (see Chomsky 1995).
17. For similar examples involving Bošković's (2005) extraordinary LBE, see Bošković (2001), Franks (1998), Franks and Progovac (1994), and Schütze (1996). Note that fronting the remnant does not improve the unacceptable examples, as shown by **visoke je on lijepo djevojke vidio* and **visoke je on djevojke vidio lijepo*. For the former example, which involves double AP LBE from a raised position, see section 3.2.1. (the analysis presented there also excludes **visoke je on lijepo vidio djevojke*). As for the latter construction,

assuming that it involves movement of *visoke djevojke* followed by LBE of *visoke*, the construction can be ruled out either because it involves non-constituent movement (if *visoke* is higher than *lijepe* prior to movement—I assume below that the adjectives are either located in multiple Specs of NP or adjoined to NP), or because it involves movement of an intermediate element that is larger than a head but smaller than a full phrase (if *visoke* is lower than *lijepe*), which is standardly assumed to be disallowed.

18. Chomsky's (1999) notion of *phase* is similar to the pre-minimalist notion of *bounding node*. The basic idea is that XP can move out of a phase only if it first moves to the Spec of the phase due to the Phase-Impenetrability Condition (PIC), which says that only the head and the Spec of a phase are accessible for movement to a position outside of the phase. This movement is instantiated by giving the head of the phase the EPP property, which is satisfied by filling the Spec position. The EPP then drives movement to the Spec of the phase. After the movement, the element located in the Spec of the phase is accessible for movement outside of the phase.
19. I assume with Corver that possessives like *whose* are not constituents and that elements like *which* and *that* are heads, hence cannot undergo LBE, which is a phrasal movement.
20. Kennedy and Merchant (2000) also account for the impossibility of AP LBE in English by causing the independently needed AP movement to SpecDP to result in a violation (a PF violation for them. Their analysis is actually slightly more complicated since they assume a richer structure for the traditional NP.) However, since they focus on the impossibility of +wh-adjectival LBE, their analysis, which is based on what seems to be an accidental gap in the lexicon of English, ends up being too tightly tied to wh-movement and does not readily extend to other instances of AP LBE (i.e. the fact that other movement operations, not just wh-movement, also fail to extract adjectives out of the traditional NP in English-type languages). Furthermore, their analysis appears to rule out all wh-movement out of the traditional NP in English, including (36). The reader should, however, bear in mind that the strategy employed above (namely, causing movement to SpecDP to result in a violation) is the same strategy as the one employed by Kennedy and Merchant.
21. Bošković (1994, 1997) and Saito and Murasugi (1999) give slightly different formulations of the principle, which they suggest is derivable from economy, the basic idea being that the ban on superfluous steps rules out movement that is too short (Fukui 1993 makes the same point, but only for adjunction). The authors show the principle has considerable motivation. Thus, Bošković (1994) appeals to the principle to rule out movement from the complement to the Spec of the same phrase. This way we can rule out movement from object to subject θ -position (complement to SpecVP), which becomes necessary once the syntactic θ -criterion is dispensed with, in accordance with minimalist

guidelines. (More precisely, Bošković shows the condition enables us to rule out ungrammatical instances of movement into θ -positions while still allowing movement into θ -positions to take place in certain well-defined configurations, in which he argues the movement indeed takes place.) Bošković (1997) also appeals to the principle to rule out movement from SpecXP to the XP-adjoined position, thus accounting for the impossibility of short-subject topicalization and short zero-subject relativization in English, which otherwise remain unaccounted for. Furthermore, under Takahashi's (1994) view of successive-cyclic movement, based on the Minimize Chain Links Principle, which requires each chain link to be as short as possible, a condition like (37) is necessary to prevent the principle from forcing a phrase in an adjoined position to keep adjoining to the same node. Finally, (37) also rules out adjunction of X to its own XP and substitution of X to SpecXP (Chomsky's 1994 self-attachment), which raised a problem for Chomsky (1994). (Notice also that Grewendorf and Sabel 1999, who adopt the multiple specifiers framework, appeal to a principle similar to (37) to rule out movement from one SpecXP to another SpecXP, cf. also Sabel, this vol.)

22. Ishii uses the fact that this way we rule out movement from the position adjoined to the complement of X to SpecXP to account for the *that*-trace effect. Following Kayne (1994) and Saito and Fukui (1998), Ishii equates SpecXP and the XP-adjoined position. A *wh*-phrase in SpecIP is then actually IP adjoined. Since it is already located in the minimal domain of C it cannot move to SpecCP, which, Ishii shows, derives the *that*-trace effect. Abels appeals to the impossibility of movement within the same minimal domain to account for the immobility of IP, among other things. (He shows that quite generally, the complement of a phase head cannot be moved, which he demonstrates can be explained given the ban on movement within the same minimal domain.)
23. See these works for the precise definitions. Grohmann (2000) does not explicitly discuss anti-locality with respect to movement within the traditional NP. (He discusses only movement in the clausal domain). However, his theory can be easily extended to the NP-domain, as shown in Grohmann (2003), Grohmann and Haegeman (2003), Grohmann and Panagiotidis (2004), and Ticio (2003).
24. We are actually accounting for the impossibility of AP movement out of DP in the same way Abels (2003a,b) accounts for the impossibility of IP movement out of CP (more generally, the impossibility of movement of the complement of a phase head).
25. The charge can be levied against the phase system in general (for critical discussion of the phase system, see Boeckx and Grohmann 2004, Bošković 2002a, and Epstein and Seely 1999). It is worth noting in this respect another similarity between the phase system and the ECP system of Chomsky (1986a), namely, they both make IP special (by making it a non-phase in the phase-system and by banning adjunction to IP and exempting it from inherent barrier-

hood in the *Barriers* system). Chomsky (1999) does attempt to show that the way of making IP special in the phase system is principled, in contrast to the *Barriers* system, where it is clearly arbitrary. Chomsky takes propositionality to be the criterion for phasehood, which, according to him, makes CPs, but not IPs, phases. The criterion actually does not always work as desired since IPs often semantically seem to correspond to full-blown propositions. Thus, as noted in Bošković (2002a), the infinitival IP in *There seemed to have arrived someone* seems to be no less of a proposition than the embedded finite CP in *It seemed there had arrived someone* or *It seemed someone had arrived*. There is also the question of why propositionality should be the relevant criterion. In fact, given that phases are crucially involved in multiple spell-out, more precisely, in determining which chunks of structure are shipped off derivationally to the phonology and the semantics, it seems that a phonological criterion for defining phases would be as natural as a semantic criterion (e.g. a piece of structure corresponding to an intonational phrase instead of a piece of structure corresponding to a proposition.) There are of course a lot of other candidates for defining phases (e.g. binding domain, Case-domain, etc.), which emphasizes the arbitrary nature of the decision to select propositionality as the relevant criterion, which, as we have seen above, does not quite work anyway. The point of all of this is that the notion phase does not seem to be much more natural than the notions of *L-marking* or *barrier*. (One argument for the superiority of the notion of phase could be that it is more comprehensive, i.e., it is involved in more phenomena, as can be seen from Chomsky's claim that non-phases are not phonologically isolable. (*Barriers* would have nothing to say about this.) However, as noted in Bošković (2002a), this particular claim cannot be maintained given that IP, a non-phase, can undergo right-node raising, as shown by *Joe wonders when, and Bill wonders why, Mary left*. (Note that, if Wexler and Culicover 1980, Kayne 1994, and Bošković 2004b are right, we are dealing here with IP ellipsis rather than IP movement.)

26. Admittedly, the alternative analysis (the AP/NP analysis) is also not quite as broad in its empirical coverage as the ECP and phase analyses, a familiar situation in comparison of analyses of different order of arbitrariness/power, theoretically more arbitrary/powerful analyses often having broader empirical coverage. For one thing, since the AP/NP analysis is intended to provide a principled way of ruling out adjectival LBE in English-type languages while in principle allowing it in SC-type languages, something additional has to be said under this analysis about cases where adjectival LBE is banned in SC-type languages, as in the case of deep LBE.
27. I will not be able to examine here all the issues that arise under either the NP-over-AP or the AP-over-NP analysis. (Note also that following Chomsky 1995, I am not positing any agreement projections.) I merely reiterate Duffield's (1999: 142) observation that, in the minimalist system, in which the

Head Movement Constraint is relativized to the actual feature checked, adjectives are not necessarily expected to block N-to-D movement (see Bernstein 1993, Cinque 1994, Longobardi 1994 and references therein for N-movement) in AP-over-NP languages. (In the current system, X can move to head Y across head Z to check feature F if Z does not have F.)

Note that Duffield (1999) also argues that there is crosslinguistic variation with respect to the position of adjectives within the traditional NP. While the current analysis instantiates the variation as the head vs. spec/adjunct distinction (the choice between spec and adjunct being immaterial), Duffield instantiates it as the head/spec vs. adjunct distinction (the choice between head and spec being immaterial for him).

It is worth noting here that Bernstein (1993) argues that adjectives can vary with respect to whether they exhibit the NP-over-AP or the AP-over-NP pattern even within a single language. I leave detailed discussion of Bernstein's Romance data that led her to make this claim for future research.

28. This is most naturally stated in Marantz's (2001) system, in which the categorial information of a given word comes from vocabulary items like little *a* and little *n*. In this system, the relevant difference can be stated only once as the property of these two items.
29. The pronoun bears nominative in the counterpart of (47) in Dutch, which should be an English-type language.

(i) a. *De echte ik/*mij bleef verborgen voor haar.*
 the real I me remained hidden to her

This is actually not surprising. As noted above, the accusative in (47) is likely a default Case. It is indeed standardly assumed that accusative is the default Case in English. On the other hand, constructions like (ii) indicate that nominative is the default Case in Dutch (see also Schütze 2001).

(ii) *Ik/*mij intelligent?!*
 I me intelligent

It is then possible that, as in English, the adjective disrupts Case assignment in Dutch (i), nominative on the pronoun in (i) being a default Case. That this is indeed the case is confirmed by Schütze's (2001) observation that a pronoun modified by an adjective must bear nominative in Dutch in all syntactic positions (not just structural nominative positions), in contrast to SC.

30. In Bernstein's (1993) terms, A^0 selects for an overt N. (Note that Bernstein also argues that adjectives can occur with elided NPs only in the NP-over-AP pattern. There are, however, interfering factors with some of the Romance data she discusses from our perspective (see the next note).)
31. According to Valois (1991: 191–195), there is a small group of adjectives in French that in a highly restricted set of contexts can occur with what seems to be a non-overt noun. Valois suggests that such cases should be treated differ-

ently from cases like (50). Anyway, there is a clear difference in the productivity of adjectives occurring with non-overt nouns between French and SC.

Notice also that analyzing Romance N-A order such as the one in the first conjunct of (50) as involving N-movement above the adjective, as in Cinque (1994) and Longobardi (1994) among others, does not raise any interfering factors, given Lasnik's (1999) demonstration that elements that normally have to move in overt syntax do not have to move if they remain in an ellipsis site. (Lasnik shows that a verb that normally must move outside of its VP can stay within the VP if the VP undergoes ellipsis. He also shows (with respect to VPs) that a phrase whose head moves out of it can be an ellipsis antecedent for a phrase whose head remains in place.)

It is worth noting that Bernstein (1993) argues NP ellipsis is possible with a number of adjectives in several Romance languages. However, she argues NP ellipsis in such cases is licensed by special morphology, her word marker which is in Spanish and Italian phonologically realized as *o* or *a* and which is not present in English, rather than the adjective itself (the word marker takes the NP to be elided as its complement on Bernstein's analysis). This makes the cases in question irrelevant for our purposes. (Also irrelevant are Bernstein's deadjectival nouns and the definite article+*pro* constructions, which only superficially resemble NP ellipsis constructions according to Bernstein.)

Note also that, as expected, the counterpart of (51) is acceptable in Russian (*Ya nenavižu političeskiye probl'emy, no sotsial'niye ya nenavižu yeš'o bol'she*) and unacceptable in Macedonian (*Gi mrazam političkite problemi, no socijal-nite mrazam ušte poveče*). My Bulgarian informants disagree on the status of its Bulgarian counterpart (*Mrazja političeskite problemi, no socialnite mrazja ošte poveče*), some, but not all of them, finding it degraded. It is possible that one of the strategies Bernstein discusses regarding Romance, noted above, is available for the latter group of speakers (the same may hold for German and Dutch, which often allow "NP ellipsis"). In fact, in light of these strategies, the possibility of nominal ellipsis in the presence of an adjective in DP languages would not necessarily provide evidence against the current analysis. In other words, languages like German and Dutch are not necessarily problematic.

32. Prenominal comparatives are acceptable in the context in question in Russian, as expected. However, they are also acceptable in Bulgarian, which raises a potential problem. I speculate that the different behavior of English and Bulgarian, both of which are classified as AP-over-NP languages, may follow from the fact that, as is well-known, the DP system of Bulgarian is quite different from the English DP system and/or the fact that, in contrast to English, adjectives in Bulgarian often move outside of their base-generated position within AP (see section 3.2.1.).
33. As expected, Macedonian patterns with English in the relevant respect. My Russian and Bulgarian informants do not agree on the status of (56a) in their

languages. However, most of my Bulgarian informants reject the Bulgarian counterpart of (56a), and most of my Russian informants find the Russian counterpart of (56a) acceptable.

34. The analysis to be proposed can be maintained if APs are adjoined to NP in SC-type languages.
35. McGinnis shows that the principle has considerable empirical motivation. Thus, it explains why Romance reflexive clitics must be generated as the external argument, with the internal argument raising to subject position, as in passive structures (see Kayne 1988, Marantz 1984 and Pesetsky 1995), evidence for which is provided by the fact that *se* occurs with the auxiliary *be* in (i), which shows that (i) involves movement from object to subject position (see Burzio 1986 and the contrast in (ii)), and the fact that in *se* constructions, the embedded “subject” in French causatives bears the object, accusative Case instead of the usual dative Case (marked by \grave{a} ; \grave{a} +le=au) reserved for subjects, indicating that the embedded “subject” is not a real subject in the *se* construction (see (iii)).

(i) *Pierre s' est/*a frappé.* [French]

Pierre himself is/has hit
'Pierre hit himself.'

(ii) a. *Pierre t' a/*est frappé.*

Pierre you has/is hit
'Pierre hit you.'

b. *Pierre était/*avait frappé.*

Pierre was/had hit
'Pierre was hit.'

(iii) a. *Jean le fait révéler au/*le juge.*

Jean it makes to-reveal to+the/the judge
'Jean is making the judge reveal it.'

b. *Jean fait se révéler le/*au juge.*

Jean makes himself to-reveal the/to+the judge
'Jean is making the judge reveal himself.'

The gist of McGinnis's account of the external argument requirement on *se* is the following: Suppose *Pierre* is the external argument, and *se* the internal argument in (i). Since, like other object clitics, *se* must undergo object shift (i.e. move to the accusative Case-checking position) on its way to its final SS site, after *se* undergoes object shift, *se* and *Pierre* are located in the Specs of the same head, namely *v*, thus giving rise to a Lethal Ambiguity configuration, which blocks further attraction of these elements. The problem does not arise if *Pierre* is the internal argument and *se* is the external argument, since *Pierre* does not undergo object shift on its way to its final SS position (see McGinnis 1998a,b for additional evidence for Lethal Ambiguity).

36. Through agreement with the same noun (recall that an adjective and the noun it modifies agree in Case and ϕ -features), the adjectives end up agreeing with each other, which I take to mean they are featurally non-distinct.
37. There is another line of research which argues that traditional A' scrambling involves topic or focus movement (see, e.g., Miyagawa 1997 and Karimi 2003). As noted in Grewendorf (this volume), this line of research actually argues against the existence of scrambling as an independent operation.
38. The conclusion holds for the adjectives in (57) but not necessarily for all adjectives. Double AP LBE can in fact be used as a test for determining whether various adjectival modifiers in multiple adjectival constructions are Specs of the same head or different heads. The adjectives used in (57) belong to Quirk et al's (1972) class of general adjectives, which are more or less freely ordered. A question arises what happens when adjectives belonging to different classes are used in a double AP LBE configuration. Some examples of this type, especially those involving a general and a denominal adjective, are quite good (though generally still not fully acceptable), as (ia) shows. (Notice that denominal adjectives are placed closest to the noun; compare *neozbiljnog mašinskog tehničara* with **mašinskog neozbiljnog tehničara*. Ordering restrictions of this kind seem enforceable under either the Specs-of-different-heads or Specs-of-the-same-head analysis.)

- (i) a. ?*Neozbiljnog je on otpustio mašinskog tehničara.*
 not-serious is he fired mechanical technician
 b. **Mašinskog je on otpustio neozbiljnog tehničara.*

Given the above discussion, (i) may be taken to indicate *neozbiljnog* and *mašinskog* are located in the Specs of different heads, not the same head, with *neozbiljnog* located in the Spec of the higher head. Alternatively, it is possible *mašinskog tehničara* in (ia) receives a compound-like treatment. (The compound analysis for *mašinskog tehničara* would not be obligatory; in particular, it would not be applicable to examples in which *mašinskog* is contrastively focused, undergoing focus movement.) Another possibility is that the feature make up of denominal adjectives is such that they are not featurally non-distinct from general adjectives. Since Lethal Ambiguity holds only for featurally non-distinct elements, *mašinskog* and *neozbiljnog* could then still be located in the Specs of the same head. (Under this analysis, the contrast in (i) could be accounted for if *mašinskog* must be located in the lower Spec and *neozbiljnog* in the higher Spec (of the same head) prior to movement, assuming crossing of the higher Spec results in a violation.)

39. For different Abney-style analyses (i.e. analyses that assume the AP-over-NP structure) of Bulgarian DP, see Caink (2000), Franks (1998), and Franks and King (2000: 332–334), among others. For alternative analyses that do not assume the AP-over-NP structure, see Fowler and Franks (1994), Giusti and

Dimitrova-Vulchanova (1996), Schoorlemmer (1998), Stateva (2002), and Tomić (1996), among others.

There is a controversy in the literature concerning whether movement of the adjective in (62) involves head movement (i.e. adjunction to D) or phrasal movement (i.e. movement to SpecDP). The usual tests give conflicting results, (i), where an adjective takes a PP complement, providing strong evidence for the head-movement analysis, and (ii), where an adverb precedes the adjective, for the phrasal-movement analysis.

- (i) a. *kupena-ta ot Petko kniga*
 bought-the by Petko book
 ‘the book bought by Petko’
 b. **kupena ot Petko-ta kniga*
 c. *vernij-at na Vera muž*
 truthful-the to Vera husband
 ‘the husband truthful to Vera’
 d. **veren na Vera-ta muž*
- (ii) a. *mnogo xubavi-te knigi*
 very nice-the books
 ‘the very nice books’
 b. **mnogo-te xubavi knigi*

(iia) can be reconciled with the head-movement analysis by assuming, following Bošković (2001: 237), that (iia) is derived by first forming a complex head *mnogo xubavi* through head movement and then moving the complex head to D (see also Arnaudova 1998, who suggests that *mnogo* undergoes separate movement to SpecDP).

40. Note we are not dealing here with a two-way correlation, scrambling being a prerequisite, but not sufficient for allowing LBE. As noted below (76), interfering factors may conspire to ban LBE even in languages that allow scrambling.
41. I am taking the term scrambling to mean extreme freedom of word order. Superficially, freedom of word order is characterized by gradualness. (The reason for this is that a number of mechanisms can at least to some extent give the appearance of free word order.) The above correlation between LBE and scrambling is based on the conjecture that LBE languages will fall further on the freedom of word order scale than those that do not allow LBE (but see note 40).
42. The analysis relies on the possibility of movement into θ -positions. As discussed in BT, the abandonment of DS (cf. Chomsky 1993) has left the door wide open for this theoretical possibility. In fact, since Bošković (1994), probably the first minimalist attempt to legitimize movement into θ -positions, there has been a battery of works arguing for movement into θ -positions and/or that θ -roles are features (the assumption naturally leads to endorsing

movement into θ -positions). The reader is referred to Boeckx (in press), Bošković (1997), Ferreira (2000), Hornstein (1998, 1999, 2001), Hoshi (in press), Kang (2002), Kayne (2003), Kim (1997), Lasnik (1999), López (2001), Manzini and Roussou (2000), Rodrigues (2002), Roehrs (2002), Saito and Hoshi (2000), Saito (2001a), Stateva (2002), and Watanabe (1999), among others. Empirically, this has been a very fruitful line of research whose accomplishments are yet to be comprehensively addressed by those who would like to maintain the stipulatory ban on movement into θ -positions. BT's analysis also crucially relies on not positing a ban on lowering. The reader is referred to BT for arguments against such a ban, which would be massively redundant with respect to independently needed conditions. (Thus, BT note that all overt lowering and all lowering of operators or, more precisely, elements that are forced to leave traces by independent principles of the grammar are ruled out independently of a ban on lowering.)

43. The problem also arises under the topic movement analysis. Notice also that focus generally facilitates wide scope, which, as noted above, is completely unavailable for the scrambled NP in (66).
44. Under this analysis we can actually assume that (at least) AP LBE as an upward overt movement is universally blocked. Since the scrambling derivation discussed above is unavailable in English, English not being a scrambling language, LBE is then completely disallowed in English.
45. Note, however, that, as discussed by BT, we do not want to impose relativized minimality, which is defined on *c*-command (in contrast to the case under consideration, which involves domination), on scrambling lowering.
46. Note that nominative on *čiča* in (75b) is a default Case and that *čičinu* and *Tominu* are morphologically adjectives.
47. We would need to posit a functional category above AP in non-scrambling languages, on a par with NP, which is dominated by DP in such languages. This would suffice to implement the agreement analysis under the approach to scrambling from section 3.4.3. On the other hand, if (81) is adopted (generalized in such a way that it applies to adjectives, i.e. θ -identification), it would also be crucial that adjectival agreement involves Case agreement. Note that under the former analysis, but not under the latter analysis, there would be no need to adopt Higginbotham's view of adjectival modification.
48. See also Bošković (2004a) and Boeckx (2003b) for claims that scrambling languages do not have articles, which are the prototypical instantiation of D. Regarding Slavic and Romance, recall that scrambling Slavic languages have no articles, while Bulgarian has articles but no scrambling. Latin had scrambling and no articles and modern Romance languages have articles and no scrambling. Recall also that, following Corver (1992), I argued above that Slavic languages that have no articles have no DP. What about non-Slavic/Romance languages? Japanese, Korean, Hindi, Turkish, Chukchi, and Warlpiri

all fit the above pattern in that they have scrambling and no articles (see also Fukui 1986 for a more general claim that Japanese has no DP), i.e. they have no independent lexical items functioning as articles. (I put aside here the controversial question of whether numeral *one* functions as an indefinite article in some languages.) These languages confirm that there is at least a strong tendency among scrambling languages to lack articles, which is predicted by (77). Note also that taking (77) seriously leads to the conclusion that German, which clearly has DP, does not have scrambling in the relevant sense of the term. German is traditionally considered to have scrambling. However, its “scrambling” differs in a number of respects from scrambling in, e.g., Japanese. Thus, German does not have the hall-mark case of scrambling, long-distance scrambling out of finite clauses (cf. Ross 1986), shows no evidence of the undoing effect associated with scrambling (in fact, its scrambling is claimed to always have semantic effects, see, e.g., Diesing 1992, Lenerz 1977, Moltmann 1991, Sauerland 1999, and Grewendorf this volume), and does not allow scrambling of *wh*-phrases (see, e.g., Fanselow 1990, Grewendorf and Sabel 1999, and Müller and Sternefeld 1993). German also disallows referential *pro*-drop, in contrast to other scrambling languages (cf. Hale 1983 and Oku 1998 a, b; see the latter reference for an analysis of the correlation between the availability of scrambling and *pro*-drop). I assume, therefore, that German does not have scrambling in the sense of the term used in this paper. (In this respect, see Grewendorf (this volume), who also argues that German does not have scrambling. He provides convincing evidence that what has been traditionally considered to be scrambling in German actually involves topic/focus movement.) It is worth noting that authors who have tried to account for the many differences between Japanese and German scrambling under the assumption that we are dealing here with the same movement operation generally end up positing a crosslinguistic difference between Japanese and German scrambling that is not found with respect to any other movement operation (but see Grewendorf and Sabel 1999, whose analysis, however, does not extend to SC, which seems to be incorrectly expected not to allow long-distance scrambling under their analysis). Thus, Saito (2001b), who assumes that scrambling involves overt movement, suggests that Japanese scrambling is not feature-driven, while German scrambling is. Sauerland (1999) proposes that German scrambling is driven by checking of an interpretable feature, and Japanese scrambling by checking of an uninterpretable feature. Such differences are not found with respect to any other movement operation. E.g., there is no pair of languages X and Y such that *wh*-movement in X is driven by the +*wh*-feature, while in Y *wh*-movement exists but is not driven by the +*wh*-feature (i.e. feature-checking at all); or such that *wh*-movement in X is driven by an interpretable +*wh*-feature, and in Y *wh*-movement is driven by an uninterpretable +*wh* feature (in other words, overt *wh*-movement in language X

has semantic effects and overt wh-movement in language Y does not have semantic effects). Given all the differences between Japanese/German scrambling and other movement operations, the natural conclusion regarding Japanese and German scrambling is that we are dealing here with totally different movement operations. In other words, differences between Japanese and German scrambling are too fundamental to treat them like the same movement operation.

It is also worth noting here that the term “scrambling” is often used in the literature for expository convenience when authors are not sure what kind of movement they are dealing with, or when they want to avoid committing themselves to the issue, or merely to indicate that the movement in question is different from other, better-known instances of movement regarding languages/phenomena considered. As a result, almost every well-studied language, e.g. English and Spanish, have been claimed to have scrambling although these languages do not have anything like Japanese scrambling. The ease-of-exposition use of the term scrambling (more precisely, the failure to recognize this usage, which characterizes a good deal of the relevant literature) raises a serious problem in crosslinguistic studies of scrambling. Obviously, what one is not sure about in one language does not have to be the same thing one is not sure about in another language.

49. This is the effect of my (1997) analysis. I actually assumed all pure Merge is subject to Last Resort and provided a loophole to avoid requiring independent motivation for insertion of lexical elements. Note also that I am generalizing here the position I took with respect to lexical insertion to pure Merge in general.
50. Note that I assumed in Bošković (1997) that functional elements are not present in the numeration.
51. A number of issues arise that cannot be comprehensively discussed here. E.g., regarding clausal scrambling, in Bošković (2002d) I suggested following Stepanov (2001) that there is a DP/NP on top of CP, as a result of which CP scrambling works like DP/NP scrambling. As for PP scrambling, we can assume either that there is a parallel functional structure on top of PP in non-scrambling languages (which would not be surprising in light of a number of PP/CP parallelisms noted in Bošković 2004 c,d), or that PPs are actually NPs/DPs, Ps being Case-markers/particles (see BT: 351 and Kang 2002). Note also that a BT-style derivation for non-scrambling languages on which a DP is inserted in SpecCP or a topic position, checking the +wh/topic feature in accordance with Last Resort, and then lowers in LF to its θ -position is ruled out given that, as argued by many authors (see, e.g., Epstein 1992, Lasnik and Uriagereka 1988, Lasnik and Saito 1992, Bošković 2003), a phrase located in an operator position at SS cannot undergo further LF movement (BT rule out the derivation in question by assuming that θ -features are strong in English, an

assumption that can be eliminated in the current system, see note 55). As for scrambling languages, if overt upward LBE is universally blocked (see note 44), we can derive wh-LBE constructions via BT-style base-generation, followed by overt wh-movement and LF lowering of the copy in the “scrambled” position (I am modifying here BT’s analysis).

52. Higginbotham posits an open position for nouns that is bound within the traditional NP. I leave working out details of the above proposal concerning θ -binding, a non-trivial issue, for future research.
53. The empirical situation is actually not completely clear in Japanese (see Fukuda 1993). It is possible that for some speakers Case drop is a low level phenomenon applying after (78) (i.e. (81)). Note that in some scrambling languages, e.g. SC, the non-case marked option does not exist for morphological reasons: SC nouns do not have caseless forms.
54. A question that arises now is whether non-scrambled case-marked NPs can be DPs in Japanese and Choctaw. If the case-marker must bind the open position of its noun this possibility would be excluded given that, as argued by Higginbotham (1985), the D also must be a binder in the relevant sense (according to Higginbotham, double binding of the noun’s open position is not possible); otherwise, it would be allowed.
55. Note that under this analysis as well as the analysis from section 3.4.3, we can eliminate BT’s stipulation that θ -features are weak in scrambling and strong in non-scrambling languages, which was necessary in BT’s original system to differentiate scrambling and non-scrambling languages. Its effects are now deduced from independent mechanisms.

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The discourse configurationality of scrambling

Günther Grewendorf

1. Introduction

The kind of syntactic operation which is known as scrambling raises a fundamental problem for a minimalist theory of syntactic derivation. This is the problem of the alleged optionality of scrambling. There are several ways syntacticians have dealt with this problem. On the one hand it has been claimed that scrambling is not optional but like any other kind of movement, is triggered by a morphological feature, which has been called a *scrambling feature* (see e.g. Grewendorf and Sabel 1999). However, the exact nature of such a feature and its morphological basis has had to be left open. On the other hand, scrambling has been considered to be an optional operation which does not form part of the syntax proper but either belongs to a syntactic system which is different from the computational system or has to be shifted to the phonology. The claim that I would like to make in this paper is that at least as far as German is concerned, scrambling is neither optional nor triggered by a scrambling feature but does not exist at all. I will argue that what has been called scrambling is just a cover term for several different kinds of movement, which are subject to different restrictions and target different positions in the clause associated with specific properties. In doing so I will try to show that the so-called German middle field has a much richer functional structure than traditionally assumed.¹ I will assume that to the left of the Case domain of the object as well as to the left of the Case domain of the subject there is a layer of Topic and Focus projections the internal configuration of which roughly corresponds to what Rizzi (1997) has assumed for the left periphery of the clause. This assumption also allows us to solve several problems associated with the traditional analyses of scrambling such as the fact that contrary to standard generalizations on scrambling in German, there are instances of “scrambling” which involve long extraction out of finite clauses and there are well-formed examples of remnant “scrambling”. Based on evidence provided by Frey (2004), section 1 shows that “scrambling” to a pre-subject

position can be movement to a high middle-field internal topic position. Section 2 argues that in other contexts, the same kind of “scrambling” functions as movement to a focus position that is located between the complementizer and the position of sentence adverbials. Section 3 shows that there is a low focus position in the left periphery of AgrOP (but to the right of AgrSP) which also serves as a target position for “scrambling”, and section 4 provides an analogous argument for a corresponding low topic position.

2. The clause-internal higher topic position

The term *scrambling* is standardly used for optional change of the base order of phrases within the middle field. A typical instance of scrambling is represented by (1b), where the direct object has undergone movement to a position in front of the subject:

- (1) a. *weil der Student aus Frankfurt den Job*
 since the student-NOM from Frankfurt the job-ACC
abgelehnt hat
 turned down has
- b. *weil den Job der Student aus Frankfurt*
 since the job-ACC the student-NOM from Frankfurt
abgelehnt hat
 turned down has

Since this kind of scrambling displays properties of A'-movement, Grewendorf and Sabel (1999), among others, have argued that the target position of German scrambling is an adjoined position. Scrambling itself is analyzed as a syntactic process driven by the need to check a ‘scrambling feature [Σ]’ which is optionally realized with Agr-heads. Apart from the claim that there is a specific correlation between properties of agreement and the availability of scrambling, the exact nature of the scrambling feature has been left open. Nevertheless, it has been pointed out that the notion of a scrambling feature is to be understood as a cover term for ‘surface effects’ on interpretation (Chomsky 1995) which involve topic-comment and focus-background structures that are typically associated with middle-field internal movement processes and exhibit morphological reflexes such as topic marking, focus marking, or definiteness effects in a variety of languages.²

If it is true that scrambling as represented by (1b) does in fact have ‘surface effects’ on interpretation, then the scrambling feature should be specified with regard to the particular interpretive effects that scrambling has in the respective examples. To achieve this goal we have to get a clear idea of what sort of effect is associated with the various ways of reorganizing the middle field.

Frey and Pittner (1998) and Pittner (1999), among others, have shown that adverbials in the German middle field are ordered according to a specific hierarchy of base positions. Such base positions are identified by a series of syntactic tests such as e.g. focus projection, Principle C effects, unmovable elements such as indefinite *wh*-elements, scope interactions etc. Although the authors do not adopt Cinque’s (1999) idea that adverbials project their own functional phrases, they argue that there is a base order of adverbials to the effect that sentence adverbials such as *glücklicherweise* (‘fortunately’), *offensichtlich* (‘obviously’) and *vermutlich* (‘presumably’), occupy a position that is higher than the position of the derived subject (SpecAgrsP).

- (2) *weil vermutlich wer den Studenten gesehen hat*
 since presumably somebody-NOM the student-ACC seen has

As far as scrambling to a pre-subject position is concerned, Frey (2000, 2004) has convincingly argued that in the middle field of the German clause, there is a designated position for topics directly above the base position of sentential adverbials. This topic position is supposed to host all topical phrases in the middle field, and only these.³

The evidence that this claim is based on includes a number of interesting observations, which can be used as syntactic tests for identifying the topic of a clause. The first test is instantiated by providing a specific context which forces a certain element in the clause to act as a sentence topic. Consider the following example:⁴

- (3) Context:
Es gibt etwas Neues über den amerikanischen Präsidenten.
 there is something new about the American president
 a. *Nächstes Jahr wird den amerikanischen Präsidenten*
 next year will the American president-ACC
wahrscheinlich ein Freund aus Europa für den
 probably a friend-NOM from Europe for the

Friedensnobelpreis vorschlagen.
 nobel peace prize propose

- b. *#Nächstes Jahr wird wahrscheinlich den amerikanischen
 next year will probably the american
 Präsidenten ein Freund aus Europa für den
 president-ACC a friend from Europe for the
 Friedensnobelpreis vorschlagen.*
 nobel peace prize propose

The context in (3) requires that the direct object functions as the topic of the clause.⁵ It should be clear that the notion of topic that is relevant here is an aboutness concept of topic in the sense of Reinhart (1981, 1995) rather than a familiarity concept of topic as advocated by Krifka (1992) and Rizzi (1997). Note that in many cases there is a preference for the subject to occupy the topic position preceding the sentence adverbial. This preference is due to the fact that the subject often acts as the unmarked topic of the clause, traditionally called “der Satzgegenstand”.

For a further criterion for the identification of a designated topic position Frey makes use of suggestions made by Kuno (1972) and Reinhart (1981, 1995). This criterion is based on the observation that a cataphoric pronoun has to relate to a topic. As the examples in (4) are taken to show, an expression in the middle field which is coreferential with a cataphoric pronoun has to occupy the position preceding sentence adverbials (for a different assessment of this criterion and the relevant evidence see section 4):

- (4) a. *Weil sie_i so exzellent gesungen hat, wird Anna Netrebko_i
 since she so excellently sung has will Anna Netrebko-NOM
 wahrscheinlich einen Vertrag an der Met bekommen.*
 probably a contract-ACC at the Met get
- b. **Weil sie_i so exzellent gesungen hat, wird wahrscheinlich
 since she so excellently sung has will probably
 Anna Netrebko_i einen Vertrag an der Met bekommen.*
 Anna Netrebko-NOM a contract-ACC at the Met get
- (5) a. *Weil sie_i so exzellent gesungen hat, werden die Kritiker
 since she so excellently sung has will the critics-NOM
 Anna Netrebko_i wahrscheinlich mit der Callas vergleichen.*
 Anna Netrebko-ACC probably with the Callas compare

- b. ??*Weil sie_i so exzellent gesungen hat, werden die Kritiker*
 since she so excellently sung has will the critics
wahrscheinlich Anna Netrebko_i mit der Callas vergleichen.
 probably Anna Netrebko with the Callas compare.

As for (5a), it should be clear that along with the direct object *Anna Netrebko*, the subject *die Kritiker* ('the critics') also functions as a topic.

It is well-known that non-referential expressions such as quantificational phrases like *keiner* ('nobody'), *fast jeder* ('almost everybody'), *bis zu 10 Personen* ('up to ten people') cannot undergo left dislocation. This observation can be taken to indicate that these phrases cannot be topics. As observed by Frey (2004), if these phrases occur in the middle field of a German sentence, they cannot appear in front of a sentence adverbial:

- (6) a. *In diesem Konzert hat erfreulicherweise keiner sein*
 in this concert has fortunately nobody his
Handy angelassen.
 phone left turned on
- b. **In diesem Konzert hat keiner erfreulicherweise sein*
 in this concert has nobody fortunately his
Handy angelassen.
 phone left turned on
- (7) a. *Gegen dieses Gesetz haben wahrscheinlich bis zu zehntausend*
 against this law have probably up to ten thousand
Personen demonstriert.
 people demonstrated
- b. **Gegen dieses Gesetz haben bis zu zehntausend Personen*
 against this law have up to ten thousand people
wahrscheinlich demonstriert.
 probably demonstrated

A further test for the identification of topics is based on the observation, originally due to Marga Reis (see Frey 2004), that there are particles in German which, when occurring in sentences with normal intonation, turn the phrases they are correlated with into topics. Such particles are *jedenfalls* ('at any rate') and special uses of *aber* ('however'). Again, in the middle field of the German clause, such topics have to precede sentence adverbials, as shown in (8):

- (8) a. *weil [Simon jedenfalls] erfreulicherweise heute zu Hause*
 since Simon at any rate fortunately today at home
geblieben ist
 stayed is
- b. **weil erfreulicherweise [Simon jedenfalls] heute zu Hause*
 since fortunately Simon at any rate today at home
geblieben ist
 stayed is

Note that particles such as *jedenfalls* ('at any rate') can also be associated with contrastively focused elements, in which case these elements can appear after a sentence adverbial:

- (9) *weil erfreulicherweise [Simon jedenfalls] heute zu Hause*
 since fortunately Simon at any rate today at home
geblieben ist (nicht aber SeBAStian)
 stayed is not however Sebastian

Additional evidence for a pre-subject topic position is provided by the observation that indefinite wh-elements can never be topics. We can then predict that these elements never precede sentence adverbials. This prediction is borne out by the facts. Although indefinite wh-elements do not in general resist movement – they can undergo A-movement as in (10a-b) – they cannot occur in front of sentence adverbials, as shown by (11):

- (10) a. *Gestern hat der Student wen nicht begrüßt.*
 yesterday has the student-NOM somebody-ACC not greeted
- b. *Gestern ist wer in der Bockenheimer Landstraße*
 yesterday is somebody-NOM in the Bockenheimer Landstraße
überfahren worden.
 run over been
- (11) a. *Gestern hat erfreulicherweise der Chef wen*
 yesterday has fortunately the boss-NOM somebody-ACC
befördert.
 promoted
- b. **Gestern hat wen erfreulicherweise der Chef*
 yesterday has somebody-ACC fortunately the boss-NOM
befördert.
 promoted

- c. **Gestern hat wer wahrscheinlich den*
 yesterday has somebody-NOM probably the
Studenten nicht begrüßt.
 student-ACC not greeted

Frey (2004) derives further evidence for a middle-field internal topic position fromthetic and presentational constructions. He claims thatthetic sentences like (12) and presentational sentences like (13) do not allow topical subjects. By “thetic sentence” he means intransitive sentences in which a falling accent on the subject induces the whole sentence to be in focus:

(12) *Das \TElefon läutet.*
 the telephone is ringing

(13) *Es spielt Max Greger für unsere Gäste die ganze Nacht.*
 it plays Max Greger for our guests the whole night

The fact that the subject ofthetic and presentational sentences cannot occur between a complementizer and a sentence adverbial is then taken as evidence for the existence of the relevant topic position:

(14) a. *Beim Abendessen hat leider das Telefon geläutet.*
 at dinner has unfortunately the telephone rung

b. ?*Beim Abendessen hat das Telefon leider geläutet.*
 at dinner has the telephone unfortunately rung

(15) a. *Es spielt erfreulicherweise Max Greger für unsere Gäste die ganze Nacht.*
 it plays fortunately Max Greger for our guests the whole night

b. **Es spielt Max Greger erfreulicherweise für unsere Gäste die ganze Nacht.*
 it plays Max Greger fortunately for our guests the whole night

It should be clear that the notion of a topic is not a very precise one. It is therefore not surprising that there is widespread disagreement as to what exactly should be understood by this term. In Gundel (1988), the notion of a topic is pragmatically defined in terms of a *Topic-Familiarity Condition* and a *Topic-Identifiability Condition*, which comes down to a combination

of the familiarity concept and the aboutness concept. Büring (1997) distinguishes between sentence internal topic ('S-Topics') as an improper part of the non-focus of a sentence (making the notion of Comment superfluous) and discourse topics. While the latter are established by a preceding question, he characterizes S-Topics in terms of a topic accent marked by a rising pitch on the so-called topic exponent, which then projects along the lines of the syntactic rules for focus projection. Furthermore, he makes a distinction between different uses of S-Topics: the contrastive topic and the partial topic. While the former is said to move the conversation away from an entity given in the discourse (16b), the latter is supposed to narrow down a given 'discourse topic', as in (17b) (Büring 1997: 56):

(16) A: *Glaubst du, Fritz würde diesen Anzug kaufen?*
 think you Fritz would this suit buy
 'Do you think Fritz would buy this suit?'

B: *[ICH]_T würde ihn sicher [NICHT]_F kaufen.*
 I would it certainly not buy
 'Well, I certainly wouldn't.'

(17) A: *Hat deine Frau fremde Männer geküsst?*
 has your wife other men kissed
 'Did your wife kiss other men?'

B: *[MEIne]_T Frau hat [KEIne]_F fremden Männer geküsst.*
 my wife has no other men kissed

Although cross-linguistic surveys of topic constructions (e.g. Gundel 1988; Primus 1993) claim that topics are generally located in the left periphery of the clause, it has clearly been demonstrated (Büring 1997; Frey 2004) that as far as German is concerned, there is no strict correlation between topics and the SpecCP position (the so-called "Prefield"). Neither can every constituent in SpecCP be considered a topic nor do topics have to move to this position. Büring (1997: 65) points out that topics can also occur in the middle field, which is in line with Frey's findings.

In all these varying interpretations of the notion of a topic, we can either detect the aspect of familiarity or the aspect of aboutness or both. For the purposes of the present reasoning it thus suffices to distinguish between familiarity topics and aboutness topics and identify the latter in terms of Frey's syntactic criteria. Furthermore, I will follow Büring (1997: 54) in not distinguishing between Comment and Background. The crucial distinction

is the one between focus and topic, and the latter is considered an (improper) part of the non-focus.

If his arguments concerning the clause-internal position of aboutness topics are on the right track, we can adopt Frey's conclusion that there is a designated high position for topics in the middle field of the German clause. Upon closer inspection, many examples of German scrambling will then have to be reinterpreted as instances of middle-field internal topicalization. The fact that indefinites can undergo scrambling to a pre-subject position does not necessarily conflict with the claim that scrambling can be middle-field internal topicalization. On the one hand, indefinites can function as topics if they have a specific reading. This is clearly shown by the contrast in (18) (Frey 2004):

- (18) a. *Maria will einen jungen Spieler_i unterstützen, damit er_i auf
 Maria wants a young player support so that he to
 ein Fußballinternat gehen kann.
 a football boarding school go can*
- b. *Damit er_i auf ein Fußballinternat gehen kann, will
 so-that he to a football boarding school go can will
 Maria einen jungen Spieler_i unterstützen.
 Maria a young player support*

While (18a) permits a specific as well as a non-specific reading of the indefinite, the indefinite topic in (18b), induced by the cataphoric pronoun, only has the specific interpretation. On the other hand, as pointed out by Rizzi (2003), even non-specific indefinite DPs can be topics provided they connect (overtly or covertly) to given information. This is shown by the Italian examples in (19) and (20):

(19) [Italian]

- A: *Mi sembra che ieri non hai fatto granché
 to-me (it) seems that yesterday not you-have done much
 per preparare l'esame...
 for preparing the exam*
- B: *Beh, un libro l'ho letto.
 ok a book it-(I)-have read*
- B': *Beh, uno dei libri che bisognava leggere per l'esame,
 ok one of the books that one-must read for the exam
 l'ho letto.
 it-(I)-have read*

(20) A: *Come mai Gianni è così nervoso?*
 why Gianni is so nervous

B: #*Una brava segretaria, la cerca da molto tempo, ma*
 a good secretary her (he)-seeks for a long time but
non la trova.
 not her finds

B': *Cerca da molto tempo una brava segretaria, ma non la trova.*
 seeks for a long time a good secretary but not her finds

Finally, phrases of the middle field which have undergone 'scrambling' to a pre-subject position do not exclusively act as topics. As we will see in the next section, they can also function as a focus.

3. The clause-internal higher focus position

Across languages, the focus of a sentence is marked in various ways. As is familiar from languages like English and German, there is a close correlation between focus and pitch accent. However, as pointed out in Drubig (1994), such a correlation can only be found in a minority of languages. Other devices for the marking of focus are morphological markers as in languages such as Somali (Drubig 1994: 13), Quechua, Mongolian, Duala, Marathi, Tamil (Gundel 1988) and word order as in so-called 'focus-configurational languages' such as Kashmiri (Bhatt 1999), Hungarian (É. Kiss 1994), Turkish (Kural 1997), Armenian, Basque, Finnish, Georgian (see Primus 1993: 890). As shown in É. Kiss (1995a), in languages which have overt focus movement, there is considerable variation as to the landing sites of this operation.⁶ Rizzi (1997) has argued that there is a left-peripheral position for contrastive focus in Italian. According to Belletti (2002), Italian also has a position for informational focus in the low IP area. Gundel (1988) points out that the favored position for focus in verb final languages is the preverbal position. However, even in the latter type of languages focused constituents can also appear sentence-initially as e.g. contrastive focus in Turkish or split focus in Finnish (Primus 1993: 890f.).

As far as German is concerned, it is uncontroversial that focus marking is a matter of prosody. However, it has also been argued that German shows a preference for placing focused constituents of the middle field in the left periphery of the VP as well as at the left edge of the middle field, i.e. in a position between C and IP. Frey (2004) presents evidence that there is a

position between C and the pre-subject topic position which hosts contrastively focused elements, as in examples which display the intonation contour of so-called *I-topicalization* ('topicalization by intonation', Jacobs 1997, 2001):

- (21) *weil* √*ALLe* *Politiker* *vermutlich* \N*ICHT* *korrupt sind*
 since all politicians presumably not corrupt are
 (*höchstens einige*)
 (at most some)

In this construction, the first element which bears the fall-rise pitch and the second element with the falling intonation induce a clear contrast. Krifka (1998: 99) considers examples such as (21) as contrastive topic constructions which involve a focus within the topic constituent, the focus being realized by a slight fall followed by a strong rise. Other examples which show a contrastive focus in a pre-subject position are given in (22)

- (22) a. *weil in MÜNchen die besten Fußballer spielen*
 since in Munich the best soccer-players play
 (*und nicht in Bremen*)
 (and not in Bremen)
- b. *weil den StuDEnten Maria geküsst hat*
 since the student-ACC Maria-NOM kissed has
 (*und nicht den Professor*)
 (and not the professor)
- c. *Heute wird Anna NeTREBko erfreulicherweise die*
 today will Anna Netrebko-NOM fortunately the
Violetta singen (und nicht Katia Ricciarelli)
 Violetta-ACC sing (and not Katia Ricciarelli)

Frey (2004) takes examples like (23), in which such contrastively focused elements can precede sentence adverbials as well as topics, as evidence for the claim that there is a focus position between C and sentence adverbials which precedes the topic position:

- (23) ?*weil GRÜN Hans erstaunlicherweise die Tür gestrichen hat*
 since green Hans astonishingly the door painted has
 (*und nicht ROT*)
 (and not red)

The claim that the contrastive focus in such examples is not in the topic position is further supported by the fact that this process of focalization can affect elements such as quantified expressions and non-referential frame adverbials which according to Frey cannot occur in the topic position (but nevertheless precede a sentence adverbial):

- (24) a. *da mindestens \EIN Bild Otto zum Glück*
 since at least one picture-ACC Otto-NOM luckily
heute fast \JEdem verkaufte
 today nearly everyone-DAT sold
- b. *weil KÖRPERLICH die Spieler offensichtlich am Ende sind*
 since physically the players obviously finished are
(nicht seelisch)
 (not mentally)

Although examples such as (23) seem to demonstrate that contrastively focused elements precede topics in pre-subject position, I do not think that Frey is right in claiming that this is the obligatory order. Examples such as (25) show that the contrastive focus can also be preceded by a topic:⁷

- (25) a. *weil die Bayern ver\LIEren offensichtlich nie und \NIMmer*
 since the Bayern lose obviously never
wollten
 wanted
- b. *weil Hans dem StuDENten erstaunlicherweise seine*
 since Hans the student-DAT astonishingly his
Wohnung überlassen hat
 apartment-ACC left has

Split DPs in the middle field may illustrate the same point. Following Krifka (1998: 101) and unlike Frey (2004), I assume that the dislocated part of a DP can have the status of a focus. If this assumption is correct, then examples such as (26) can be taken as further evidence for the claim that a topic may precede a focused element in pre-subject position:

- (26) *weil der Student HEMden_i leider [nur BLAUe t_i]*
 since the student-NOM shirts-ACC unfortunately only blue ones
gekauft hat (aber Pullover sowohl gelbe als auch rote)
 bought has (but pullovers yellow as well as red ones)
 ‘since of the shirts, the student unfortunately only bought blue ones
 (but of the pullovers he bought yellow ones as well as red ones)’

If these considerations are on the right track, we have reason to assume that the left edge of the middle field is characterized by the same distribution of Topic and Focus positions that Rizzi (1997) assumes for the left periphery of the clause (Topic Phrases being recursive):

- (27) C⁰ – Topic – Focus – Topic – sentence adverbial – subject

This distinction between different kinds of discourse configurational positions in the left periphery of the middle field enables us to explain some surprising properties of middle-field internal movement operations that are at variance with well-established generalizations on scrambling. It is well known that unlike scrambling in Japanese, scrambling in German cannot take place out of an embedded finite clause (Grewendorf and Sabel 1999):

- (28) [Japanese]

- a. [_{AgrsP} *sono hon-o_i* [_{Agrs'} *John-ga* [_{VP} *Bill-ni* [_{CP} *t_i'*
 that book-ACC John-NOM Bill-DAT
Mary-ga t_i motteiru to] itta]]] (koto)
 Mary-NOM have C said fact
 (That book, John said to Bill that Mary has)
- b. **dass* [_{AgrsP} *dieses Buch_i* [_{AgrsP} *Hans* [_{VP} *dem Studenten*
 that this book-ACC Hans-NOM the student-DAT
gesagt hat [CP dass t_i' Maria t_i besitzt]]]]
 said has that Maria-NOM owns
 (That book, Hans said to the student that Mary has)

In conflict with this generalization, Haider and Rosengren (1998) have pointed out that what they call *T-scrambling* permits long extraction from finite clauses:

- (29) a. *dass just DIEse Frage_i alle glaubten dass sie*
 that exactly this question everybody believed that they
unbedingt t_i beantworten müssten
 absolutely answer should
- b. *dass [hier zu ver√LIEren]_i erfreulicherweise \NIEmand*
 that here to lose fortunately nobody
glaubt dass sie t_i sich leisten können
 believes that they refl. afford can

It is obvious that T-scrambling has to be interpreted as an instance of focus movement. The data in (29) is thus in accordance with the above reasoning about the position of a middle-field initial focus position. The difference between scrambling as topic movement and scrambling as focus movement is also reflected in the fact that unlike the former, the latter triggers *Weak Crossover Effects*, cf. (30) and (31)

- (30) *weil den Studenten_i erfreulicherweise seine_i Freundin*
 since the student-ACC fortunately his girlfriend-NOM
abgeholt hat
 picked-up has
- (31) **da mindestens √Einen Studenten_i erfreulicherweise sein_i*
 since at least one -student-ACC fortunately his
Freund für \JEdes Amt vorschlagen würde
 friend-NOM for every position propose would

We can therefore conclude that what has traditionally been subsumed under the notion of *scrambling* has in fact to be analyzed as an instance of focus movement. Given that so far we have come across two different kinds of ‘scrambling’, namely topic movement and focus movement to the left periphery of the middle field, the question arises as to which kind of scrambling is subject to the above-mentioned clause-boundedness constraint.

Examples such as (32) have led people to assume that focus movement violates island constraints:

- (32) a. Sam even saw the man who was wearing a _F[RED] hat. (Rooth 1985)
- b. *Der Richter wollte lediglich wissen, ob dem Angeklagten*
 the judge wanted only know if the defendant
bekannt war wem das ROte Auto gehörte.
 knew who was the owner of the red car

However, Drubig (1994) has shown that examples like (32) are not necessarily counterevidence against an account in terms of LF-movement, and É. Kiss (1994) and others have presented evidence from Hungarian that overt focus movement not only observes island constraints (33a) but can also be applied successive-cyclically (33b):

(33) [Hungarian]

- a. **JÁNOS-T_i hallott-am [DP a követelés-t [CP t_i' hogy
John-ACC heard-I the demand-ACC that
bocsás-s- ák el t_i]]*
fire-Subjunc-3PL Prev
'It was John who I heard the demand that they fire.'
- b. ?*JÁNOS-T_i hallott-am [CP t_i' hogy elbocsájt-ják t_i]*
John-ACC heard I that fire- they
'It was John who I heard that they would fire.' (É. Kiss 1994: 34)

Before continuing with the issue of long focus scrambling I would like to turn to another problem for the traditional theory of scrambling that has to do with remnant scrambling. The scrambling theory developed in Grewendorf and Sabel (1994) implies that remnant scrambling should be ungrammatical since scrambling out of an adjoined category is disallowed. This prediction is borne out by examples such as (34):

- (34) a. **dass [t_i zu füttern]_j [den Hund]_i keiner t_j versuchte*
that to feed the dog-ACC nobody tried
- b. **dass [t_i zu füttern]_j keiner [den Hund]_i t_j versuchte*
that to feed nobody the dog-ACC tried

However, there seems to be an empirical problem for this account. It can be observed that examples such as (34) significantly improve if the preposed remnant is focused, as in (35):

- (35) ?*dass [t_i zu FÜTTERN]_j [den Hund]_i keiner t_j versuchte*
that to feed the dog-ACC nobody tried
(*sondern nur zu streicheln*)
(but only to stroke)

A similar effect can be observed if the remnant is the fall-rise part of an I-topicalization:

- (36) a. ?*dass* [t_i zu $\sqrt{F\ddot{U}T}t_ern$] $_j$ [*den Hund*] $_i$ \KEIner t_j *versuchte*
 that to feed the dog-ACC nobody tried
- b. ?*dass* [t_i zu $\sqrt{F\ddot{U}T}t_ern$] $_j$ \KEIner [*den Hund*] $_i$ t_j *versuchte*

The empirical problem posed by examples like (35) and (36) can be solved on the basis of the account of remnant movement argued for in Grewendorf (2003). We will see that such a solution crucially appeals to a focus position at the left edge of the middle field and thus provides further evidence for the existence of such a position.

Using crosslinguistic evidence from a variety of languages, Grewendorf (2003) argues that remnant movement is subject to the constraint in (37):

(37) *Constraint on Remnant Movement*

Remnant movement is prohibited unless it is of a higher type than internal movement.

The notion of a hierarchy of movement types, which this constraint crucially involves, is explained and defended along the lines of the idea of improper movement. It is suggested that movement type A is higher in the hierarchy than movement type B if B-movement can feed A-movement but not vice versa. Grewendorf (2003) extensively shows that there is evidence for the hierarchy given in (38):

(38) *Hierarchy of Movement Types*

- A'-movement as operator movement ('focus movement')
- A'-movement as non-operator movement ('topic movement')
- Adjunction movement ('scrambling')
- A-movement

Let us call the movement operation that creates a remnant "internal movement". The constraint in (37) then implies that remnant A'-movement should be possible if internal movement is A-movement. On the other hand, remnant A-movement should be ungrammatical if internal movement is also A-movement. As shown in Grewendorf (2003), these predictions are in fact borne out and the constraint in (37) not only accounts for the ungrammaticality of (34) but accommodates a vast range of remnant movement phenomena. As far as the examples in (35) and (36) are concerned, (37) combined with (38) correctly predict the grammaticality of these examples if we assume that the remnants in these examples are located in focus position

while internal movement is topic movement. That this account is in fact correct can be seen from examples in which the focus-topic domain is marked by a sentence adverbial:

(39) ?*dass* [t_i zu FÜTTERN] $_j$ [*den Hund*] $_i$ *erfreulicherweise* *keiner* t_j
 that to feed the dog-ACC fortunately nobody
versuchte (*sondern nur zu streicheln*)
 tried (but only to stroke)

(40) ?*dass* [t_i zu √FÜTtern] $_j$ [*den Hund*] $_i$ *erfreulicherweise* \KEIner t_j
 that to feed the dog-ACC fortunately nobody
versuchte
 tried

We have already seen that there is long focus movement targeting a middle-field internal position. We may then wonder if and to what extent this phenomenon can be combined with remnant movement configurations and thus provide us with evidence concerning our claims about the discourse configurational structure of the middle field. The examples under (41) show that internal movement to the topic position of the embedded middle field can be followed by long movement of the remnant to the focus position of the matrix middle field.

- (41) a. ?*weil* [t_i zu √KÜSsen] $_j$ *Hans* *glaubt* [$_{CP}$ [*diese Frau*] $_i$
 since to kiss Hans-NOM thinks this woman-ACC
erfreulicherweise \niemand t_j *versuchen werde*]
 fortunately nobody try will
- b. ?*weil* [t_i zu √KÜSsen] $_j$ *Hans* *glaubt* [$_{CP}$ *dass* [*diese Frau*] $_i$ *erfreulicherweise* \niemand t_j *versuchen werde*
 woman $_i$ fortunately nobody try will

The acceptability of the examples in (41) is in line with our constraint on remnant movement, as expressed in (37) and (38), and can be taken as further evidence for the existence of two different kinds of positions in the left periphery of the middle field. This conclusion receives strong empirical support from the fact that the grammaticality of long remnant movement considerably decreases if the internally moved constituent is also focused as in (42):

- (42) a. **weil* [t_i zu $\sqrt{KÜSsen}$] $_j$ Hans glaubt [$_{CP}$ *dass* [$_{den}$
 since to kiss Hans-NOM thinks that the
 $_{STUDENTEN}$] $_i$ \niemand t_j versuchen werde]
 student-ACC nobody try will
- b. **dass* [t_i zu $FÜTTERN$] $_j$ erfreulicherweise niemand [$_{den}$
 that to feed fortunately nobody the
 $_{HUND}$] $_i$ t_j versuchte
 dog tried

According to my intuition, there is a clear contrast between (41) and (42). We can assume that the ungrammaticality of (42) is due to the fact that internal movement is of the same type as remnant movement, thus violating the constraint (37) on remnant movement. Since the account of (41) and (42) appeals to different kinds of positions in the left periphery of the middle field, it can be taken as further evidence for the discourse configurational structure of the middle field.

We have not yet dealt with the crucial question as to why there is long focus scrambling but no long topic scrambling. To answer this question let us proceed from the plausible idea that (for reasons of improper movement) there is no movement from the external clausal periphery to internal peripheries. We could then hypothesize that the ungrammaticality of long topic scrambling is due to the fact that long topic movement has to pass through the external left periphery of the embedded clause, from which further movement to a position in the higher middle field is impossible.⁸ As far as long focus scrambling is concerned, my claim is that unlike long topic scrambling, long focus scrambling does not need to pass through the left periphery of the embedded clause. There is evidence from focus configurational languages such as Hungarian and Berber that this claim is in fact correct. As can be seen from the Hungarian example in (43), long focus movement in Hungarian is possible despite the fact that the embedded focus position is occupied:

(43) [Hungarian]

[$_{VP}AZ$ *ING-ET*] $_i$ [$_{V}$ *kér-né-m* [$_{CP}$ t_i ' *hogy* [$_{TP}$ [$_{VP}$ *HOLNAP-RA*
 the shirt-ACC request-COND-1SG that tomorrow-for
 $_{V}$ *vasal-d* *ki* t_i]]]]]]]
 iron_{Imperat.2SG} PREV

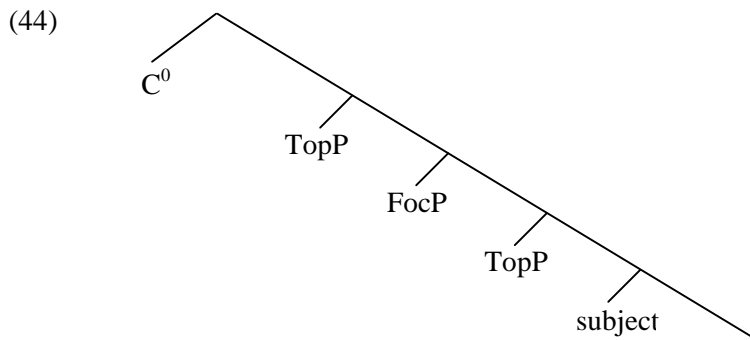
'It is the shirt that I would request that you iron for tomorrow.'

(É. Kiss 1994: 33)

As É. Kiss (1994) points out, long focus movement cannot be movement from focus position to focus position, as it does not require the intermediate focus positions between the landing site and the original position to be empty. Similar observations have been made with respect to Berber (Choe 1987; Stoyanova 2004).⁹ Without going into the details of a theoretical analysis, we can therefore assume that long focus movement does not need to proceed in a successive-cyclic manner through every intervening focus position. Although focus movement respects complex-NP islands in Hungarian (see (33)), this is obviously not the case with respect to islands created by an element in an intervening focus position. The situation is thus similar to what we find with long wh-movement violating wh-islands.

Notice that we can also conclude from these considerations that the ungrammaticality of (42) cannot be due to the fact that the embedded middle-field internal focus position is occupied and thus is not available as an intermediate position for long focus movement. The ungrammaticality of (42) can only be due to the constraint on remnant movement and thus provides further evidence in support of this constraint.

To summarize this section, we have seen that there is evidence from German that between the C^0 position and the surface position of the subject, topic and focus positions have to be assumed which structure the German middle field in the way represented in (44):



The existence of higher topic and focus positions in the German middle field allows us to specify the operations which are traditionally subsumed under the notion of scrambling to a pre-subject position in terms of different kinds of target positions and with respect to the distinct properties associated with different types of movement. From this point of view, the notion of scrambling to a pre-subject position dissolves into two kinds of discourse configurational movement.

In what follows I will focus on the kind of scrambling which targets a position below the subject. The crucial question will be whether there is evidence that scrambling to a position below the subject can also be reanalyzed as discourse configurational movement.

4. The clause-internal lower focus position

From a typological point of view, Gundel (1988) points out that the favored position for focus in verb final languages is the preverbal position. Although this generalization is widely accepted as a rough description of a tendency in verb final languages, there is much less agreement when it comes to giving a structural analysis of the notion of a 'preverbal constituent'. Kennelly (1999) analyzes the preverbal appearance of focused elements in Turkish as right-adjunction to VP combined with raising of the verb to final I^0 .

As for the SOV languages Hindi-Urdu and Malayalam, where the focus position is preferably left-adjacent to the verb, it has been claimed (Kidwai 1999) that whenever preverbal focus involves a non-canonical linear order, these non-canonical orders are at least partly the result of scrambling non-focused preverbal elements to a position on the left of the focused constituent.¹⁰ Positional focusing has thus been related to a process of defocusing associated with leftward clause-internal scrambling.¹¹ In cases of long scrambling of an XP, preverbal focusing is licensed only for a constituent located in the clause from which the scrambled XP originates (Kidwai 1999: 239).¹²

(45) [Hindi]

a. *kitaab_i mē~nē [SIITAA-KO t_i dene-ka] vaadaa kiiyaa.*
 book I Sita-DAT to give-GEN promised
 'It was Sita that I had promised to give the book to.'

b. *[siitaa-ko kitaab dene-ka]_i MĒ-NĒ t_i vaadaa kiiyaa.*
 Sita-DAT book to give-GEN I promised
 'It was I who had promised to give the book to Sita.'

(Kidwai 1999: 239f)

Kidwai (1999) analyzes this sort of scrambling as "Morphology-serving PF-movement", which is driven by the need to establish an adjacency relation between the verb and the focused category. It should be clear that this kind of movement, which only serves the altruistic purpose of paving the way for the focalization of another element, cannot be analyzed as feature-driven

syntactic movement. However, if it is true, as claimed by Kidwai (1999: 232), that scrambled XPs tend to be interpreted as topics, there might be a selfish reason for moving these XPs that has to do with discourse configurational requirements and is amenable to syntactic analysis.

Before we turn to the situation in German, it is worth noting the remarkable fact that many (often typologically unrelated) languages in which focus is marked by syntactic position define this focus position in terms of proximity to the verb. For example, the focus position is adjacent to the verb in languages such as Basque (Ortiz de Urbina 1999), Hungarian (Horvath 1986), Aghem (Rochemont 1986), Georgian (Nash 1995), Malayalam (Jayaseelan 1996), Western Bade, Tangale (Tuller 1992), and Hindi-Urdu (Kidwai 1999) (see also É. Kiss 1995a). Given that German as a V2-language with SOV base order provides two verb positions which can simultaneously be filled, it does not seem unreasonable to expect that more than one focus position is licensed in the internal area of the German clause. We have already seen in section 2 that there is evidence for a higher topic-focus field between C^0 and the derived position of the subject. In this section I would like to argue that there is also a lower topic-focus area in the left periphery of the VP.

As far as preverbal focus in verb-final structures is concerned, Zubizarreta (1998) provides an account for the interaction of nuclear stress and focus in German according to which nuclear stress falls on the complement immediately to the left of the verb in verb-final structures and on the last constituent in V2 structures. The *Nuclear Stress Rule* is considered a device which determines phrasal prominence by providing the “lowest” constituent with nuclear stress.¹³ The relation between prosody and focus is determined by the *Focus Prosody Correspondence Principle* which states that the focused constituent (or F-marked constituent) of a phrase must contain the intonational nucleus of that phrase.¹⁴ The F-structure of the sentence is constrained by the *Focus Prominence Rule* (Zubizarreta 1998: 21), according to which, of two sister categories C_i and C_j , C_i is more prominent than C_j if C_i is marked [+F] and C_j is marked [-F].

It is obvious that the assignment of nuclear stress and the determination of focus prominence may conflict in cases where the output of the former contradicts the output of the latter. This conflict arises whenever the focalized element is not in the position where it receives prominence via assignment of nuclear stress. In Cinque’s (1993) theory, the assignment of nuclear stress as part of formal sentence grammar applies blindly to both the phrase constituting the focus and to the phrase constituting the non-focus.

Here it is discourse grammar that determines that in such a situation of conflict, the non-focused constituent will be destressed and the main stress falls on the most deeply embedded constituent left in the phrase that qualifies as focus.

In SOV languages, such a conflict occurs in sentences with noncontrastive focus when (relevant) defocalized material intervenes between the focused element and the verb:

- (46) a. *Wem hast du das Geld gegeben?*
 to-whom have you the money given
- b. *Ich habe dem KASSIERER das Geld gegeben.*
 I have the cashier-DAT the money-ACC given
- (Lenerz 1977: 43)

In the Romance languages, the conflict arises in situations where a wh-question such as (47) has to be answered (Zubizarreta 1998: 125f):

- (47) *Quién te regaló la botella de vino?*
 who to-you gave the bottle of wine

Neither an SVO order nor a VSO order provide a natural answer to the question in (47), which requires an answer with a narrow focus on the subject that is not to be contrastively interpreted. The only possible way of answering (47) with a full sentence is a VOS structure such as (48) (with the subject not right-dislocated) where nuclear stress falls unambiguously on the focused subject:

- (48) *Me regaló la botella de vino MARÍA.*
 to-me gave the bottle of wine Maria

Since VOS is a derived structure, we can conclude that the underlying structure (be it SVO or VSO) represents a configuration where the *Nuclear Stress Rule* and the *Focus Prominence Rule* conflict. One strategy to resolve this conflict consists of what Zubizarreta calls *p-movement* ('prosodically motivated movement'). P-movement is considered as an operation that ensures that the focalized constituent is in a position to receive prominence via the *Nuclear Stress Rule* so that the output of the latter is compatible with the output of the *Focus Prominence Rule*. Viewed as an instance of p-movement, the kind of reordering of the underlying structure that has taken

place in (48) serves to put the subject in a position to receive nuclear stress via the *Nuclear Stress Rule*.

Although the type of scrambling that is analyzed as p-movement is not triggered by ‘feature checking’, Zubizarreta (1998) considers it to be a local syntactic operation that affects two metrical sister nodes in order to change a prosodically uninterpretable structure. The syntactic nature of this operation follows from the fact that it feeds the *Nuclear Stress Rule*. Since the latter is sensitive to hierarchical structures, it is assumed to apply in the syntax (Zubizarreta 1998: 141). It then follows that p-movement must also apply in the syntax.

While languages such as Spanish, Italian and French are said to resolve cases of conflict between *Nuclear Stress Rule* and the *Focus Prominence Rule* via scrambling viewed as p-movement, Zubizarreta offers a totally different analysis for similar conflicts in the Germanic languages. She proceeds from the observation that German verb-final structures constitute a *prima facie* counterexample to the traditional formulation of the *Nuclear Stress Rule*, which relies solely on constituent structures. The claim that in German, assignment of nuclear stress is sensitive to selectional properties, is illustrated by a number of modifier-complement asymmetries in verb-final structures (reported by Truckenbrodt 1993). For example, the PP which carries nuclear stress in (49a) is interpreted as an argument of the verb, while the PP in (49b), where nuclear stress falls on the verb, is interpreted as a locative adjunct (Zubizarreta 1998: 51) (the syllable which bear nuclear stress is indicated by capital letters):

- (49) a. *Peter hat an einem PaPIER gearbeitet.*
 Peter has on a paper worked
 ‘Peter worked on a paper.’
- b. *Peter hat an einem kleinen Tisch geARbeitet.*
 Peter has on a small table worked
 ‘Peter worked on a small table.’

Similarly, if the PP is a temporal adjunct, nuclear stress is on the verb (50a), but if the PP is a resultative complement of the verb, nuclear stress falls on the PP (50b):

- (50) a. *Er hat sie [VP im Schlaf [VP geKÜSST]].*
 he has her in-the-sleep kissed
 ‘He kissed her while sleeping.’

- b. *Er hat sie [VP in den SCHLAF geküsst].*
 he has her in the sleep kissed
 'He kissed her to sleep.'

In view of the different ways nuclear stress is assigned, Zubizarreta suggests a modularization of the *Nuclear Stress Rule*. While for languages such as Spanish and Italian, the *Nuclear Stress Rule* is based on a notion of "lowest" constituent which crucially refers to asymmetric c-command,¹⁵ the version relevant to the Germanic languages defines the corresponding notion in terms of "selectional ordering" (see Zubizarreta 1998: 52).¹⁶

It is a crucial property of Zubizarreta's account of nuclear stress in the Germanic languages that cases of potential contradiction between the *Nuclear Stress Rule* and the *Focus Prominence Rule* are not resolved by moving a defocalized constituent immediately above the focused constituent in order to ensure that the latter is in a position to receive nuclear stress by the former rule. As far as languages such as English and German are concerned, a conflict between the two rules is resolved by the assumption that defocalized constituents are metrically invisible for the *Nuclear Stress Rule* in these languages. Let us illustrate this strategy by an example. As predicted by the *Nuclear Stress Rule* and the *Focus Prosody Correspondence Principle*, a sentence such as (51a) can have any of the Focus-structures shown in (51b):

- (51) a. *Gestern hat Hans in Berlin Anna NeTREBko*
 yesterday has Hans-NOM in Berlin Anna Netrebko-ACC
gesehen.
 seen
- b. [_F *Gestern hat Hans in Berlin* [_F [_F *Anna NeTREBko*]
gesehen]]

(51) can thus serve as an answer to the questions listed in (52):

- (52) a. *Was ist passiert?*
 what is happened
 'What happened?'
- b. *Was ist dem Hans gestern in Berlin passiert?*
 what is to Hans yesterday in Berlin happened
 'What happened to Hans yesterday in Berlin?'
- c. *Wen hat Hans gestern in Berlin gesehen?*
 who-ACC has Hans-NOM yesterday in Berlin seen

On the other hand, if nuclear stress is on the subject in (51), as indicated in (53a), then the F-structure must be as in (53b), and (53a) can have (53c) as its context question but not (52a):

- (53) a. *Gestern hat HANS in Berlin Anna Netrebko gesehen.*
yesterday has Hans in Berlin Anna Netrebko seen
b. *Gestern hat [_FHANS] in Berlin Anna Netrebko gesehen*
c. *Wer hat gestern in Berlin Anna Netrebko gesehen?*
who-NOM has yesterday in Berlin Anna Netrebko-ACC seen

According to Zubizarreta, this fact suggests that in German (as well as in English), only F-marked constituents are “visible” for the *Nuclear Stress Rule*. If the defocalized material that intervenes between the subject and the verb in (53a) were visible, then the direct object as the lowest selectional element would unambiguously receive nuclear stress. Analyzing the defocalized constituent as metrically invisible thus ensures that a contradictory situation between the *Nuclear Stress Rule* and the *Focus Prominence Rule* is avoided. Zubizarreta’s strategy of avoiding such a situation is thus not different from Cinque’s (1993) solution in terms of a destressing mechanism determined by discourse grammar. Either approach is forced to postulate a stipulative mechanism in order to resolve potential conflicts between stress assignment and focus prominence, and such a stipulation is necessary since the two approaches share the assumption that stress has to be assigned to a low preverbal position.

It is exactly the latter hypothesis that has prevented people from assuming a dedicated preverbal focus position (see e.g. Krifka 1998). Since such a position would have to be a low position in order to bring focus prominence into line with stress assignment, the assumption of a preverbal focus position would face the following dilemma: if movement to this position preceded movement to Case positions, the latter would constitute an instance of improper movement; if movement to Case positions preceded movement to the focus position, the latter would constitute a lowering operation.

In the spirit of Zubizarreta’s idea that only F-marked constituents are “visible” for stress assignment I will assume that stress assignment is directly related to the presence of an F-feature such that F-marked constituents, which have to move to the specifier of a Focus Phrase as an instance of “ criterial movement” in the sense of Rizzi (2004), receive stress in the specifier position of a Focus Phrase. Such an account enables us to dispense with the assumption that elements undergo movement for the altruistic purpose of

putting other elements into the appropriate position for stress assignment. I will rather assume that displacement in the middle field that is not triggered by Case is the result of the configurational interplay of scrambling as topic movement and scrambling as focus movement.¹⁷

In what follows I will distinguish between a higher and a lower area of the German middle field. The higher part is represented by the functional area that affects the subject. In other words, the higher part includes the area between C^0 and T^0 . The lower part is represented by the area below T^0 . It includes the functional area that affects the objects. The border between the higher and the lower part of the middle field is marked by certain classes of adverbials which follow the subject and precede the objects.

Roughly speaking, these adverbials are located between the agreement area of the subject and the agreement area of the objects. The classes of such adverbials include instrumental adverbs such as *mit dem Bohrer* ('with the drill') (54a), comitative adverbs such as *mit einem Freund* ('with a friend') (54b), locative adverbs such as *in the office* ('im Büro') (54c), and subject-related adverbs such as *gerne* ('with pleasure'), *absichtlich* ('intentionally') and *freiwillig* ('voluntarily') (54d) (see Frey and Pittner 1998).^{18, 19}

- (54) a. *weil der Student mit einem Bohrer das Schloss öffnete*
 since the student-NOM with a drill the lock-ACC opened
- b. *weil der Student mit einem Freund die Universität*
 since the student-NOM with a friend the university-ACC
besuchte
 visited
- c. *weil der Student in der Mensa den Koch beleidigte.*
 since the student-NOM in the canteen the cook-ACC offended
- d. *weil Hans absichtlich den Computer zerstörte*
 since Hans intentionally the computer destroyed

Following Frey and Pittner (1998) and Jacobs (1993), I will further distinguish an area of the middle field that is closely connected with the verb and that includes elements which follow sentence negation and cannot undergo scrambling. Such "integrated" elements, which form part of what has been called the "minimal domain of the verb", are PP-complements (55), predicative NPs and APs (56), resultative predicates (57), and parts of idiomatic verbal expressions (58):

- (55) a. *Angela hat vorher die Gläser auf den Tisch gestellt.*
 Angela has earlier the glasses onto the table put
 b. **Angela hat vorher auf den Tisch die Gläser gestellt.*
 c. *dass Angela die Gläser auf den Tisch nicht gestellt hat*
 that Angela the glasses onto the table not put has
 (*only constituent negation*)
- (56) a. *Er ist nicht Präsident geworden.*
 he is not president become
 ‘He has not become president.’
 b. **Er ist Präsident nicht geworden.*
- (57) a. *Er hat den Teller leer gegessen.*
 he has the plate empty eaten
 ‘He ate everything on the plate.’
 b. **Er hat leer den Teller gegessen.*
 c. **Er hat den Teller leer nicht gegessen.*
- (58) a. *Sie hat das Publikum in Begeisterung versetzt.*
 she has the audience with enthusiasm filled
 b. **Sie hat das Publikum in Begeisterung nicht versetzt.*
 she has the audience with enthusiasm not filled
 (Frey and Pittner 1998: 498f)

The crucial assumption that I would like to argue for is that there is not only a topic-focus field positioned above the agreement area of the subject, i.e. above AgrsP, but also above the agreement area of the objects, i.e. above AgroP.²⁰ This assumption implies that main stress has to fall on the specifier of a focus phrase. Non-focused material that intervenes between the lower focus and the verb may then either be “integrated” in the sense of Jacobs (1993) or be “invisible” to the Nuclear Stress Rule due to its featural make-up as a lower topic (see section 5).

Let us consider an example such as (59):

- (59) a. *Was hat Peter sorgfältig gereinigt?*
 what has Peter carefully cleaned
 b. *(Ich glaube), dass Peter erfreulicherweise den*
 I think that Peter-NOM fortunately the
COMPUTER sorgfältig gereinigt hat.
 computer-ACC carefully cleaned has

How can we decide whether the focalized object in (59b) is in a specific focus position or in the familiar target position of the raised object (SpecAgroP or outer Spec of vP)? The presence of the sentence adverbial only shows that the object is not in the higher focus position of the middle field. According to standard assumptions (Frey and Pittner 1998, Pittner 1999), the manner adverbial *sorgfältig* ('carefully') is a low adverbial, which is adjoined to the VP, so that we can only conclude that the direct object is not in its base position within the VP.²¹

- (60) *weil Hans den Artikel von Chomsky nicht sorgfältig gelesen hat.*
 since Hans the paper by Chomsky not carefully read has

A closer look at ditransitive verbs will provide evidence that there is in fact a focus position in front of the position to which the direct object in German raises for reasons of Case. Consider the contrast between (61) and (62), originally observed by Lenerz (1977):

- (61) a. *Wem hat der Kassierer das Geld gegeben?*
 (to) whom has the cashier-NOM the money-ACC given
 b. *Der Kassierer hat erfreulicherweise das Geld dem KUNDEN gegeben.*
 the cashier-NOM has fortunately the money-ACC the customer-DAT given
 c. *Der Kassierer hat erfreulicherweise dem KUNDEN das Geld gegeben.*
 the cashier-NOM has fortunately the customer-DAT the money-ACC given
- (62) a. *Was hat der Kassierer dem Kunden gegeben?*
 what-ACC has the cashier-NOM the customer-DAT given
 b. *Der Kassierer hat erfreulicherweise dem Kunden DAS GELD gegeben.*
 the cashier-NOM has fortunately the customer-DAT the money-ACC given
 c. *?Der Kassierer hat erfreulicherweise das GELD dem Kunden gegeben.*
 the cashier-NOM has fortunately the money-ACC the customer-DAT given

In the unmarked order, the indirect object of the verb *geben* ('give') has to precede the direct object. Although (62c) is marked, it is nevertheless a possible answer to the question (62a) (see also Krifka 1998: 91). It should then be clear that the focalized direct object in (62c) does not occupy the familiar Case position of the direct object. Since the indirect object usually precedes the object at the surface, the direct object in (62c) must have undergone movement to a position higher than its Case position.²² If we made the natural assumption that the focalized constituents occupy the same position in (61) and (62), then (61c) would confirm the hypothesis that there is a position for focus in front of the Case position of the direct object.

The claim that the focused direct object in (62) as well as the focused indirect object in (61) have undergone movement to a focus position receives support from the fact that for many German speakers (including myself) there is a Weak Crossover effect in examples such as (63), which can be taken to show that the focused objects have undergone operator movement:²³

- (63) a. *?*Der Kassierer hat erfreulicherweise dem KUNDEN_i sein_i Geld gegeben.*
the cashier-NOM has fortunately the customer-DAT
his money given
- b. *?*Der Student hat erfreulicherweise das KIND_i seinen_i Eltern gebracht.*
the student-NOM has fortunately the child-ACC
his parents-DAT brought

Further evidence for a focus position located in the area between AgrsP and AgroP can be provided if we compare the examples in (64a) and (64b), which contain the negative polarity element *je* ('ever'):

- (64) a. Question: *Hat Ede je Zigaretten gekauft?*
has Ede ever cigarettes bought
'Has Ede ever bought cigarettes?'
Answer: *Nein, er ist kein Raucher.*
no he is no smoker
'No, he is not a smoker.'
- b. Question: *Hat Ede Zigaretten je gekauft?*
has Ede cigarettes ever bought
Answer: *Nein, er hat sie immer geschnorrt.*
no he has them always scrounged

In (64b) the negative polarity element occupies the position before the verb. As the answer confirms, in this position the negative polarity element has a contrasting effect on the verb. Since this is not the case in (64a), we can conclude that in its unmarked position, the negative polarity element precedes the direct object. Consider now the examples in (65):

- (65) a. *Wen hat Ede je beleidigt?*
 who-ACC has Ede ever offended
- b. *Ede hat erfreulicherweise NIEMANDEN je beleidigt.*
 Ede-NOM has fortunately nobody-ACC ever offended

The answer to the question (65a) does not have the contrasting effect observed in the case of (64b). We can therefore conclude that the negative polarity item in (65b) occupies the same position as in (64a). In other words, we can conclude that the negative polarity item also precedes the Case position of the direct object in (65b), which implies that the focalized direct object *niemanden* has undergone movement from SpecAgroP to a higher position from which it licenses the negative polarity element. Consequently, there must be a position for a focalized direct object which is higher in the structure than SpecAgroP (or the higher Spec of vP) but lower than the position of the sentence adverbial.

Observations that have to do with a particular use of some manner adverbials lend further support to the assumption of a lower focus position in the middle field. Frey and Pittner (1998) and Pittner (1999) have observed that manner adverbials which precede (non-integrated) objects preferably have an event reading rather than a reading that refers to the process expressed by the verb. Compare (66a) with (66b):

- (66) a. *Er muss das Geschirr langsam abspülen.*
 he must the dishes-ACC slowly wash
 'He should wash the dishes slowly.'
- b. *Er muss langsam das Geschirr abspülen.*
 he must slowly the dishes-ACC wash
 'It's about time he washed the dishes.'

While (66a) says that he should wash the dishes slowly, (66b) has a reading according to which it is about time for him to wash the dishes. On the assumption that indefinite wh-elements cannot undergo movement, Pittner (1999: 172) concludes from the contrast in (67) that the adverbial *langsam*, if associated with the event reading, occupies a position higher than the highest argument:

- (67) a. **weil wer langsam das Essen kochen könnte*
 since somebody slowly the meal-ACC cook could
- b. *weil langsam wer das Essen kochen könnte*
 since slowly somebody the meal cook could
 ‘since it’s about time somebody cooked the meal’

Examples such as (68) suggest that a weaker assumption may be more appropriate.

- (68) a. *dass erfreulicherweise der Hans langsam das*
 that fortunately the Hans-NOM slowly the
Abendessen vorbereitet
 -dinner-ACC prepares
 ‘that John is fortunately beginning to prepare the dinner’
- b. (*Ich glaube*), *dass Hans langsam was arbeiten sollte.*
 I think that Hans slowly something work should
 ‘I think that Hans should begin to do some work.’

Let us therefore assume that the adverbial *langsam*, if associated with the event reading, occupies a position higher than the Case position of the direct object.

Interestingly, when the direct object is focalized, the adverbial *langsam* has the event reading (as the preferred reading) even when following the object, cf. (66a) with (69):

- (69) *Du solltest das GeSCHIRR langsam abspülen.*
 you should the dishes slowly wash
 ‘It’s about time you washed the dishes.’

The same observation can be made with respect to (70):

- (70) a. *Was soll Hans denn jetzt auftauen?*
 what should Hans now thaw
- b. (*Ich bin nicht sicher aber ich glaube*), *dass er wahrscheinlich die*
 (I am not sure but I think) that he probably the
ENTE langsam auftauen sollte.
 duck slowly thaw should
 ‘I am not sure but I think it is about time for him to thaw the duck.’

Given our assumption about the position of the adverbial *langsam* in its event-related use we can conclude from (69) and (70) that the focalized object in these sentences occupies a focus position that is higher in the structure than the Case position of the direct object.²⁴

Let us now turn to the position of postposed focalized subjects.

- (71) a. *Wer hat gestern dem Hans das Buch gegeben?*
 who-NOM has yesterday the Hans-DAT the book-ACC given
- b. *Gestern hat dem Hans das Buch der Student gegeben.*
 yesterday has the Hans-DAT the book-ACC the student-NOM
 given

In order to make sure that the subject is indeed in a position lower than its derived surface position, we can again make use of adverbials. As we have already seen, sentence adverbials separate a higher topic area from the rest of the clause. As Frey and Pittner (1998: 508) show, subject-related adverbials such as *freiwillig* ('voluntarily'), *absichtlich* ('intentionally'), *versehentlich* ('inadvertently') are located between SpecAgrsP and the Case position of the direct object. The examples in (72) may then illustrate that the subject is not in its ordinary surface position nor in the higher focus position:

- (72) a. *Wer hat gestern dem Hans das Buch gegeben?*
 who-NOM has yesterday the Hans-DAT the book-ACC given
- b. *Gestern hat dem Hans das Buch erfreulicherweise der Student gegeben.*
 yesterday has the Hans-DAT the book-ACC fortunately
 the student given
- c. *Gestern hat dem Hans das Buch versehentlich der Student gegeben.*
 yesterday has the Hans-DAT the book-ACC inadvertently the
 student given

As Frey and Pittner (1998: 505f) show, instrumental adverbs in their base position also precede the direct object. The examples in (73) then confirm that the focalized subject is in a position lower than SpecAgrsP:

- (73) a. *Wer hat gestern den Schrank herbeigeschafft?*
 who-NOM has yesterday the cupboard-ACC brought
- b. *Gestern hat den Schrank (erfreulicherweise) mit einem
 yesterday has the cupboard-ACC fortunately with a
 Kleintransporter der Student herbeigeschafft.*
 van the student-NOM brought

The open question is in what kind of lower position the subject is located. There is evidence from the position of indefinite wh-elements which clearly shows that the postposed focalized subject is not in its base position in SpecvP. Recall first that indefinite elements can be subject to A-movement, although they are unable to undergo A'-movement:²⁵

- (74) a. *weil gestern wer dem Peter das Buch
 since yesterday somebody the Peter-DAT the book-ACC
 zurückgegeben hat
 returned has*
- b. *weil gestern der Student dem Professor
 since yesterday the student-NOM the professor-DAT
 was nicht zurückgegeben hat
 something-ACC not returned has*
- c. *weil gestern der Student was sorgfältig
 since yesterday the student-NOM something-ACC carefully
 repariert hat
 repaired has*

In (74a), the indefinite wh-subject has been moved to the derived position of the subject, and in (74b), the object must have undergone movement to a position higher than negation, which can be assumed to be SpecAgroP (higher Spec of vP). Likewise, in (74c) the indefinite wh-object must have moved to a position higher than the manner adverbial.

If these observations are correct, then examples (75b) and (75c) can be taken as evidence that the postposed subject does not occupy its base position:

- (75) a. *Wer hat gestern dem Hans was nicht
 who has yesterday the Hans-DAT something-ACC not
 zurückgegeben?
 returned*

- b. *Gestern hat (erfreulicherweise) dem Hans der*
 yesterday has (fortunately) the Hans-DAT the
StuDENT was nicht zurückgegeben.
 NOM-student something not returned
- c. **Gestern hat (erfreulicherweise) dem Hans was der*
 yesterday has fortunately the Hans something the
StuDENT nicht zurückgegeben.
 student not returned

The same is shown by the example in (76b). If the indirect object in (76b) is not in the higher topic field, as indicated by the sentence adverbial, then (76b) also demonstrates that the postposed focalized subject is neither in SpecAgrsP nor in its base position:²⁶

- (76) a. *Wer hat gestern dem Hans das Buch nicht*
 who-NOM has yesterday the Hans-DAT the book-ACC not
gegeben?
 given
- b. *Gestern hat erfreulicherweise dem Hans der*
 yesterday has fortunately the Hans-DAT the
StuDENT das Buch nicht gegeben.
 student-NOM the book-ACC not given

The next piece of evidence for a low focus position has to do with locative adjuncts. Maienborn (1996) and Pittner (1999) convincingly argue that in clauses with transitive verbs, the base position of locative adjuncts in their “canonical” use (i.e. when positioning an event) is between the subject and the direct object:

- (77) *weil Peter in der Kantine den KOCH beleidigt hat*
 since Peter-NOM in the canteen the cook-ACC offended has

As indicated in (77), the unmarked focus in a sentence like (77) is represented by the direct object. The assumption that the base position of the adjunct is higher than the position of the direct object is confirmed by the observation (due to Frey and Pittner 1998: 509) that the direct object does not trigger a Principle C effect with respect to the locative adjunct in clauses like (78):

(78) *weil gestern Maria in Peters_i Garten den PETER_i*
 since yesterday Maria-NOM in Peter's garden the Peter-ACC
getroffen hat
 met has

Notice, however, that example (78) does not yet show in which position exactly the locative adjunct is base generated. If the direct object in sentences like (77) occupies the specifier of a focus projection, as I argue, then we could assume that the base position of the locative adjunct is between SpecAgrsP and the lower topic-focus field. However, the claim that the locative adjunct precedes the direct object would also be compatible with the assumption that it is adjoined to, say, AgrOP. In this case, the derivation of (78) would require movement of the locative adverb to a position in front of the focus projection. Notice that the absence of the Principle C effect is also predicted when the direct object has been raised to a focus position and has thereby crossed the base position of the adverbial, since being in an A'-position, the direct object would c-command but not A-bind the base position of the adjunct. The question of whether the locative adverbial is located higher or lower than the lower focus projection can be answered if we consider effects on scope. Recall that the latter alternative would imply that the adverbial has undergone movement in cases like (78). The fact that there is no scope ambiguity in examples such as (79) then shows that the adverbial has in fact not undergone movement in sentences like (78):

(79) *weil gestern Maria in jedem Garten (mindestens) einen*
 since yesterday Maria-NOM in every garden (at least) one
Studenten getroffen hat
 student-ACC met has

Let us therefore assume that the base position of the canonical locative adverbial in sentences such as (78) is higher than the lower focus projection.

Matters become more complicated if we take into account that according to well-established descriptive generalizations, not all canonical locative adverbs are located in a base position that precedes the direct object. Unlike the locative adjunct in (78), which is related to the subject in that it implies that Maria was in Peter's garden, locative adverbials which are object-related are claimed to be located in a base position that follows the direct object (see Pittner 1999: 149ff). This is said to be the case in sentences like (80):

- (80) a. *Gestern hat Maria den Peter in Annas Garten*
 yesterday has Maria-NOM the Peter-ACC in Anna's garden
getroffen.
 met
- b. *Gestern hat Maria deine Schwester in Berlin besucht.*
 yesterday has Maria-NOM your sister-ACC in Berlin visited

The position of indefinite wh-elements confirms this assumption about the base order of the locative adverbial:

- (81) a. *Gestern hat Maria den Peter wo getroffen.*
 yesterday has Maria-NOM the Peter-ACC somewhere met
- b. **Gestern hat Maria wo den Peter getroffen.*
 yesterday has Maria somewhere the Peter met

If we now consider examples like (82) and assume that the focalized locative adverbial is located in a lower focus phrase (above the Case position of the object) we will have to show that the locative adjunct as well as the direct object have undergone movement in examples like (82b):

- (82) a. *Wo hat Maria gestern den Peter getroffen?*
 where has Maria-NOM yesterday the Peter-ACC met
- b. *(Ich glaube), dass Maria gestern den Peter in*
 I think that Maria-NOM yesterday the Peter-ACC in
Annas GARTEN getroffen hat.
 Anna's garden met has

The fact that in contrast to example (78), there is a Principle C effect in examples like (83) provides evidence that the base position of the locative adverbial is in fact lower than the position of the direct object:

- (83) **weil gestern Maria den Peter_i in Peters_i GARTEN*
 since yesterday Maria-NOM the Peter-ACC in Peter's garden
getroffen hat
 met has

If the locative adverbial has undergone movement to the focus position above AgroP, which is an A'-position, the direct object must also have undergone movement to an A'-position. The Principle C effect must therefore

be due to the base configuration so that the derivation of a sentence like (83) would look like (83')

- (83') **weil gestern Maria [den Peter_i]_j [in Peters_i Garten]_k t_j t_k*
 since yesterday Maria the Peter in Peter's garden
getroffen hat
 met has

The question of what triggers the movement of the direct object is the subject of the next section. At this point, it may suffice to show that this kind of movement does in fact take place. The relevant evidence is provided by examples like (84), where in contrast to (79), a clear scope ambiguity can be detected:

- (84) *weil gestern Maria (mindestens) einen Studenten in*
 since yesterday Maria-NOM at least one student-ACC in
jedem GARTEN getroffen hat
 every garden met has

I have not shown yet that the position which hosts the locative adverbial in sentences like (82b) is in fact a focus position in the sense of an operator position. One way to fill this gap in the argument is to appeal to a generalization defended in Kim (2005) according to which elements that are located in a focus position trigger intervention effects. A relevant example is provided by German separation constructions. German displays particular instances of wh-constructions in which a portion of a wh-element is raised overtly while the remainder is left behind in the clause:

- (85) *Was hat Maria dem Hans in der Uni*
 what-ACC has Maria-NOM the Hans-DAT in the uni
[___ alles] geZEIGT?
 all shown
 'What-all did Maria show Hans in the university?'

As is shown in Beck (1996) and Pesetsky (2000), these constructions are subject to intervention effects. So if it is true that the focalized locative adjunct in sentences like (83) has moved to a focus position and that, as indicated in (83'), this position is higher than the Case position of the direct object, then we would predict that the locative adjunct triggers an intervention effect in a separation construction. This prediction is in fact borne out. If

the locative adverbial in a sentence like (85) is focalized, separation is no longer possible; compare (85) with (86):

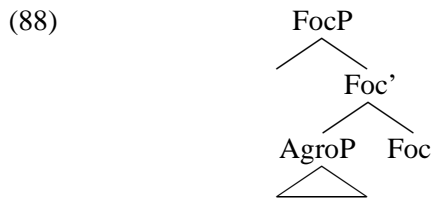
(86) **Was hat Maria dem Hans in der UNI [___alles] gezeigt?*

The same is shown by the contrast between (87a) and (87b):

(87) a. *Wen hat Maria dem Hans in der Uni*
 who-ACC has Maria-NOM the Hans-DAT in the uni
[___ alles] VORgestellt?
 all introduced

b. **Wen hat Maria dem Hans in der UNI [___alles] vorgestellt?*

I have argued that there is a lower focus projection in the German middle field which is located above the A-position where the object receives Case (AgroP or the outer specifier of vP).²⁷



The assumption of a lower focus projection may solve an empirical problem associated with the claim that topics in the middle field undergo fronting to a high middle-field internal topic position (see section 5).

(89) Question:

Wer hat dem Dekan den Beschwerdebrief überreicht?
 who has the dean-DAT the complaint-ACC given

Answers:

a. *(Ich glaube, dass) dem Dekan die Studenten den*
 I think that the dean-DAT the students-NOM the
Beschwerdebrieff überreicht haben.
 complaint-ACC given have

b. *(Ich glaube, dass) den Beschwerdebrief die Studenten*
 I think that the complaint-ACC the students-NOM
dem Dekan überreicht haben.
 the dean-DAT given have

The examples in (89) are supposed to provide evidence against the claim that topics in the middle field are preposed. Note, however, that in the absence of sentence adverbials it is difficult to draw conclusions about the positions of the arguments in (89a) and (89b). It may well be that the focused subject occupies the higher focus position and is thus surrounded by two topics in the higher topic-focus field. But even if we add a sentence adverbial after the first topic in the clause, we can still assume that the first topic is in the high topic position while the focus and the second topic occupy the lower topic-focus field.

We have seen evidence from German which suggests that there is a lower topic-focus field in the left periphery of the VP/AgroP. This conclusion is supported when we consider the situation in other languages. Belletti (2002) shows that there is a low VP-peripheral focus position in Italian where the focused postverbal subject in free inversion structures is located.

It is well-known that in many languages, wh-elements have to be contiguous to the verb. In SOV-languages such as Quechua (Gundel 1988), Malayalam (Jayaseelan 2001) and Turkish (Kural 1992), wh-elements typically occupy the preverbal position, which is standardly interpreted as a focus position. Further evidence for the existence of focus movement to a low focus position can be gained from the SOV-language Turkish. Kural (1992) observes that an anaphor cannot be scrambled to clause initial position if its subject-antecedent is in preverbal position:

(90) [Turkish]

- a. *Adamlar_i birbirlerini_i görmüş.*
 man_{pl,agr} each other-ACC saw_{pst,agr}
 'The men saw each other.'
- b. **Birbirlerini_i adamlar_i görmüş.*
 each other-ACC men saw

If the preverbal position is occupied by an element other than the binder, the scrambled anaphor can licitly be bound by an antecedent which is lower than the anaphor but higher than the preverbal element:

- (91) a. *Adamlar_i birbirlerini_i dün görmüş.*
 man-PL-NOM each other-ACC yesterday see-PST-AGR
 'The men saw each other yesterday.'
- b. *Birbirlerini_i adamlar_i t_i dün görmüş.*
 each other-ACC men-NOM yesterday saw

- (92) a. *Adamlar_i Ahmet'i birbirlerine_i gösterdi.*
 man-PL-NOM Ahmet-ACC each other-DAT show-PST-AGR
 'The men showed Ahmet to each other.'
- b. *Birbirlerine_i adamlar_i Ahmet'i gösterdi.*
 each other-DAT men-NOM Ahmet-ACC showed

Kural explains the ungrammaticality of (90b) in terms of an intervention effect: although scrambling in Turkish is A'-movement, the scrambled anaphor in (90b) cannot reconstruct into its base position since the focused binder blocks LF-reconstruction; this blocking effect is not operative in (91b) and (92b) since the antecedent is not focused here. However, Kural's account cannot be correct. It is a well-established claim that Principle A can be satisfied at any stage of the derivation (Belletti and Rizzi 1988, Grewendorf and Sabel 1999). Since Principle A is satisfied at the underlying structure of (90b), the sentence should be as grammatical as the examples in (91) and (92). Furthermore, in the case of (92b) Kural would have to assume that the focused direct object does not block LF-reconstruction of the anaphor. The alternative assumption that the anaphor reconstructs into a position higher than the direct object is not plausible in view of the order given in (92a).

I have already pointed out that the "defocusing" of constituents in order to bring other constituents into focus does not seem to provide a satisfactory motivation for movement. Let us therefore assume that the preverbal focalization in Turkish is the result of moving an element into the specifier of a focus projection (followed by the need to move material intervening between the FocP and the verb to the specifier of topic phrases).²⁸ The structure of (90b) would then look like (93)

- (93) *Birbirlerini_i [_{FocP} [*adamlar_i]_j] [_{AgroP} *t_{anaphor}* [*t_j* *t_{anaphor}* *görmüş*]]]*
 each other men saw*

Given that focus movement as well as scrambling are instances of A'-movement, we can explain the ungrammaticality of (93) as a violation of Principle C of the binding theory since the variable t_j is A-bound by the trace of the anaphor in SpecAgroP. As for the examples in (91b) and (92b) we can easily see that no configuration arises that implies a violation of Principle C since the index of the anaphor is different from the index of the focused element:

- (94) *Birbirlerine_i [_{AgrsP} *adamlar_i*] [_{FocP} [*Ahmet'i*]_k *t_{anaphor}* *t_k* [_{t_{Subj}} *gösterdi*]]]*

At no point of the derivation is the variable t_k A-bound in (94).

On the basis of a Kaynean view of the underlying structure of SOV-languages, Jayaseelan (2001) argues for the crosslinguistic existence of a low focus position immediately above vP which he considers to be the target position of focus-scrambling, wh-movement, focus in cleft constructions and heavy NP shift. Unlike the analysis defended in the present paper, Jayaseelan assumes that this focus position is located below the 'canonical' positions to which the verb's internal arguments have to move in a Kaynean derivation of SOV surface structures. Jayaseelan further postulates a recursive Topic Phrase above these 'canonical' positions, in terms of which he accounts for the definiteness/specificity constraints on clause internal scrambling in SOV languages such as Malayalam and German. Although Jayaseelan points out that morphological Case plays a limited role in licensing movement to these 'canonical' positions, he also claims that movement to these positions cannot in general be attributed to requirements of Case (Jayaseelan 2001: 46). The question of what motivates this kind of movement thus remains unanswered.

There are other problems with Jayaseelan's account. The assumption that the focus projection is lower than the Case position of the direct object wrongly predicts that focused objects cannot undergo A-movement since this would result in improper movement. Furthermore, we saw above that German indefinite wh-elements can undergo A-movement but are otherwise immobile. The surface position of the indefinite wh-object then clearly shows that a low focus has to be located higher than the target position of the kind of A-movement that the direct object undergoes for reasons of Case or agreement. Finally, as could be seen from the German data in this section, there is evidence that at least with respect to German, there should be a topic position available below the low focus, so that the relative ordering of Jayaseelan's topic and focus projections cannot be correct.²⁹ We will see in the next section how the assumption of a continuous lower topic-focus field in the sense of Belletti (2001) can deal with the definiteness and specificity constraints which Jayaseelan considers to provide the crucial argument for the assumption that the low topic area and the low focus area are separated by a series of 'canonical' positions.

Before I take a closer look at low topic positions, I would like to deal with several conceptual and empirical problems that may be associated with the analysis of the low focus argued for in this section. The first question that arises has to do with the unmarked focusing of the verb in intransitive sentences such as (95):

- (95) (*Ich glaube*), *dass Hans SCHLÄFT*.
 I think that Hans is-sleeping

One may suspect that the entire VP might have undergone movement to the low focus in this case. We would then have to say that the focused finite verb is able to leave SpecFocP and raise to higher head positions in order to check its agreement properties. Alternatively, we might assume that in a sentence like (95) the verb raises to the head of the higher FocP in the middle field after having checked its agreement features in the head positions of T and Agr. If we assume that the verb moves to the lower Foc-head, we have to allow that it raises further up, keeping its status as a focus since it still bears an interpretable focus feature. Note that movement of focused XPs from the specifier position of the lower FocP is excluded by improper movement and by the same constraint that prevents *wh*-elements from leaving a [Q]-operator position. Spec of FocP can only be used as an escape hatch in cases where a focused XP cannot enter an agreement relation with the lower Foc-head due to “defective” agreement (Chomsky 2001).

The question of whether or not the entire VP may move to the Spec of the lower FocP is not easy to answer. Note first that in German, the nominal arguments have to leave the VP for reasons of Case. If VPs could move to the lower FocP, we would therefore predict that focused remnant VPs should be able to precede non-focused nominal arguments. Whether focus movement of the remnant VP is a licit option of the derivation depends on our judgments on examples such as (96).

- (96) a. ??*weil Maria erfreulicherweise [NACHGESCHICKT]*
 since Maria-NOM fortunately forwarded
 dem Hans das Buch hat
 the Hans-DAT the book-ACC has
- b. ??*weil Maria bedauerlicherweise [VERLASSEN] den*
 since Maria-NOM unfortunately left the
 Hans hat
 Hans-ACC has

In my opinion, these examples are marked but not totally ungrammatical. If they are considered worse than indicated by the two question marks, we should find a reason why remnant VP-movement to the lower FocP leads to such bad results. Note that at first sight, this kind of movement cannot be ruled out by the constraint on remnant movement stated in section 2, since internal movement to Case positions or to a TopP below the lower FocP

appears to be of a lower type in the movement hierarchy than movement to FocP. However, we might explain the deviant nature of (96) in terms of the following considerations.

I assume that the nominal elements in (96) which have undergone internal movement and thus follow the focused remnant VP have topic status and must move to the TopP located below the FocP. As can be seen from languages such as Italian and Malayalam, the topic position below a focus is parasitic on focalization. The special status of postfocal topics can be seen from the fact that in Italian, these topics trigger weak crossover effects and do not license the presence of a clitic (Benincà and Poletto 2004; Belletti 2002). As far as Malayalam is concerned, Jayaseelan (2001) points out that this sort of low topicalization is infelicitous if it does not occur in association with a focus. The parasitic use that low topics make of the presence of a low focus may justify the assumption that movement to a TopP below the FocP cannot be assigned a hierarchical status that is lower than that of focus movement itself. If this assumption is on the right track, we can explain the deviant nature of examples such as (96) as a violation of our remnant movement constraint since remnant movement would then not be of a higher type than internal movement.

The considerations above do not affect the question of whether or not the entire AgroP can undergo focus movement to the lower FocP. I cannot see any reason why this option should be ruled out. Rather, it seems to be indispensable in view of the facts.

A further problem concerns the question of whether so-called “T-scrambling”, which is a focus operation in my view and which is not clause bound according to Haider and Rosengren (1998), is able to target the low focus position. As examples like (97) show, the answer must be positive, and this provides further empirical support for the claim that such a position has to be assumed.

- (97) *weil Maria erfreulicherweise [JUST DIESE FRAGE]_i*
 since Maria-NOM fortunately exactly this question-ACC
glaubte, dass sie t_i unbedingt beantworten müsste
 thought that she-NOM absolutely answer should

A conceptual problem arises if we consider narrow contrastive focus on elements that cannot undergo movement, as in (98)

- (98) *weil Maria den Mann mit dem ROTEN Hemd beschuldigt*
 since Maria-NOM the man with the red shirt accuses

If the mechanism of focus movement is to be applicable to cases like (98), the solution to this problem can only be seen in a mechanism of pied piping that works in a way analogous to the pied piping usually assumed for *wh*-questions (see Horvath 1986 on the relevant mechanism for focus movement in Hungarian, and Drubig 1994, Krifka 1998 on the general problem of focus on constituents). The issue of pied piping focus features is related to the question of whether it is the (appropriate) focus exponent or the projected focus that undergoes focus movement. As pointed out by Horvath (1986: 91), only constituents other than *V* or a projection of *V* can be interpreted as the focus of the clause in Hungarian. Considering languages such as Hungarian, one may assume that only those constituents can undergo focus movement that can function as operators. These would be constituents that can also be focused in a cleft construction. In the present context it would lead us too far afield to go into the question of how the rules of focus projection and the assignment of Nuclear Stress apply to a configuration of the middle field as defended in this paper.

Finally, let me briefly turn to the difference between informational (non-contrastive) and contrastive focus. Contrastive focus resembles non-contrastive focus in that it introduces an operator-variable configuration and pragmatically differs from it in that its background assertion is provided by a statement rather than by a question (Zubizarreta 1998: 10). The distinction between a high and a low focus position in the German middle field raises the question as to what determines whether a focused element targets the higher or the lower focus position. Belletti (2002) assumes for Italian that the contrastive focus interpretation is only possible in the left periphery of the *C*-system and that contrastive focus in the left periphery of the clause and informational (non-contrastive) focus in the left periphery of the *VP* are not allowed to cooccur. German seems to be much less constrained as far as the cooccurrence of contrastive and informational focus is concerned. It nevertheless looks like there is an analogous constraint to the effect that the higher focus position of the middle-field is the preferred position for a contrastive focus while the lower focus position tends to be the unmarked position for an informational focus.³⁰ On the other hand, Stoyanova (2004) points out that languages such as Somali and Berber show no differences between the syntactic behavior of contrastive and non-contrastive focus (see, however, É. Kiss 1998 on Hungarian). For the purpose of my account of the German middle field, I have ignored potential differences and drawn on both kinds of focus as evidence for the syntactic argument developed in this paper.

5. The clause-internal lower topic position

I have argued that there is a lower topic-focus field that is located between the Agreement projection for the subject and the Agreement projection for the object. As argued in Rizzi (1997) and Belletti (2002), the topic-focus field is composed of topic projections above and below the focus phrase. As shown in the preceding section, topics below the focus phrase are considered to be parasitic on focalization. This implies that in an example such as (99b), the focalized subject has undergone movement to the lower focus projection while the direct object occupies the topic position below the focus phrase:

- (99) a. *Wer wird heute die Violetta singen?*
 who-NOM will today the Violetta-ACC sing
- b. *Heute wird erfreulicherweise Anna NeTREBko die Violetta singen.*
 today will fortunately Anna Netrebko-NOM the Violetta-ACC sing

The assumption that topics can be located in a position lower than the Agreement projection of the subject conflicts with Frey's (2004) claim that all topics which occur in the middle field have to be located in a position directly above the position of sentential adverbials. Frey's view implies that a phrase which has been scrambled from a position below a sentential adverbial to another position below a sentential adverbial cannot be a topic. My assumption is partly in line with the claim made by Meinunger (2000), according to which all scrambled phrases are topics. I agree with Meinunger's view that scrambled phrases can be topics. However, as shown in the preceding sections, scrambling can also be interpreted as focus movement.

The fact that contrary to Frey (2004), topics can be located in a position below that of sentential adverbials can be seen from examples such as (100)–(103):

- (100) a. *Wer hat gestern dem Jungen die Zigaretten nicht gegeben?*
 who-NOM has yesterday the boy-DAT the cigarettes-ACC not given

- b. *Gestern hat erfreulicherweise dem Jungen der*
yesterday has fortunately the boy-DAT the
StuDENT die Zigaretten nicht gegeben.
student-NOM the cigarettes-ACC not given
- (101) a. *Wer hat dem Dekan den Beschwerdebrief überreicht?*
who has the dean-DAT the ACC-complaint given
- b. *Ich glaube, dass erfreulicherweise dem Dekan dieses Mal*
I think that fortunately the dean-DAT this time
die Studenten den Beschwerdebrief überreicht haben.
the students-NOM the complaint-ACC given have
- c. *Ich glaube, dass erfreulicherweise den Beschwerdebrief*
I think that fortunately the complaint-ACC
dieses Mal die Studenten dem Dekan überreicht haben.
this time the students-NOM the dean-DAT given have
- (102) a. *Was wird der Professor heute wahrscheinlich mit*
what will the professor-NOM today probably with
seinem japanischen Gast machen?
his Japanese guest do
- b. *Heute wird der Professor wahrscheinlich seinen*
today will the professor-NOM probably his
japanischen Gast ins Pielok einladen.
Japanese guest-ACC into (the) Pielok invite

In the *Süddeutsche Zeitung* (21./22.2.2004), an article about the *Wiener Opernball* appeared describing Anna Netrebko's performance when she sang Franz Lehar's "Meine Lippen, sie küssen so heiß":

- (103) *Ungalant allerdings hatten der Netrebko*
ungentlemanly however had the Netrebko-DAT
ORF-Techniker ein monströs-altmodisches
ORF-technicians-NOM a monstrously old-fashioned
Sendegerät ins Rückendekollete gestopft.
transmitting installation-ACC into the back décolleté stuffed

If we insert a sentence adverbial like *skandalöserweise* ('scandalously') between the finite verb and *der Netrebko*, the sentence would still be appropriate in the context from which it is taken.

In contrast to an argument put forth by Frey (2004) (see the examples in (4) and (5) above), it seems to me that objects which are scrambled to a position below a sentence adverbial are not in general incompatible with a cataphoric pronoun, so that we could say that such phrases satisfy another criterion for topicality:

- (104) *Obwohl er_i eine hervorragende Arbeit abgeliefert hat, hat*
 although he an excellent paper handed-in has has
bedauerlicherweise den Studenten_i keiner gelobt.
 unfortunately the student-ACC nobody-NOM praised

Frey further argues against the claim made by authors like Cohen and Erteschik-Shir (2002) that there is a correlation between topic status and generic interpretation of bare plurals. He points out that a bare plural can also have a generic interpretation when it is located to the right of a sentence adverbial and thus not in a topic position according to his account:

- (105) *weil erfreulicherweise Väter an Weihnachten mit der*
 since fortunately fathers at Christmas with the
Eisenbahn spielen
 model railway play

However, other tests show that bare plurals which have been moved to a position outside of the VP-domain but below a sentence adverbial where they must be interpreted generically can still act as topics:

- (106) a. *Sollte man das Gehalt von Ärzten erhöhen?*
 should we the salary-ACC of doctors raise
 b. *Nein, es hat sich gezeigt, dass erfreulicherweise selbst bei*
 no it has shown that fortunately even with
größter Arbeitsbelastung Ärzte nicht an Geld denken.
 highest workload doctors-ACC not of money think

Furthermore, it is well-known that a bare plural subject of an individual level predicate can only receive a generic interpretation. As the example in (107) shows, the subject of an individual level predicate is interpreted generically in a position where it follows a sentential adverbial:

- (107) *weil offenkundig Professorenkinder intelligent sind*
 since obviously children of professors intelligent are

Frey concludes from examples such as (107) that subjects of individual level predicates are interpreted generically although they are not in a topic position. However, we can turn Frey's argument against him and claim that examples such as (107) show that there is a topic position below the position of sentence adverbials, thus using examples such as (107) as evidence for the claim that there is in fact a correlation between genericity and topicality. This strategy receives support from independent criteria for topicality:

- (108) a. *Warum fallen so viele Professorenkinder durchs Abitur?*
 why fail so many children of professors-NOM the exam
- b. *Das ist schwer zu erklären, weil offenkundig Professorenkinder intelligent sind.*
 this is hard to explain since obviously children of professors intelligent are
- (109) *Obwohl sie_i häufig durchs Abitur fallen, sind offenkundig Professorenkinder_i dennoch intelligent.*
 although they often the exam fail are obviously children of professors nevertheless intelligent

Further evidence for the existence of low topics is provided by the fact that subject pronouns, which according to Frey (2000) have to be topics, can follow arguments of the verb, as in the following example from an article about the Kulturdezernent of Frankfurt, which appeared in the *Süddeutsche Zeitung* (9.2.2004):

- (110) ... *dass an allen Misserfolgen in der Kultur er schuld habe*
 that for all failures in the culture he is to blame

Analogous evidence is provided by the position of the pronouns in (111b) which have to be considered as topical due to the question test:

- (111) a. *Wer hat den Hans über das Ergebnis informiert?*
 who has the Hans-ACC of the result informed
- b. *(Ich glaube), dass offenbar seine Mutter es ihm mitgeteilt hat.*
 I think that obviously his mother it him told has

In order to get a more precise picture of the target position of low topics we can make use of Frey and Pittner's (1998) findings about the canonical positions of other types of adverbials. As already pointed out in previous

sections, these authors present evidence that the base position of subject-related adverbials like *absichtlich* ('intentionally') and *freiwillig* ('voluntarily') is between the subject and the objects while the canonical position of locative adverbials (if not interpreted as a frame adverbial) is in front of the direct object:

- (112) a. *weil Otto absichtlich den ZAUN zerstörte* (wide focus)
 since Otto intentionally the fence destroyed
 b. *weil Otto den Zaun absICHTlich zerstörte* (narrow focus)
- (113) a. *weil Otto in Peters Garten dieses Buch gelesen hat.*
 since Otto in Peter's garden this book read has
 b. *Dieses Buch gelesen hat Otto in Peters Garten.*
 this book read has Otto in Peter's garden
 c. *??In Peters Garten gelesen hat Otto dieses Buch.*
 in Peter's garden read has Otto this book

If we now use the combination of subject-related adverbials and locative adverbials, examples such as (114) clearly show that the topical direct object moves to a position higher than AgrOP and lower than AgrSP:

- (114) a. *Wem hat Uli Hoeness freiwillig im Olympia-*
 to whom has Uli-NOM Hoeness voluntarily in the Olympic
stadion diesen Schal überreicht?
 stadium this scarf-ACC handed over
- b. *Uli Hoeness hat freiwillig [Topic diesen Schal] DEM*
 Uli Hoeness has voluntarily this scarf-ACC the
PRÄSIDENTEN VON 1860 [Topic im Olympiastadion]
 president-DAT of 1860 in the Olympic stadium
überreicht.
 handed over
- c. *Uli Hoeness hat freiwillig [Topic diesen Schal] [Topic im*
 Uli Hoeness has voluntarily this scarf-ACC in the
Olympiastadion] DEM PRÄSIDENTEN VON 1860 überreicht.
 Olympic stadium the president-DAT of 1860 handed over

Proceeding from the assumption that the focused indirect object occupies the low focus position in (114b) as well as in (114c), we can explain the difference between (114ab) and (114c) by assuming that the locative adverbial

stays in the topic position below the focus position in (114b), while it has moved (along with the direct object) to the topic position above the focus position in (114c).³¹

Jayaseelan (2001) also assumes that internal arguments (and adjuncts) undergo middle-field internal movement in SOV languages but argues against movement to SpecTopP on the grounds that such an operation cannot account for the canonical order of the verb's internal arguments in their target positions and that – at least in Malayalam – the internal arguments in their canonical order do not show any topicalization effects such as definiteness and specificity. He assumes instead that the internal arguments undergo “nested” movements out of the VP to positions above a low focus phrase but below a recursive TopP (which is still lower in the tree than the position of the subject). If we assume that the target positions of Jayaseelan's ‘nested’ movements are the Case positions of the internal arguments, then the only difference with my approach is that Jayaseelan's focus position is located below these Case positions. I have already shown in the preceding section that the latter assumption does not comply with the German facts.

Finally, there arises the question of whether there is any difference between high and low topics and what determines whether an element moves to the low or to the high topic projection. Although I do not have much to say about this problem and thus have to leave it to future research, it should be clear that such a “recurrence” of functional projections should correlate with a difference in the functional content. An interesting idea that might indicate the direction where a solution could be found was pointed out to me by Valentina Bianchi (p.c.). It may be that high topics tend to be “shifting topics” in the sense that they set a new “goal” for the conversation and thus are naturally “aboutness” topics while low topics tend to be “continuing” topics in that they refer to pieces of information already introduced into the conversation and thus are naturally “familiarity” topics.³² High and low topics might then be distinguished in terms of their contribution to the expressed assertion in a way analogous to the distinction between high and low focus (see fn. 30). As Bianchi puts it, high topics seem to be external to the assertion in the sense that they affect the overall structure of the conversation whereas low topics are just compatible with a standard assertion move. Future research will have to show whether these ideas can be empirically validated and adequately formalized.

6. Conclusion

I have tried to show that the German clause contains two topic-focus fields in the area between the complementizer and the VP. The higher topic-focus field is located above the Case position of the subject, and the lower topic-field is positioned between the Case position of the subject and the Case position of the object. The syntactic operation that is traditionally called “scrambling” can either be analyzed as topic movement or as focus movement. Scrambling is thus motivated by discourse-configurational features and no longer constitutes an instance of optional movement. Closer inspection of the discourse-configurational mechanisms that are responsible for this kind of middle-field internal reorganization will have to reveal whether topic and focus movement can freely choose to target either the lower or the higher topic-focus field, or, alternatively, whether the two options are subject to specific constraints. I have already conjectured that the high focus position is preferably designed to host a contrastive focus while the low focus position tends to be the unmarked position for informational focus. If scrambling does not show any discourse-configurational effects but is semantically neutral, as has been claimed for scrambling languages such as Hungarian (É. Kiss 1995b) and Japanese (Saito 1989; Saito and Fukui 1998),³³ then scrambling in these languages can only be considered to be pure PF-movement and should be analyzed along the lines of Saito’s (2003) account of scrambling in Japanese.

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Notes

1. The term *middle field* (‘Mittelfeld’) is taken from the so-called topological theory of the German sentence structure. In the absence of an auxiliary it refers to the region between the finite verb in V2-position and the nonfinite verb or verb particle.

2. Molnárfi (2002) shows that in Afrikaans, there is a regular morphological pattern associated with discourse configurational properties that corresponds to scrambled and non-scrambled word orders (cf. the particle *vir*) and constitutes a serious challenge for any non-derivational approach to scrambling. Karimi (2003) argues that scrambling in Persian is a reflection of discourse information such as topic and focus.
3. Fanselow (2003) argues against a topic position between complementizer and sentential adverb. His main objection to Frey's account is that the relative ordering of sentential adverbs and topical elements observed by Frey (2000, 2004) can be derived from semantic considerations according to which referential phrases such as topic phrases must have "wide scope" relative to other operators. This constraint implies that topics may appear low in the structure unless a high placement is required by the presence of an operator such as a sentential adverb. As shown by examples such as (i), this implication does not comply with the facts and thus undermines Fanselow's alternative account (for further arguments see section 4).

- (i) a. *Wer wird heute die Violetta singen?*
 who-NOM will today the Violetta-ACC sing
- b. *Heute wird erfreulicherweise Anna NetREBko die Violetta singen.*
 today will fortunately Anna Netrebko-NOM the Violetta-ACC sing
 Violetta sing

4. "#" indicates inappropriateness in the given context.
5. A sentence adverbial may also have a focus inducing use in which it relates to one narrowly focused element of the clause. This may be the case in (3b). In the present context, however, such readings of sentence adverbials are irrelevant.
6. A familiar argument against focus movement is based on the observation that focus movement seems to violate island constraints. However, as shown in Drubig (1994), this observation does not necessarily imply the absence of movement.
7. Frey uses the ungrammaticality of examples such as (i) as evidence for the opposite claim:
 - (i) **weil Hans GRÜN die Tür erstaunlicherweise gestrichen hat*
 since Hans green the door astonishingly painted has
(und nicht ROT)
 (and not red)

Apart from the fact that I do not share Frey's judgment, it should be noted that the alleged ungrammaticality of (i) may also be due to independent factors such as certain order constraints on resultative constructions.

8. Evidence for this hypothesis can be seen in the fact that German long topicalization to the left periphery is blocked when no position in the embedded left

periphery is available as an intermediate landing site. As pointed out by a reviewer, the situation in German is similar to what we find in Dravidian languages such as Malayalam, where long-distance topicalization to the left clausal periphery is possible but long topic movement to a middle-field internal topic position is ungrammatical (see Jayaseelan and Amritavalli, this volume).

9. Further evidence can be seen in an asymmetry between long topic movement and long focus movement that has been observed in Malayalam: In the cleft construction analyzed by Jayaseelan and Amritavalli (this volume), a focused constituent can undergo long extraction but not a topic.
10. Actually, Hindi-Urdu has three strategies for realizing non-neutral focus: a syntactic strategy of preverbal positioning, a morphological strategy of in situ focus via *-hii*-cliticization, and a prosodic strategy of heavy (contrastive) stress (Kidwai 1999: 223).
11. As pointed out by Kidwai (1999), X^0 -scrambling and rightward scrambling also serve as strategies for preverbal focusing; however, these operations do not constitute the preferred strategies for this purpose.
12. The existence of long scrambling shows that scrambling cannot be accounted for in terms of an operation of defocusing. Since defocusing would already be achieved by short scrambling, there must be independent reasons for an element to undergo long scrambling. As the present paper argues, such reasons can be found in discourse configurational requirements.
13. Phrasal prominence as defined by the *Nuclear Stress Rule* is related to noncontrastive focus while prominence related to contrastive focus is generated by the *Contrastive Stress Rule* (see Zubizarreta 1998: 17f).
14. Marking major categories with the feature [F] encodes the focus/presupposition partitioning of the syntactic structure. This feature [F] is not to be confused with the functional feature “focus” which acts as a “Probe” in the syntactic structure and attracts an [F]-marked constituent in the case that focus is realized in terms of syntactic movement (Zubizarreta 1998: 178).
15. The relevant definition is given in (i) (Zubizarreta 1998: 19):
 - (i) Given two sister categories C_i and C_j , the one lower in the asymmetric c-command ordering is more prominent.
16. I ignore German non-verb-final structures, where unlike in verb-final structures, nuclear stress falls on the last constituent in the structure (i.e. the last constituent in the asymmetric c-command ordering). I also ignore those cases where two elements of the clause are not selectionally ordered so that the *Nuclear Stress Rule* applies with reference to constituent rather than selectional ordering.
17. In other words, I argue against the view defended in Molnárfi (2002), Fanselow (2003) and others that scrambling serves the “altruistic” purpose of allowing non-scrambled constituents to function as a focus or a non-focus.
18. Unlike Zubizarreta (1998: 172) I do not assume that the border between the higher and the lower part of the middle field is signaled by adverbs such as *oft*

(‘often’). Frequency adverbs like *oft* (‘often’) and *mehrmals* (‘several times’) can be generated in different positions and thus provide no reliable test for a division of the middle field.

19. Müller (1999) also argues that locative adverbs c-command the direct object in their base position. A different view is advocated in Fanselow (2003), who assumes that objects precede locative adverbials in “normal order sentences”. Note, however, that Fanselow does not distinguish between the different usages of locative adverbs specified in (Frey and Pittner 1998: 531). Locative adverbs can be used as “process-related” adverbials (exhibiting the base position of the latter) or as “frame adverbials” (with the base position characteristic of frame adverbials), and are then to be distinguished from “canonical” locative adverbs, as is confirmed by semantic differences between the latter and the former.
20. The existence of several focus positions in the clause is attested in a variety of languages. Primus (1993) reports that in Finnish, a language with a sentence-initial focus position, a focus can be split such that part of the focalized material is placed in initial position while the rest is placed in sentence-final position. Hungarian has an obligatory fronting rule for focused constituents, but in embedded clauses, a focused constituent can appear in an extraposed position. Krifka (1998) discusses the assumption of a low focus position. However, as already mentioned above, since he assumes that focus tends to be assigned preverbally, he rejects this assumption on the grounds that movement to such a focus position would constitute a lowering operation.
21. Eckardt (1998) considers examples such as (i) as evidence for the opposite view that manner adverbials precede the direct object:
 - (i) *weil Hans sorgfältig ein Hemd bügelte*
 since John carefully a shirt ironed
 However, Frey and Pittner (1998) argue that objects which follow a manner adverbial are “integrated” into the verbal complex (see Jacobs 1993).
22. For the time being, I will ignore the question of where the marked nature of (62c) comes from. For an account in terms of economy considerations see Primus (1993: 892).
23. A similar point can be made with verbs like *aussetzen* (‘expose’) and *widmen* (‘devote’) whose objects have the base order ACC>DAT (Haider and Rosen-gren 1998: 18):
 - (i) *?*Maria hat den LEHRERN_i ihren_i Lieblingsschüler ausgesetzt.*
 Maria has the teachers-DAT their favorite student-ACC exposed
24. The fact that the process-related reading of the adverbial *langsam* is not entirely excluded in an example such as (69) could be explained as a reconstruction effect.
25. In this respect I disagree with Frey and Pittner (1998), who claim that indefinite wh-elements cannot undergo movement at all.
26. Since movement from the specifier of a Focus Phrase to SpecAgrsP would constitute an instance of improper movement, we have to assume that the subject

- in German can meet its Case requirements when not occupying SpecAgrsP. There is independent evidence for this assumption (see e.g. Grewendorf 1989).
27. Belletti (2002) argues for a low VP-peripheral focus position in Italian that is located below AgroP and hosts the postverbal focused subject in free inversion structures. Her main reason for assuming this particular configuration lies in the ungrammaticality of VSO-structures in Italian, which she explains as the result of an intervention effect. This effect is said to be due to the fact that the subject intervenes between AgroP and the base position of the object and thus blocks Case assignment to the latter. Note, however, that it is not clear how this intervention effect would come about. For one thing, the base positions of subject and object are equidistant; for another, it is doubtful whether the A'-chain of focus movement creates an intervention effect for the A-chain established by Case agreement (Chomsky 2001). Furthermore, as pointed out by Belletti herself, the VSO-configuration is possible in other Romance languages such as Spanish and Romanian so that for these languages, either a higher position of the postverbal subject or a different mechanism for the Case marking of the direct object should be assumed. I conclude from these problems that there is no compelling reason for locating the lower focus below AgroP. For an alternative account of the ungrammatical VSO order in Italian see Zubizarreta (1998: sect. 3.2).
 28. I ignore the interactions between Turkish scrambling and a typology of Case analyzed by Kornfilt (2003). While specific DPs, which realize structural Case overtly, can freely scramble to a variety of positions in Turkish, non-specific DPs do not bear overt structural Case and must remain in a position to the immediate left of the verb. Kornfilt accounts for the latter phenomenon in terms of incorporation. Scrambling is analyzed as A'-movement to discourse-configurational positions.
 29. Jayaseelan discusses the assumption of a TopP below the FocP in order to explain specific properties of postverbal constituents in Malayalam. However, the fact that such a topic below FocP would invariably appear in (linearly) postverbal position leads him to prefer an alternative analysis according to which postverbal topics are analyzed in terms of movement to a pre-IP topic position followed by remnant IP-fronting.
 30. Primus (1993: 889) points out that in languages with free focus placement, narrow focus is preferably placed at the left periphery while wide focus is preferably placed at the right periphery. Based on Stalnaker's (1978) theory of assertion, Bianchi (2002) suggests a semantic distinction between the high and the low focus in terms of the way in which they interact with the common ground of the conversation. This semantic distinction is correlated with syntactic properties of the I-system (middle field) and the C-system (left clausal periphery), respectively.
 31. For arguments that certain types of adverbials can undergo scrambling see Pittner (1999: 182).
 32. For the distinction between "shifting" and "continuing" topics see de Hoop and de Swart (1995).

33. Note, however, that É. Kiss (2003) points out that even in Hungarian, scrambling within the argument field (i.e. in the postverbal field) is not entirely free: in cases where the postverbal field contains both a [+specific] argument denoting a given referent, and a [-specific] argument, introducing a new referent, the order [+specific] before [-specific] sounds less marked than the reverse order. Miyagawa (1997) has argued that scrambling in Japanese is not a strictly optional movement either but is driven by a Case agreement feature in the case of A-scrambling and by something like focus in the case of A'-scrambling.

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Scrambling in the cleft construction in Dravidian

K. A. Jayaseelan and R. Amritavalli

1. Preliminaries

An interesting example of scrambling in Dravidian is the apparently free movement of the cleft focus within a cleft sentence. In the following Malayalam example, the cleft focus, together with the copula, seemingly “floats” into the cleft clause and seems to be able to be positioned anywhere within the latter. (The cleft focus and the copula are shown in bold-face; the cleft clause is shown within brackets in (1a).)

- (1) a. **Mary-(y)e aaNə** [John innale kaND-atə]
Mary-ACC COPULA John yesterday saw-NOMINALIZER
‘It is Mary that John saw yesterday.’
- b. John **Mary-(y)e aaNə** innale kaND-atə
- c. John innale **Mary-(y)e aaNə** kaND-atə
- d. John innale kaND-atə **Mary-(y)e aaNə**

In (1a), the focus and the copula precede the cleft clause; in (1d), they presumably follow the cleft clause. But in (1b) and (1c), they are “within” the cleft clause (i.e., are properly contained in it), superficially speaking.

In Madhavan (1987) (which was the first in-depth study of clefts and pseudoclefts in Malayalam), this phenomenon was indeed analyzed as scrambling. (It was also suggested there that the copula was cliticized to the focus phrase; this accounted for the focus and the copula moving “together”.) We can say that the free floating of the cleft focus contributed in no small measure to the impression that Malayalam (or Dravidian in general) has free word order (see, e.g., Mohanan 1982).

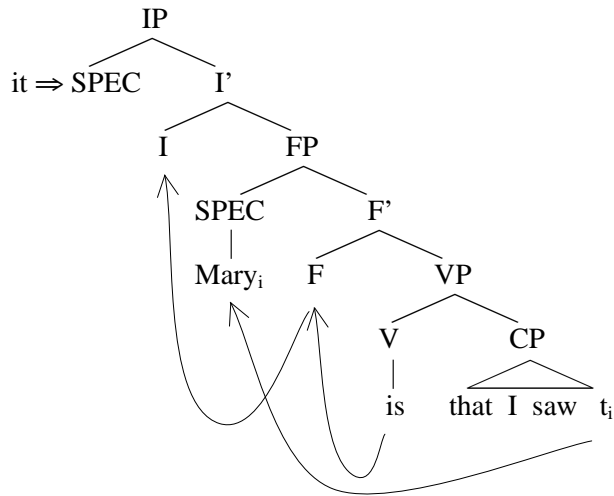
Since any phrasal constituent can be focused by the cleft construction, we can get sentences like the following, which seemingly vary only with respect to what is focused:

- (2) a. *John aaNə Mary-ye innale kaND-atə*
 John COPULA Mary-ACC yesterday saw- NOMIN.
 ‘It is John that saw Mary yesterday.’
- b. *John Mary-ye aaNə innale kaND-atə*
 John Mary-ACC COPULA yesterday saw- NOMIN.
 ‘It is Mary that John saw yesterday.’
- c. *John Mary-ye innale aaNə kaND-atə*
 John Mary-ACC yesterday COPULA saw- NOMIN.
 ‘It was yesterday that John saw Mary.’
- d. *John Mary-ye innale kaaN-uka aaNə ceyt-atə¹*
 John Mary-ACC yesterday see-INF. COPULA did-NOMIN.
 ‘It was seeing that John did Mary yesterday.’

This type of data gave rise to a non-movement analysis of clefts, wherein it was claimed that the copula was only a focus marker in the cleft construction: it could be attached to any phrasal constituent in order to focus it. (See Mohanan 1982. This analysis was proposed also for the cleft construction in Chinese, see Huang 1982.)

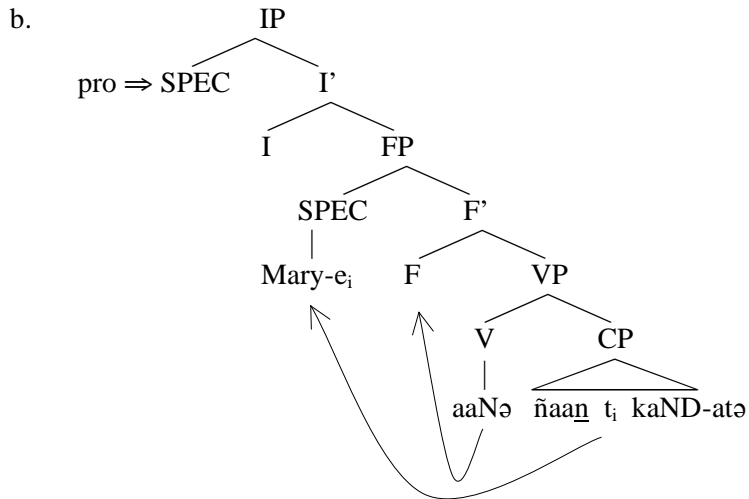
In Jayaseelan (1999, 2001a), two proposals were made about clefts, one of which was about the structure of clefts. It was claimed that there was a focus position immediately above vP/VP, its postulation warranted by a great deal of cross-linguistic data. There were also topic positions above this focus position. (All of these positions were IP-internal.) In the cleft construction, what was happening was the following: the verb ‘be’ took a clausal complement; and a focused phrase from within this clausal complement was moved into the focus position above the VP headed by ‘be’. This can be shown as (3b), for the English sentence (3a):²

- (3) a. *It is Mary that I saw.*
 b.



As shown in the diagram, in English the verb ‘be’ (in the normal course) raises to I (presumably adjoining to Foc^0 as an intermediate step); also pleonastic *it* is inserted into the subject position. So we get (3a). In Malayalam, the copula does not raise to I; and since Malayalam is a *pro*-drop language, the subject position can be filled by *pro*. So (4a) has the structure (4b):³

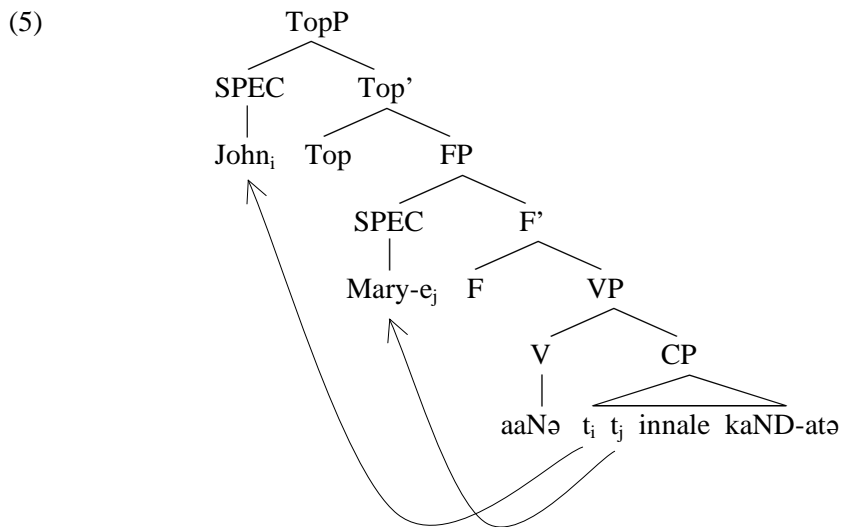
- (4) a. *Mary-(y)e aaNə ñaañ kaND-atə*
 Mary-ACC COPULA I saw- NOMIN.
 ‘It is Mary that I saw.’



As can be seen, this analysis now yields a completely parallel account of the cleft construction of English and Malayalam, two genetically unrelated and typologically dissimilar languages.

A second proposal about clefts (in the two aforementioned papers) had to do with the “floating” of the cleft focus into the cleft clause. It was suggested that this seeming effect was created by the movement of elements from within the cleft clause, to topic positions above the focus position. Thus (2b) (repeated below) would have the structure (5):⁴

- (2) b. *John Mary-ye aaNə innale kaND-atə*
 John Mary-ACC COPULA yesterday saw-NOMIN.
 ‘It is Mary that John saw yesterday.’



The elements that may flank the cleft focus on the left side show all the diagnostics of topics: they must be definite or specific (cf. (6a, b)); they cannot be indefinite and non-specific (cf. (6c)).

- (6) a. *ñaan Mary-k'k'ə aaNə oru kattə / aa kattə ayacc-atə*
 I Mary-DAT COPULA a letter that letter sent-NOMIN.
 ‘It is to Mary that I sent a letter/ that letter.’
- b. *aa kattə Mary-k'k'ə aaNə ñaan ayacc-atə*
 that letter Mary-DAT COPULA I sent-NOMIN.
 ‘It is to Mary that I sent that letter.’

- c. **oru kattə Mary-k'k'ə aaNə ñaañ ayacc-atə*
 a letter Mary-DAT COPULA I sent-NOMIN.
 'It is to Mary that I sent a letter.'

It was claimed in Jayaseelan (1999, 2001a, 2001c) that all clause-internal scrambling in Malayalam, German and Dutch – and also object shift in Scandinavian – could be accounted for in terms of movement to IP-internal topic/focus positions. The scrambling in the cleft construction (it was shown) also yielded to the same type of explanation.⁵

2. Some problems

However there were some problems with the above account of clefting and of scrambling in clefts (noted in Jayaseelan 2001a, fns. 30 and 34). Normally, the movements to IP-internal topic and focus positions are clause-bound. How (then) do phrases “escape” from the cleft clause to land up in the topic/focus positions of the matrix clause (cf. (5))? Why does this happen only in the cleft construction?

Let us first illustrate the clause-boundedness of IP-internal focus movement. Malayalam question movement moves a *wh*-phrase, not to COMP, but to the focus position above *vP*/*VP*. (Superficially it looks as if the *wh*-phrase is moved into a position immediately to the left of *V*; but this is because subsequent “*VP*-vacating movements” move all the phrases in the *VP* to the Specs of functional heads that are still higher than *FocP*.) However there is no successive-cyclic movement of a *wh*-phrase in Malayalam or in any Dravidian language.⁶ Thus a *wh*-phrase in an embedded clause cannot move to the focus position of the matrix clause to indicate matrix scope; cf. (7):

- (7) a. **John [Mary t_i kaNDu ennə] aar-e_i paRaññu ?*
 John Mary saw COMP who-ACC said
 'Who did John say that Mary saw?' (intended meaning)
- b. **John aar-e_i paRaññu [Mary t_i kaNDu ennə] ?*
 John who-ACC said Mary saw COMP

In (7a), the embedded clause is shown in the canonical position of the verb's direct object, which is to the left of the focus position. In (7b), the embedded clause is extraposed to the right of the matrix clause.⁷ As shown,

both sentences are ungrammatical. This indicates that a *wh*-phrase, or more generally a phrase bearing the [+focus]-feature, cannot escape from a clause by focus-to-focus movement.

As regards topicalization, long-distance topicalization is always possible to the sentence-initial (or clause-initial) position in Dravidian, cf. (8). But movement to an IP-internal topic position cannot cross a clause boundary, cf. (9).

- (8) a. *Mary-ye_i [John [Bill t_i kaNDu ennə] paRaññu]*
 Mary-ACC John Bill saw COMP said
 ‘Mary, John said that Bill saw.’
- b. *Mary-ye_i [John paRaññu [Bill t_i kaNDu ennə]]*
 Mary-ACC John said Bill saw COMP
- (9) a. **[John Mary-ye_i enn-ooDə [Bill t_i kaNDu ennə] paRaññu]*
 John Mary-ACC me-to Bill saw COMP said
 ‘John said to me that Bill saw Mary.’ (intended meaning)
- b. **[John Mary-ye_i enn-ooDə paRaññu [Bill t_i kaNDu ennə]]*
 John Mary-ACC me-to said Bill saw COMP

The IP-internal topic positions are higher than (or in linear terms, to the left of) the canonical positions of the verb’s internal arguments (see Jayaseelan 2001a); we have put in an extra internal argument *enn-ooDə* ‘to me’ in (9), to make this fact clear. (In the (b) sentences, the embedded clause is extraposed to the right of the matrix clause.) As shown, *Mary-ye* – while it certainly can be extracted to the sentence-initial topic position, cf. (8) – cannot be moved to the IP-internal topic position of the matrix clause.⁸

So, as we said earlier, the question arises: how can movement from within an embedded clause, and targeting IP-internal topic/focus positions of the matrix clause, take place, just in the cleft construction?

3. Long-distance clefting

Before we attempt to resolve this issue (however), we need to take note of another set of facts.

Clefting is a long-distance rule in Dravidian (as it is in English); cf.

- (10) a. *Mary-ye_i aaNə* [*John* [*Bill t_i kaNDu ennə*] *paRaññ-atə*]
 Mary-ACC COPULA John Bill saw COMP said-NOMIN.
 ‘It is Mary that John said that Bill saw.’
- b. *Mary-ye_i aaNə* [[[*Bill t_i kaNDu ennə*] *ellaawarum*
 Mary-ACC COPULA Bill saw COMP everyone
wis’wasik’k’unnu ennə] *John paRaññ-atə*]
 believes COMP John said-NOMIN.
 ‘It is Mary that John said that everyone believes that Bill saw.’⁹

But significantly, the “floating” phenomenon that we noticed in clefts – which we analyzed as the topicalization of phrases to the left of the cleft focus – is not possible in long-distance clefting; cf.

- (11) a. ?* *John_i Mary-ye_j aaNə* [*t_i enn-ooDə*] [*Bill t_j kaNDu ennə*]
 John Mary-ACC COPULA me-to Bill saw COMP
paRaññ-atə
 said-NOMIN.
 ‘It is Mary that John said to me that Bill saw.’ (intended meaning)
- b. ?* *enn-ooDə_i Mary-ye_j aaNə* [*John t_i*] [*Bill t_j kaNDu ennə*]
 me-to Mary-ACC COPULA John Bill saw COMP
paRaññ-atə
 said-NOMIN.
 (same as (11a))
- c. ?* *John_i enn-ooDə_j Mary-ye_k aaNə* [*t_i t_j*] [*Bill t_k kaNDu ennə*]
 John me-to Mary-ACC COPULA Bill saw COMP
paRaññ-atə
 said-NOMIN.
 (same as (11a))

- (12) a. ?* *Bill_i Mary-ye_j aaNə* [*John enn-ooDə* [*t_i t_j kaNDu ennə*]
 Bill Mary-ACC COPULA John me-to saw COMP
paRaññ-atə
 said-NOMIN.
 (same as (11a))
- b. ?* *John_i enn-ooDə_j Bill_k Mary-ye_t aaNə* [*t_i t_j [t_k t_l kaNDu ennə*]
 John me-to Bill Mary-ACC COPULA saw COMP
paRaññ-atə
 said-NOMIN.
 (same as (11a))

As shown, a phrase cannot be scrambled – topicalized, in our analysis – to the left of the cleft focus, neither from the less deeply embedded part of the cleft clause (11a, b, c), nor from its more deeply embedded part (12a, b).

The absence of “floating” in long-distance clefting was first noticed in Mohanan (1982), although Mohanan himself did not analyse the data he discovered as instances of clefting. Two relevant examples from Mohanan are the following (= Mohanan’s (80) and (82)).¹⁰

- (13) a. *amma mooSTiccu ennə kuTTi paRaññatə ii pustakam aaNə*
 mother stole that child said-it this book is
 ‘It is this book that the child said that the mother stole.’¹¹
- b. * [[*amma ii pustakam aaNə mooSTiccu*] *ennə*] *kuTTi*
 mother this book is stole that child
paRaññatə
 said-it

In our analysis, (13a) has the structure (13’a); i.e. it is an instance of the cleft clause being moved to the left of the cleft focus, cf. an earlier example of this in (1d). (Whether the cleft clause is moved to a clause-internal topic position or moved to the ‘canonical’ position of the direct object, which is lower than the topic position, is immaterial to us here.¹²)

- (13’) a. [_{CP(i)} *amma mooSTiccu ennə kuTTi paRaññ-atə*] *ii*
 mother stole COMP child said-NOM this
pustakam aaNə t_i
 book COPULA
 ‘It is this book that the child said that the mother stole.’

(13b) is the interesting sentence for us here; in it, a phrase has been illicitly scrambled from within the cleft clause of long-distance clefting. The structure we postulate is the following:

- (13') b. * [_{TopP} *amma*_i [_{FocP} *ii* *pustakam*_j [_{VP} *aaNə* [_{CP} [_{CP} *t_i t_j*
 mother this book COPULA
 moosTiccu ennə] *kuTTi paRaññ-atə*]]]]]
 stole COMP child said-NOM

Mohanan (1982) (as we just said) did not treat these data as examples of clefting. For Mohanan, (13b) was a problem for a different reason. Recall that Mohanan had a non-movement analysis of clefts, which says that the copula is simply a focus marker attached to a focused element. For this analysis, the question arises: why can't the copula be affixed to *ii pustakam* 'this book' in the embedded clause here (given Mohanan's bracketing as shown in (13b))?

Mohanan's solution was to claim that clefting in Malayalam is a clause-bound rule; and that a sentence like (13a) is an instance of relativization, not clefting. (This explains his translation of (13a), see fn. 11.)

We shall say that Mohanan was right in claiming that there is a relativization operation taking place in a sentence like (13a). But this is not to deny that it is a cleft. The English sentence corresponding to it – see the translation of (13a) – also plausibly employs relativization, but is clearly an instance of the cleft construction.

Mohanan was again right (we shall say) in his intuition that there are different types of operations underlying short-distance and long-distance clefting in Malayalam. We turn to these in the next section.

4. Relativization in clefts

The following are examples of relative clauses in Malayalam:

- (14) a. [*ñaañ* ____ *kaND-a*] *kuTTi*
 I saw-RELATIVIZER child
 'the child that I saw'
- b. [[*ñaañ* ____ *kaNDu ennə*] *niyyaL paRayunn-a*] *kuTTi*
 I saw COMP you say-RELATIVIZER child
 'the child that you say that I saw'

- c. [[ñaan ___ kaNDu ennə] niḡḡaL paRayunnu ennə] ellaawarum
 I saw COMP you say COMP everyone
 wis'wasik'k'unn-a] kuTTi¹³
 believe-RELAT. child
 'the child that everyone believes that you say that I saw'

As can be seen, relativization is a long-distance rule. It leaves a gap in the position where the head of the relative clause has been extracted from. (We have indicated the gap in the examples.) The relative clause ends with what is probably a relative proform, an invariant *-a* (glossed as a 'relativizer').¹⁴ The parallels with English relativization (modulo word order) should be obvious. But there is one difference: the Dravidian relative clause is non-finite. This may not be obvious from an inspection of our examples, all of which appear to contain a tensed verb. But finiteness in Dravidian is indicated, not by tense, but by agreement.¹⁵ The absence of agreement is not readily apparent in Malayalam which (alone, of all Dravidian languages) has lost verb agreement; but it can be seen in Kannada (cf. the corresponding examples given in the appendix), and in the following Tamil examples:

- (15) a. *naan paiyan-ai paar-tt-een*
 I boy-ACC see-PAST-1SG
 'I saw the boy.'
 b. [*naan* ___ *paar-tt-a*] *paiyan*
 I see-PAST-RELAT. boy
 'the boy that I saw'

Note that (15a) (a finite clause) has verb agreement, which is absent in the relative clause of (15b).¹⁶

Long-distance relativization shows island effects, which (to our mind) demonstrates that some element has been moved overtly. Thus note the contrast between (16a) and (16b), the latter showing a CNPC effect.

- (16) a. [[ñaan ___ kaNDu ennə] niḡḡaL sammatik'k'unn-a] kuTTi
 I saw COMP you admit-RELAT. child
 'the child that you admit that I saw'
 b. ?* [[ñaan ___ kaNDu enn]-a] *waadam*
 I saw COMP-RELAT. claim
 niḡḡaL sammatik'k'unn-a] kuTTi
 you admit-RELAT. child
 'the child that you admit the claim that I saw'

Assuming a Vergnaud-type raising analysis of relativization, let us say that the head of the relative clause has been raised successive-cyclically from the position of the gap.¹⁷

We need to note a further fact about the clause-final *-a* of the relative clause (which we suggested is a relative proform). When the head of the relative clause is null, as in free (or headless) relatives, this *-a* shows agreement with the missing (understood) head. This fact – see Anandan 1985 for further details – is illustrated below:

(17) a. [___ *enn-e kaND-a*] *manuSyān*
 I-ACC saw-RELAT. man
 ‘the man who saw me’

b. ___ *enn-e kaND-a-wān*
 I-ACC saw-RELAT.-3SG.MASC.

(18) a. [___ *enn-e kaND-a*] *peNNə*
 I-ACC saw-RELAT. woman
 ‘the woman who saw me’

b. ___ *enn-e kaND-a-wāL*
 I-ACC saw-RELAT.-3SG.FEM.

(19) a. [___ *enn-e kaND-a*] *aaLukaL*
 I-ACC saw-RELAT. people
 ‘the people who saw me’

b. ___ *enn-e kaND-a-war*
 I-ACC saw-RELAT.-3PL.

(20) a. [___ *en-te meeLe wiiN-a*] *maram*
 I-GEN on top fell-RELAT. tree
 ‘the tree that fell on top of me’

b. ___ *en-te meeLe wiiN-a-tə*
 I-GEN on top fell-RELAT.-3SG.NEUT.

This last agreeing form of *-a*, namely the third person singular neuter form *-a-tə*, is particularly interesting. For it is the same *-atə* that occurs at the end of the cleft clause; cf.

- (21) *ii manuSyān/ ii peNNə/ ii aaLukaL aaNə [___ enn-e*
 this man this woman these people COPULA I-ACC
kaND-a-tə]
 saw-RELAT.-3SG.NEUT.
 ‘It is this man/ this woman/ these people that saw me.’

We have hitherto glossed this *-atə* as a ‘nominalizer’, cf. (1a); but a finer morphological analysis shows that it is an agreeing form of the relative proform *-a*. In the cleft clause (however), it is invariant, cf. (21). One could say that the third person singular neuter agreement form is the default agreement form, and that this is what is employed in clefts. Alternatively, and preferably, one could say that the *-atə* at the end of the cleft clause no longer counts as agreement.

Interestingly, if we substitute the truly agreeing form at the end of the cleft clause, what we get is the pseudocleft; see Madhavan (1987) for a more detailed analysis. Thus consider (22a) and (22b):

- (22) (cleft)
 a. *iwar aaNə [___ enn-e talliy-a-tə]*
 these (people) COPULA I-ACC beat-RELAT.-3SG.NEUT.
 ‘It is these people who beat me.’
 (pseudocleft)
 b. *iwar aaNə [___ enn-e talliy-a-war]*
 these (people) COPULA I-ACC beat-RELAT.-3PL
 ‘Who beat me are these people.’

Among the many differences between clefts and pseudoclefts that Madhavan (1987) discusses is one that is particularly interesting for us: pseudoclefts do not allow the kind of scrambling that we noted in clefts. Cf.

- (23) (cleft)
 a. *enn-e iwar aaNə talliy-a-tə*
 I-ACC these (people) COPULA beat-RELAT.-3SG.NEUT.
 ‘It is these people who beat me.’
 (pseudocleft)
 b. **enn-e iwar aaNə talliy-a-war*
 I-ACC these (people) COPULA beat-RELAT.-3PL.

Madhavan explains the difference by claiming that the free relative of the pseudocleft is an NP, specifically a complex NP, from which extraction is not possible; whereas the cleft clause (as its name suggests) is now simply a clause, cf. its English counterpart. This explanation might be on the right track.

5. A solution

Coming back to the problem of scrambling in clefts, we noted the following facts: Scrambling is possible in short-distance clefts (subject always to a definiteness/specificity constraint on the scrambled phrase). But scrambling is not possible in long-distance clefts; intriguingly, it is not possible irrespective of whether the phrase is extracted from a more deeply embedded clause or from the topmost clause of the cleft clause.

This last fact is important, because it rules out a certain analysis. We said that the Dravidian relative clause is nonfinite; and we suggested that the cleft clause is a relative clause. So plausibly, the cleft clause is nonfinite. In the case of long-distance clefts, the embedded clauses within the cleft clause are finite, however. Therefore if we were to say that it is finiteness that is a “barrier” to scrambling in clefts, we can explain the unacceptability of (24b), derived from (24a) by scrambling:

- (24) a. *Mary-k’k’ə_i aaNə* [*John enn-oodə* [*Bill t_i ii pustakam*
 Mary-DAT COPULA John me-to Bill this book
koDuttu ennə] *paRaññ-a-tə*]
 gave COMP said-RELAT.-3SG.NEUT
 ‘It is to Mary that John told me that Bill gave this book.’
- b. *?* ii pustakam_j Mary-k’k’ə_i aaNə* [*John enn-oodə* [*Bill t_i t_j*
 this book Mary-DAT COPULA John me-to Bill
koDuttu ennə] *paRaññ-a-tə*]
 gave COMP said-RELAT.-3SG.NEUT.

Here (note) *ii pustakam* ‘this book’ is scrambled out of a finite clause.

But how do we explain the grammaticality status of (24c)?

- (24) c. *?* John_j enn-oodə_k Mary-k’k’ə_i aaNə* [*t_j t_k* [*Bill t_i ii pustakam*
 John me-to Mary-DAT COPULA Bill this book
koDuttu ennə] *paRaññ-a-tə*]
 gave COMP said-RELAT.-3SG.NEUT.

Here the scrambled elements *John* and *enn-ooDə* ‘to me’ have been extracted from the non-embedded part of the cleft clause, which we said is nonfinite. So an explanation in terms of finiteness will not do.

Our solution for the problem is to say that there are two clefts in Dravidian, employing different syntactic operations. The long-distance cleft obligatorily employs relativization in extracting the cleft focus from the cleft clause; a consequence is that nothing else can be extracted from the cleft clause. It is easy enough to demonstrate that nothing can be extracted from a ‘regular’ relative clause, a fact that is expected given the universality of the CNPC effect. Cf.

- (25) a. *ñaañ* [*John Mary-k’k’ə* ___ *koDutt-a*] *pustakam waayiccu*
 I John Mary-DAT gave-RELAT. book read
 ‘I read the book that John gave to Mary.’
- b. **Mary-k’k’ə; ñaañ* [*John t_i* ___ *koDutt-a*] *pustakam waayiccu*
 Mary-DAT I John gave-RELAT. book read

So this explains the impossibility of scrambling out of the cleft clause of a long-distance cleft.

The short-distance cleft (we shall say) does not employ relativization at all; although it retains the relative clause morphology as a historical residue. That is, it does not move the phrase that becomes the cleft focus through any “escape hatch” of a C-system. Instead, it moves elements – both the phrase that becomes the cleft focus, and the phrases that are topicalized to its left – directly from the cleft clause into the matrix clause. For this, it takes advantage of the transparency of certain types of nonfinite clauses for extraction.

Let us say that in a short-distance cleft, the cleft clause has no C-system at all, it is only an IP. Now we can restate our claim about its transparency for extraction in terms of the phase theory (Chomsky 1999, 2001): the cleft clause does not count as a phase, and therefore a matrix topic/focus position can extract a phrase from within it.¹⁸

6. Conclusion: the evidence from another type of cleft clause

We shall conclude by noticing a type of cleft clause in Malayalam which we have not presented so far, and whose properties seem to support the analysis of scrambling in clefts that we have proposed above.

Dravidian has a type of cleft construction in which the cleft clause is a straightforward infinitival; where the infinitival cleft clause is interpreted as describing a habitual action or a ‘usual’ state-of-affairs:

- (26) a. *kaññi; aaNə* [*John t_i kuDik’k’-uka*]¹⁹
 rice gruel COPULA John drink-INF.
 ‘It is rice gruel that John drinks (as a practice).’

The cleft clause (observe) has no relative clause morphology; so seemingly clefting in this type of construction does not involve a relativization strategy. Recall that this is what we claimed about short-distance clefts; but here is now evidence that such an alternative route to clefting is available in the language.

The parallelism with short-distance clefts goes all the way through. Thus scrambling is allowed in this construction:

- (26) b. *John_j kaññi; aaNə* [*t_j t_i kuDik’k’-uka*]
 John rice gruel COPULA drink-INF.

But significantly, this construction disallows long-distance clefting:

- (27) **kaññi; aaNə* [*Mary [John t_i kuDik’k’-um ennə] paRay-uka*]
 rice gruel COPULA Mary John drink-FUT COMP say-INF.
 ‘It is rice gruel that Mary usually says that John drinks.’
 (intended meaning)

We can conclude from this that there is only one route to long-distance clefting: namely relativization. And relativization naturally brings with it relative clause morphology, disallowing an infinitival marker like *-uka* at the end of the cleft clause.

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Appendix

We give here the Kannada counterparts of the Malayalam examples in the text.

Note that the Kannada cleft sentence does not instantiate a copula. (Equative sentences in Kannada occur with and without a copula (cf. Amritavalli 2000: n.2). A sentence with an overt copula takes a small clause complement whose predicate is marked with the complementiser – *aagi*; it is negated by *illa*. This sentence-type does not occur in the cleft construction.) The copula-less “nominal” sentence, a finite clause, is negated by the “nominal negative” *alla*. This negative *alla* is shown optionally included in the examples, as it adds to the naturalness of the scrambled cleft sentences.

- (1) a. *Mary-yanna (alla) [John ninne nooDid-du]*
 Mary-ACC (NEG) John yesterday saw-NOMINALIZER
 ‘It is (not) Mary that John saw yesterday.’
- b. *John Mary-yanna (alla) ninne nooDid-du*
- c. *John ninne Mary-yanna (alla) nooDid-du*
- d. *John ninne nooDid-du Mary-yanna (alla)*
- (2) a. *John (alla) Mary-yanna ninne nooDid-du*
 John (NEG) Mary-ACC yesterday saw-NOMIN.
 ‘It is (not) John that saw Mary yesterday.’
- b. *John Mary-yanna (alla) ninne nooDid-du*
 John Mary-ACC (NEG) yesterday saw-NOMIN.
 ‘It is (not) Mary that John saw yesterday.’
- c. *John Mary-yanna ninne (alla) nooDid-du*
 John Mary-ACC yesterday (NEG) saw-NOMIN.
 ‘It was (not) yesterday that John saw Mary.’
- d. This sentence does not have a grammatical counterpart in Kannada: the verb cannot be focussed in a cleft sentence.
- **John Mary-yanna ninne nooDuvudu (alla) maaDid-du*
 John Mary-ACC yesterday see-INF (NEG) did-NOMIN.
 ‘It was (not) seeing that John did Mary yesterday.’

- (6) a. *naanu Mary-ge (alla) ondu kaagada / aa kaagada kaLuhisid-du*
 I Mary-DAT (NEG) a letter that letter sent-NOMIN.
 ‘It is (not) to Mary that I sent a letter/ that letter.’
- b. *aa kaagada Mary-ge (alla) naanu kaLuhisid-du*
 that letter Mary-DAT (NEG) I sent-NOMIN.
 ‘It is (not) to Mary that I sent that letter.’
- c. **ondu kaagada Mary-ge (alla) naanu kaLuhisid-du*
 a letter Mary-DAT (NEG) I sent-NOMIN.
 ‘It is (not) to Mary that I sent a letter.’
- (7) a. **John [Mary t_i nooDidaLu anta] yaar-anna_i heeLidanu?*
 John Mary saw COMP who-ACC said
 ‘Who did John say that Mary saw?’ (intended meaning)
- b. **John yaar-anna_i heeLidanu [Mary t_i nooDidaLu anta]?*
 John who-ACC said Mary saw COMP
- (8) a. *Mary-anna_i [John [Bill t_i nooDidanu anta] heeLidanu]*
 Mary-ACC John Bill saw COMP said
 ‘Mary, John said that Bill saw.’
- b. *Mary-anna_i [John heeLidanu [Bill t_i nooDidanu anta]]*
 Mary-ACC John said Bill saw COMP
- (9) a. **[John Mary-anna_i nana-ge [Bill t_i nooDidanu anta] heeLidanu]*
 John Mary-ACC me-to Bill saw COMP said
 ‘John said to me that Bill saw Mary.’ (intended meaning)
- b. **[John Mary-anna_i nana-ge heeLidanu [Bill t_i nooDidanu anta]]*
 John Mary-ACC me-to said Bill saw COMP
- (10) a. *Mary-anna_i (alla) [John [Bill t_i nooDidanu anta] heeLid-du]*
 Mary-ACC (NEG) John Bill saw COMP said-NOMIN.
 ‘It is (not) Mary that John said that Bill saw.’
- b. *Mary-anna_i (alla) [[[Bill t_i nooDidanu anta] ellaru tiLididdaare*
 Mary-ACC (NEG) Bill saw COMP everyone believes
anta] John heeLid-du]
 COMP John said-NOMIN.
 ‘It is (not) Mary that John said that everyone believes that Bill saw.’

- (11) a. ?* *John_i Mary-anna_j (alla) [t_i nana-ge [Bill t_j nooDidanu anta]*
 John Mary-ACC (NEG) me-to Bill saw COMP
heeLid-du]
 said-NOMIN.
 ‘It is (not) Mary that John said to me that Bill saw.’
 (intended meaning)
- b. ?* *nana-ge_i Mary-anna_j (alla) [John t_i [Bill t_j nooDidanu anta]*
 me-to Mary-ACC (NEG) John Bill saw COMP
heeLid-du]
 said-NOMIN. (same as (11a))
- c. ?* *John_i nana-ge_j Mary-anna_k (alla) [t_i t_j [Bill t_k nooDidanu*
 John me-to Mary-ACC (NEG) Bill saw
anta] heeLid-du]
 COMP said-NOMIN. (same as (11a))
- (12) a. ?* *Bill_i Mary-anna_j (alla) [John nana-ge [t_i t_j nooDidanu anta]*
 Bill Mary-ACC (NEG) John me-to saw COMP
heeLid-du]
 said-NOMIN. (same as (11a))
- b. ?* *John_i nana-ge_j Bill_k Mary-anna_l (alla) [t_i t_j [t_k t_l nooDidanu*
 John me-to Bill Mary-ACC (NEG) saw
anta] heeLid-du]
 COMP said-NOMIN.
 (same as (11a))
- (14) a. [*naanu ___ nooDid-a] magu*
 I saw-relativizer child
 ‘the child that I saw’
- b. [[*naanu ___ nooDide anta] niivu heeLuv-a] magu*
 I saw-1PSG COMP you say-relativizer child
 ‘the child that you say that I saw’
- c. [[[*naanu ___ nooDide anta] niivu heeLuviri anta]*
 I saw-1PSG COMP you say-2PPL COMP
ellaru tiLidiruv-a] magu
 everyone believe-relativizer child
 ‘the child that everyone believes that you say that I saw’

- (16) a. *[[naanu ___ nooDide anta] niivu oppikoLLuv-a] magu*
 I saw-1PSG COMP you admit-RELAT. child
 ‘the child that you admit that I saw’
- b. ?* *[[[naanu ___ nooDide annuv]-a maatu] niivu*
 I saw-1PSG COMP-RELAT. claim you
oppikoLLuv-a] magu
 admit-RELAT. child
 ‘the child that you admit the claim that I saw’
- (17) a. *[___ nann-anna nooDid-a] manuSya*
 I-ACC saw-RELAT. man
 ‘the man who saw me’
- b. *___ nann-anna nooDid-a-vanu*
 I-ACC saw-RELAT.-3SG.MS
- (18) a. *[___ nann-anna nooDid-a] hengasu*
 I-ACC saw-RELAT. woman
 ‘the woman who saw me’
- b. *___ nann-anna nooDid-a-vaLu*
 I-ACC saw-RELAT.-3SG.FM
- (19) a. *[___ nann-anna nooDid-a] janaru*
 I-ACC saw-RELAT. people
 ‘the people who saw me’
- b. *___ nann-anna nooDid-a-varu*
 I-ACC saw-RELAT.-3PL
- (20) a. *[___ nann-a meeLe bidd-a] mara*
 I-GEN on top fell-RELAT. tree
 ‘the tree that fell on top of me’
- b. *___ nann-a meeLe bidd-i-ddu*
 I-GEN on top fell-RELAT.-3SG.NEUT.
- (21) *ii manuSya/ ii hengasu/ ii jana (alla) [___ nann-anna nooD-i-ddu]*
 this man this woman these people (NEG) I-ACC saw-RELAT-3SG.NEUT
 ‘It is (not) this man/ this woman/ these people that saw me.’

- (22) (cleft)
- a. *ivar* (*alla*) [___ *nann-anna hoDed-a-ddu*]
 these (people) (NEG) I-ACC beat-RELAT.-3SG.NEUT.
 ‘It is (not) these people who beat me.’
- (pseudocleft)
- b. *ivar* (*alla*) [___ *nann-anna hoDed-a-varu*]
 these (people) (NEG) I-ACC BEAT-RELAT.-3PL.
 ‘Who beat me are (not) these people.’
- (23) (cleft)
- a. *nann-anna ivar* (*alla*) *hoDed-a-ddu*
 I-ACC these (people) (NEG) beat-RELAT.-3SG.NEUT.
 ‘It is not these people who beat me.’
- (pseudocleft)
- b. **nann-anna ivar* (*alla*) *hoDed-a-varu*
 I-ACC these (people) (NEG) beat-RELAT.-3PL.
- (24) a. *Mary-ge_i* (*alla*) [*John nana-ge* [*Bill t_i ii pustaka koTTa anta*]
 Mary-DAT (NEG) John me-to Bill this book gave COMP
heeL-i-ddu]
 said-RELAT.-3SG.NEUT.
 ‘It is (not) to Mary that John told me that Bill gave this book.’
- b. ?* *ii pustaka_j Mary-ge_i* (*alla*) [*John nana-ge* [*Bill t_i t_j koTTa*
 this book Mary-DAT (NEG) John me-to Bill gave
anta] *heeL-i-ddu*]
 COMP said-RELAT.-3SG.NEUT.
- c. ?* *John_j nana-ge_k Mary-ge_i* (*alla*) [*t_j t_k* [*Bill t_i ii pustaka koTTa*
 John me-to Mary-DAT (NEG) Bill this book gave
anta] *heeL-i-ddu*]
 COMP said-RELAT.-3SG.NEUT.
- (25) a. *naanu* [*John Mary-ge* ___ *koTT-a*] *pustaka oodide*
 I John Mary-DAT gave-RELAT. book read
 ‘I read the book that John gave to Mary.’
- b. * *Mary-ge_i naanu* [*John t_i* ___ *koTT-a*] *pustaka oodide*
 Mary-DAT I John gave-RELAT. book read

(26) Note: The examples below correspond to the Malayalam examples in the text that are described as “straightforward infinitival(s), where the infinitival cleft clause is interpreted as describing a habitual action or a ‘usual’ state-of-affairs.” While the interpretation referred to is readily identifiable in Kannada, it is less obvious in this language that the form of the verb is an infinitival; this verb form is indistinguishable from the corresponding “present-tense” nominalized verb, or gerund. (It has been noted in Amritavalli (2000: n.8) that nominalized and infinitive verbs in Kannada have overlapping privileges of occurrence, thus appearing to fall into a single category ‘nonfinite.’ In the “nominal” sentence-type (i.e. the verbless copular clause) represented by the cleft, only the nominalized nonfinite verb is attested, and not the *-alu* form.)

(26) a. *kanji_i* (*alla*) [*John t_i kuDiyuvudu*]
 rice gruel (NEG) John drink-INF
 ‘It is (not) rice gruel that John drinks (as a practice).’

b. *John_j kanji_i* (*alla*) [*t_j t_i kuDiyuvudu*]
 John rice gruel (NEG) drink-INF

(27) **kanji_i* (*alla*) [*Mary [John t_i kuDiyuttaane anta] heeLuvudu*]
 rice gruel (NEG) Mary John drink-NONPST COMP say-INF
 ‘It is (not) rice gruel that Mary usually says that John drinks.’
 (intended meaning)

Notes

1. When the verb is focused, the Tense and the Nominalizer have to be affixed to a dummy verb *cey-* ‘do’; and the verb itself must be in the infinitive form. For completeness of data, let us note also a sentence like (i) – this type of cleft was first pointed out in Srikumar 1992 – where (apparently) the whole cleft clause is focused:

(i) *John ninṇ-ooDə nuNa paRaññ-atə aaNə*
 John you-to lie said-NOM COPULA
 ‘It is that John told you a lie.’

(In English this is natural only with negation:

(ii) *It is not that John told you a lie.*)

2. In (3b), 'Mary' is shown as the antecedent of 't_i'. But in a sentence like (i), where the cleft clause has a relative pronoun,
 - (i) *It is Mary [who I saw t yesterday]*
 the reader may ask: what is the antecedent of the trace – 'Mary' or 'who'?
 This problem (note) is actually one that arises in any Vergnaud-type raising analysis of relatives, and is not particular to our analysis of clefts. Thus, in (ii):
 - (ii) *... the man [who I saw t]*
 is 't' the trace of 'man' or 'who'? If we follow Kayne's solution to this problem (Kayne 1994: 84ff.), the answer (for (ii)) would be that what is raised to Spec,CP from the trace position is 'who man'; and that 'man' subsequently undergoes further movement. Adopting this suggestion for clefts too, we could say that in (i), it is 'who Mary' that raises from the trace position to SpecCP of the cleft clause, and that 'Mary' subsequently raises to the cleft focus position. Incidentally, the position that clefting involves relativization is a well-established one in the literature, see Kayne (1994: 153).
3. In (4b), regarding the embedded clause, it will later be argued that it is an IP in short-distance clefts, and a CP in long-distance clefts. (For the time being, we show it simply as a CP.)
4. In SOV languages the verb's internal arguments move into their 'canonical' positions which intervene between the topic positions and the focus position; see Jayaseelan (2001a) for details. We leave these positions out of account here since they are not relevant to our discussion.
5. Grewendorf (this volume) also proposes that scrambling is either focus movement or topicalization. Otsuka (this volume) assumes that scrambling in Tongan is (only) focus movement, specifically movement to express information focus. There are some differences of detail between Grewendorf's and Jayaseelan's (Jayaseelan 2001a) assumptions about the structure of the "middle field" in SOV languages. (We do not go into them here, since they do not materially affect anything we say in this paper).
6. There is successive-cyclic movement of the "head" of a relative clause, though, since relativization is a long-distance rule, see section 4 below. (Jayaseelan (2003) has a suggestion about why Dravidian allows long-distance relativization but not long-distance question movement. The proposal essentially is that Dravidian has no focus Phrase, but has topic Phrases, in the C system; and that relativization uses a topic Phrase as the "escape hatch".)
7. Dravidian commonly moves an embedded clause to the right or the left of the matrix clause. This seems to be a strategy to avoid centre embedding.
8. Similar restrictions apparently apply in German, see Grewendorf (this volume). Grewendorf speculates that movement from a clause-peripheral to a clause-internal topic/focus position counts as "improper movement".
9. In (10b), the embedded clauses are moved to the left of the matrix clause, see footnote 7. However the sentence is quite grammatical (if awkward), even if the embedded clauses are left in their canonical (direct object) positions:

- (10b') *Mary-ye_i aaNə* [*John* [*ellaawarum* [*Bill* *t_i* *kaNDu ennə*]
 Mary-ACC COPULA John everyone Bill saw COMP
wis'wasik'k'unnu ennə] *paRaññ-atə*]
 believes COMP said-NOMIN.
 'It is Mary that John said that everyone believes that Bill saw.'

10. The transliteration has been modified to be in line with the conventions of this paper. The word-for-word glossing has been left unchanged. The translation has been changed in (13a), see fn. 11. The bracketing in (13b) – which we do not agree with, see below – is Mohanan's.

11. Mohanan wrongly translates this sentence as: 'This is the book the child said the mother stole.' But the sentence corresponding to this translation is the following:

- (i) *amma mooSTiccu ennə kuTTi paRaññ-a pustakam itə aaNə*
 mother stole COMP child said-RELATIVIZER book this is
 'This is the book that the child said that the mother stole.'

12. Within the cleft clause, the embedded clause has been moved to the left of the matrix clause, see fn. 7. (This holds true of (13b) also.)

13. In (14b) and (14c), the embedded clauses have been moved to the left of the matrix clauses in order to avoid centre-embedding (see fn. 7). But the sentences would still be fine if this were not done, cf.

- (14c') [*ellaawarum* [*niṅṅaL* [*ñaaṅ* ___ *kaNDu ennə*] *paRayunnu ennə*]
 everyone you I saw COMP say COMP
wis'wasik'k'unn-a] *kuTTi*
 believe-RELAT. child
 'the child that everyone believes that you say that I saw'

14. This element is probably historically related to the demonstrative *aa* 'that'. (Cf. the multiple functions of English *that*.)

15. This is the traditional position about finiteness in Dravidian linguistics. See Amritavalli & Jayaseelan (2005), where it is suggested that agreement is a reflex of the indicative mood in Dravidian. It is also argued (ibid.) that Dravidian has no tense; and that what are usually analyzed as tense morphemes are in fact aspect morphemes. (Aspect is interpreted as tense in finite clauses.)

Incidentally, the Dravidian facts are in accordance with an old observation in the literature – see Keenan (1985: 160) – that in languages with a pre-nominal relative clause, the verb is participial (non-finite).

16. In fact, the absence of agreement/indicative mood is only a special case of a more general restriction that a Dravidian relative clause may contain no mood phrase – and therefore, no modals.

17. The correlative construction, on the other hand, does not show island effects, which argues that this construction does not involve movement; see Jayaseelan (2001b) for examples and discussion.

18. There is evidence that the cleft clause has undergone some changes historically; e.g. the *-atə* at the end of it is now invariant and no longer counts as agreement (as we said earlier). The loss of the C-system could be part of these changes.

There is an apparent problem with our solution, though. One might ask: if a “reduced” cleft clause (which is only an IP) is available in the language, why can’t it be generated in the long-distance cleft also? This would make a sentence like (24c) difficult to explain: here, if the cleft clause can be an IP, what would prevent extraction from the top (matrix-clause) part of the cleft clause? The answer seems to be the following: Since there is long-distance extraction of the cleft focus in this sentence, the process of relativization must be resorted to. And possibly, relativization requires all the clauses “on its path” to be CPs.

We are (in effect) now claiming that there are two *-atə* clauses (cleft clauses) in the language: one which is an IP, and another which is a CP. In long-distance clefts only the latter can be employed, for the reason suggested above.

19. The *-uka* infinitival normally allows only a PRO subject, as one should expect (and as noted in Jayaseelan 1985):

(i) [*(*John) paaTTə paaD-uka*] *eLuppam alla*
 John song sing-INF easy is.not
 ‘(*John) to sing a song is not easy.’

But it allows a nominative subject in a context like (ii), for unclear reasons:

(ii) [*John paaTTə paaD-uka*] *enn-atə atbhutam aaNə*
 John song sing-INF COMP-NOMIN. wonder is
 ‘(For) John to sing a song is a wonder.’

In (26a), possibly there is a non-overt aspectual element in the embedded clause (perhaps signifying the ‘habitual action’ meaning) which licenses the nominative Case on the subject. (Aspect licensing a nominative subject ought to be familiar from English, cf. *John being away, .../John having left, ...*)

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Asymmetries between pre-verbal and post-verbal scrambling in Turkish

Jaklin Kornfilt

1. Introduction

Turkish is known to be a free word-order language. A good number of its scrambling properties are similar to those that have been investigated in depth for Japanese (e.g. Saito 1992 and related work; more recently, Miyagawa 2002, where some resemblances between these two languages are pointed out in this regard). In these brief remarks¹, I would like to present some observations about Turkish scrambling – observations which, to my knowledge, have received very little attention, if at all. Since Turkish allows for post-verbal constituents (PVCs) much more readily than Japanese, my remarks will focus on those, but I shall consider pre-verbal scrambling, as well. In addition, these observations on Turkish scrambling provide evidence against the claim of Fukui (1993), among others, according to which a “Parameter Preservation Measure” determines that head-final languages such as Japanese and Turkish have optional movement to the left (and not to the right) and head-initial languages such as English have optional movement to the right.

These observations will be gathered around the following questions:

1. Are PVCs located higher than pre-verbal constituents or lower?
2. Is post-verbal scrambling similar to pre-verbal scrambling with respect to scope relationships and hierarchical positions?

2. Position of PVCs with respect to pre-verbal constituents

This issue has received attention in the last decade or so, due to work by Kayne (1994). In Kayne’s (and like-minded) work, where asymmetric c-command and linear sequence directly correlate, and where rightward movement is excluded, “extraposed”² constituents (such as PVCs in Turkish) are

base-generated in their surface positions, and constituents preceding them are moved left- (and up-) ward (insofar as they haven't been base-generated in some left-peripheral and high position, by virtue of being, e.g., a subject or the like).

Kural (1994, 1997) presents arguments, largely based on quantifier-scope interactions, to show that PVCs in Turkish are higher in the phrase structure than pre-verbal constituents. This would strongly suggest that their position is not due to leftward movement of pre-verbal (non-subject) constituents (since, if this were so, PVCs should be positioned lower with respect to pre-verbal constituents), but rather that PVCs have been moved rightward, adjoining to the CP.

Before turning to a discussion of quantifier scope interactions (which are rather subtle and tend to differ among speakers), I would like to point out a rather robust fact about clausal complements when interacting with focus particles.

Let us look at the construal of certain focus particles with a focused constituent.³

Elements like *sırf* and *sadece*, both meaning 'only', and *bile* 'even' usually show up adjacent to the focused phrase (the first two precede such phrases, while the third follows them). However, less felicitously, particle and focused phrase can also be separated.

Let us first illustrate the phenomenon in a regular, pre-verbal complement clause:

- (1) *Sanık sadece [hakim -in uyuyakal -dığ -ın] -ti*
 accused only judge -GEN fall asleep -Fact.Nom. -3.SG -ACC
farket -ti.
 notice -Past⁴
 'The accused noticed only that the judge had fallen asleep.'

This example is ambiguous; the particle *sadece* can either have the whole adjacent nominalized complement of the matrix verb in its scope, or just the adjacent subject NP of that complement. Under the first reading, all that the accused notices is that *the judge fell asleep*; the judge might be the only person to fall asleep, but the presupposition is that there were all sorts of things going on, yet all that the accused noticed out of all those events was the judge's falling asleep.

Under the second reading, the presupposition is that many people fell asleep; while there might have been other events that took place, we don't

know that. However, we are told that out of all the people who fell asleep, the accused noticed only *the judge*. This second reading can be reinforced if the DP in the focus of the particle is also intonationally focused.

An attempt to place the nominalized complement in post-verbal position results in ungrammaticality under either reading, if the particle still shows up pre-verbally:

- (2) *Sanık (*sadece) farket -ti [hakim -in uyuyakal -dıĝ -in] -t.*
 (Same gloss and translation as in [1].)

The ungrammaticality of (2) is not due to the fact that the nominalized clausal complement is now a PVC; as a matter of fact, such complements, probably due to their DP-status and their overt Case marking (Accusative in our example) can freely scramble around and also show up as PVCs. Instead, this ill-formedness is directly linked to properties of the focus particle.

If the requirement is that focus particles must c-command the focused constituent at PF, the contrast in grammaticality between (1) and (2) would be immediately explained, if we assume that post-verbal constituents are adjoined (to IP or CP), and if we further assume that PVCs are due to a PR-based process, at least in part (cf. note 13); therefore, in (2), the particle would c-command neither the entire nominalized complement nor the subject of that complement.⁵

Turkish also has a rather limited pattern of complementation, borrowed from Persian, an Indo-European language whose syntax has many SVO-properties. The properties of this type of complementation are that the complement clause is fully tensed, the agreement morphology is that found in main clauses, and the complement clause is introduced by the complementizer *ki*:

- (3) *?Sanık sadece farket -ti [ki [hakim uyuyakal -mıŝ]].*
 accused only notice -Past that judge fall asleep -EpPast
 ‘The accused only noticed that the judge had fallen asleep.’

While this example is not perfect, it is nevertheless acceptable; most importantly, it is in clear-cut contrast to the previous example which is completely ungrammatical. The preferred reading here is the one where the particle has the whole complement clause in its scope, i.e. where, among all the goings on in the courtroom, the accused notices only the judge falling asleep. Under very heavy stress on *hakim*, the second reading (where what’s noticed is the *judge’s* falling asleep) is also possible.

There is evidence that such *ki*-clauses are not adjoined to clauses, but rather are base-generated in their surface position. To go into the details of such evidence goes beyond the purposes of this paper. However, let me point out that such an analysis is plausible in any case: Given that these CPs are head-initial, it would make sense that the VPs that they are attached to should be head-initial, too. If so, they would be sisters of the verb, given their status as direct complements. Note also that the status of a clausal complement as sister of V would be uncontroversial for any typical SVO language, when the complement clause is interpreted as a direct object of the matrix verb. Furthermore, notice also that the complement clause introduced by *ki* can't precede the matrix verb, i.e. SOV order with the *ki*-clause as an object is impossible:

- (3)' **Sanık sadece [ki [hakim uyuyakal -muş]] farket -ti.*
 accused only that judge fall asleep -EpPast notice -Past
 Intended reading same as in (3):
 'The accused only noticed that the judge had fallen asleep.'

This further strengthens my claim that for such clauses, SVO order is the only, and thus basic, order, and that the clause is the structural sister of the matrix verb in (3).

As a consequence, the position of such a clause would be lower than any pre-verbal constituent, and thus a *ki*-clause would be c-commanded by any such constituent. The pre-verbal particle in (3), then, would asymmetrically c-command the *ki*-clause itself as well as any constituent contained within that clause. We now have a clear-cut explanation for contrasts like that exhibited by (2) versus (3), under the assumption that scrambled *ki*-less nominalized post-verbal clauses (and scrambled post-verbal constituents in general) are, indeed, adjoined to IP or CP, and are thus higher than any pre-verbal constituent, as opposed to base-generated post-verbal *ki*-clauses, which are lower than pre-verbal constituents.⁶

If scrambled PVCs are higher than bona-fide base-generated post-verbal complements, they can't have been base-generated as complements – which they would have to have been under Kayne's approach where, roughly speaking, SVO is universal and thus where a postverbal direct object is lower than pre-verbal constituents, as the embedded clause in the Indo-European type of complementation example indeed is.

Note also the following example, where the focus particle itself shows up as a PVC:

- (4) *Sanık [hakim -in uyuyakal -dığı -in] -ı farket -ti sadece.*
(Same gloss and translation as in [1].)

Here, under neutral intonation, the particle has scope over the embedded clause—just like its unmarked counterpart where the particle precedes the complement clause: out of all the events to be noticed, the only one that the accused has noticed is that the judge fell asleep. The example is perfectly well-formed, again in strong contrast with the ungrammatical (2), where the nominalized clause is a PVC and the particle is pre-verbal.

It is difficult to imagine a plausible derivation under which (4), with its properties just discussed, is derived under an analysis which is exclusively based on leftward movement. Presumably, the focus particle and the direct object clause would be base-generated adjacent to each other, as the verb's complement. The clause would then move upwards and leftwards, leaving the particle behind. The particle would be lower than the clause – but the facts show that it is higher.

There might be ways to accomplish the needed configurations under a leftward-movement approach, involving the verb. However, a good deal of the appeal of Kayne's Linear Corespondence Axiom is based on its conceptual elegance, and convoluted, ill-motivated, baroque derivations would seriously detract from it.

As a matter of fact, there is some compelling evidence showing that a Kayne-ian approach does offer interesting insights into certain aspects of a (superficially) head-final syntax in Turkic languages (cf. Kornfilt 2000 and 2005). I would like to suggest that certain movements with information-structural motivation lie outside of strict syntax and thus are not constrained in the same way as strictly syntactic movement. Scrambled (as opposed to base-generated) PVCs in Turkish, then, would owe their existence to such extra-syntactic, pragmatically (as well as phonologically, in the sense of sentential intonation) based operations such as rightward movement and adjunction of PVCs to the right edge of IP/CPs.⁷ This is not true, however, for scrambling in the pre-verbal field (which is motivated by information structure, as well).⁸ I now turn to pre-verbal scrambling and argue that this is, in fact, syntactic, driven by feature checking (similarly to other genuinely syntactic movements).

3. Similarities and differences between pre-verbal and post-verbal scrambling

The next question is, then, whether adjunction to the right edge of IP/CP is similar to leftward movement (whether to adjoined or designated positions), and how pre-verbal versus post-verbal constituents are positioned with respect to each other. This is not a trivial or self-evident issue; within a certain type of formal investigation of Turkish syntax, the claim has been made that the informational status of a constituent – i.e. whether it is a topic, a focused constituent, or a backgrounded constituent (the latter usually equated with PVCs) – does not correspond to distinct positions, but that there are “clause-external” areas, both pre- and post-clausal, which may admit constituents with certain informational requirements. Thus, under such a view, whether a constituent is at the left-edge of a clause (and thus precedes the subject) or at the right edge (following the verb) does not matter – neither informationally (with some exceptions, i.e. “new” information), nor positionally; it is a topic in either instance. Kılıçaslan (1998) is one such study where an analysis along these lines is proposed.

However, even with the caveat about newness, this cannot be so. The constituent(s) at the left edge seem(s) to be positioned in a privileged position (or a privileged area of positions). While some of the relevant observations are familiar from previous work (e.g. Kural 1994, 1997; Kornfilt 1998), some are new and establish both a dialect split and a challenge to one of Kural’s proposals.

It is fairly well-known that topicalized quantifier phrases at the left edge of CPs in Turkish (i.e. quantifier phrases preceding a clause-initial subject) take wide-scope over other pre-verbal quantifier phrases:

- (5) *Üç kişi -ye_i herkes t_i kitap -lar -ın -ı*
 three person -DAT everybody book -PL -3.SG -ACC
ithaf et -miş
 dedicate -EpPast
 ‘Everybody dedicated his/her books to three people.’⁹

While slightly ambiguous, the reading under which the (leftward-scrambled) indirect object has wide scope over the subject is overwhelmingly strong. Why can’t the subject quantifier phrase raise at LF, taking the indirect object into its scope, and thus lead to a more balanced ambiguity?

Kural (1997) proposes a principle of “Scope Preservation” which would explain this fact:

“If QP1 c-commands QP2 at S-Structure, it also c-commands QPs at LF.”
(Kural 1997: 508.)

As an aside, note that this principle, if valid, has to be restricted to neutral intonation; when a QP receives focus intonation, it receives wider relative scope:

- (6) *Üç kişi -ye_i HERKES t_i kitap -lar -ın -ı*
 three person -DAT everybody book -PL -3.SG -ACC
ithaf et -miş
 dedicate -EpPast
 ‘EVERYBODY dedicated his/her books to three people.’

Here, when the subject receives stress, the reading for the indirect (dative) object QP as having narrow scope with respect to the subject QP becomes much stronger.¹⁰

Similar observations can be made when the subject QP is itself clause-initial, i.e. at the left edge of the CP:

- (7) *Herkes üç kişi -ye kitap -lar -ın -ı*
 everybody three person -DAT book -PL -3.SG -ACC
ithaf et -miş
 dedicate -EpPast
 ‘Everybody dedicated his/her books to three people.’

Here, the subject QP has wider scope than the indirect object QP.

Concerning A-binding of anaphors, topicalized anaphors are either judged to be ill-formed altogether, or else to be borderline, as the following examples illustrate:

- (8) *Ahmet_i her akşam kendin -e_i bir içki hazırla -r*
 Ahmet every evening self -DAT a drink prepare -AOR
 ‘Ahmet prepares every evening a drink for himself.’

Here, we have a well-formed anaphoric indirect object which is c-commanded by its antecedent, the subject, and is thus properly A-bound.

(9) ??/**Kendin* *-e_i* *Ahmet_i* *her* *akşam* *t_i* *bir içki* *hazırla* *-r*
 self -DAT Ahmet every evening a drink prepare -AOR

(10) ??/**Kendin* *-e_i* *her* *akşam* *t_i* *Ahmet_i* *bir içki* *hazırla* *-r*
 self -DAT every evening Ahmet a drink prepare -AOR

The ungrammaticality of (9) and (10) can be explained straightforwardly if we assume that the anaphors have undergone A-scrambling, thus resulting in a Condition C-violation, with the scrambled reflexive expression A-binding the R-expression. That this explanation is on the right track is shown by the fact that when the reflexive is part of a larger A-scrambled phrase in corresponding examples, the result is considerably better:

(9)' ?[*Kendi_i* *komşu* *-sun* *-a*]_j *Ahmet_i* *her* *akşam* *t_j*
 self neighbor -3.SG -DAT Ahmet every evening
bir içki *hazırla* *-r*
 a drink prepare -AOR
 'To his_i own_i neighbor, Ahmet_i prepares a drink every evening',¹¹

So far, it appears that with respect to topicalization, the position of the topic at Spell-Out determines both quantifier scope and A-binding facts.

What about two topics, both of which are QPs?¹²

There, too, the sequential (and thus, we assume, the hierarchical) positions at Spell-Out determine the readings:

(11) *Üç kişi* *-ye* *her* *kitap* *-tan* *Ayşe* *sözet* *-miş*
 3 person -DAT each book -ABL Ayşe mention -EpPast
 'Ayşe mentioned every book to three people.'

Here, the leftmost QP, i.e. the numeric dative object, has wide scope over the ablative object under the preferred reading.

(12) *Her* *kitap* *-tan* *üç kişi* *-ye* *Ayşe* *sözet* *-miş*
 each book -ABL 3 person -DAT Ayşe mention -EpPast

Here, the ablative object has wide scope over the numeric dative object under the preferred reading.

These facts strongly suggest that the first topic asymmetrically c-commands the second one.

These observations contrast with those made concerning PVCs, showing that the positions are presumably not mirror-image with respect to the pre-verbal, or even “pre-clausal” field.

(13) *Ayşe sözlet -miş üç kişi -ye her kitap -tan*
 Ayşe mention -EpPast 3 person -DAT each book -ABL

(14) *Ayşe sözlet -miş her kitap -tan üç kişi -ye*
 Ayşe mention -EpPast each book -ABL 3 person -DAT

Here, speakers differ as to whether they assign wide or narrow scope to the individual QPs. Some speakers assign wide scope, and some assign narrow scope to the number QP with respect to the ablative QP. What is remarkable, however, is that the placement of the QP does not matter for the individual speaker with respect to post-verbal QPs; in the pair above, any given speaker for whom the numeric QP has wide scope in (13) has also wide scope in (14); any speaker for whom the same QP has narrow scope in (13) also has narrow scope in (14). I shall attempt an explanation for these judgements below.

Other pairs were presented to native speakers, too, with similar results:

(15) *Bu yıl kitap -lar -ın -ı ithaf et -miş*
 this year book -PL -3.SG -ACC dedicate -EpPast
üç kişi -ye herkes
 3 person -DAT everybody

(16) *Bu yıl kitap -lar -ın -ı ithaf et -miş*
 this year book -PL -3.SG -ACC dedicate -EpPast
herkes üç kişi -ye
 everybody 3 person -DAT

Here, too, the numeric QP had either wide or narrow scope with respect to the subject QP, but for any given speaker, the scope was the same for the two PVCs, irrespective of the order.

What can explain these facts?

I would like to propose that at Spell-Out, there is no hierarchical structure among the PVCs; even if rightward movement and resulting multiple adjunction to CP appear to create a hierarchical post-verbal structure, there

is a process of linearization which turns the postverbal field into a non-hierarchical string of constituents.¹³ Intonational facts bear this out, too: After the intonational peak on either a pre-verbal focused constituent or on the verb itself, the intonation drops immediately; all the PVCs have low pitch, irrespective of their order. In the pre-verbal field, the topic is/are individualized via (an) intonational break(s), and as mentioned earlier, the focused constituent has a high pitch. As we see, intonation does distinguish the topic field from the PVC field in this fashion.

Thus, PVC QPs c-command each other, making any order among them irrelevant with respect to c-command and scope. I now make the assumption that for each speaker, there is a favored position for reconstructing a PVC into: either the original position, or a topicalized position. Depending on this choice, the PVC has either narrow or wide scope with respect to any other PVC. But once this choice is made, the result is the same, irrespective of the overt order of the PVCs on the surface. (This means that the results of PR-processes are able to reconstruct – both with respect to scope and anaphoric relations, the latter illustrated below. This is in accordance with Chomsky 2001: 23–24, where certain displacement phenomena are treated as PR-operations, and where it is stated that traces, while inaccessible to Move, are accessible to other operations, such as LF-interpretive ones.)

Thus, we see that while the order of constituents in the pre-verbal field is crucial for scope relations, the surface order of the PVCs among each other is irrelevant for those same relations.

Note that Kural (1997), too, proposes reconstruction for PVCs, but he reports that for him, PVCs have very strongly preferred wide-scope readings – both with respect to pre-verbal QPs (which I shall turn to in a moment) and with respect to the rightmost QP and a QP preceding it (and which is also a PVC). This doesn't correspond to my own judgments, nor to those of my informants; there seems to be a dialect split in this regard.

What about anaphoric PVCs?

Those reconstruct even more clearly (compare with (8)):

(17) *Her akşam bir içki hazırla -r Ahmet_i kendin -e_i*
 every evening a drink prepare -AOR Ahmet self -DAT

(18) *Her akşam bir içki hazırla -r kendin -e_i Ahmet_i*
 every evening a drink prepare -AOR self -DAT Ahmet

(19) *Her akşam Ahmet_i bir içki hazırla -r kendin -e_i*
 every evening Ahmet a drink prepare -AOR self -DAT

- (20) *Her akşam kendin -e; bir içki hazırla -r Ahmet;*
 every evening self -DAT a drink prepare -AOR Ahmet

Here, too, we see that:

1. the order between antecedent and reflexive does not matter in the post-verbal field;
2. the pre-verbal antecedent does successfully bind the anaphoric PVC, even though it doesn't c-command it at Spell-Out (if the earlier proposals made here are correct);
3. the post-verbal antecedent successfully binds the pre-verbal anaphor.

All three points are easily explained if PVCs reconstruct into their base positions. (Note that, in contrast with – specific – quantified PVCs, we have to assume that reconstruction into a topicalized position is not possible for anaphoric PVCs, given the ill-formedness of topicalized anaphors as seen earlier; in other words, it looks like anaphoric PVCs can only reconstruct in their base positions. Under minimalist assumptions, this is not problematic, if an anaphoric feature precludes a topic feature, thus making it impossible for an anaphor to move to any topic position in order to check topic features.) Pre-verbally scrambled constituents, then, depend on their positions at Spell-Out for well-formedness and interpretation, while PVCs don't. Also, from the point of view of both features and information structure, pre-verbally scrambled constituents move to (a) topic position(s) to check off a topic feature, while PVCs don't move to any distinct position; they are simply backgrounded and thus have no particular feature to check. This is not a syntactic movement type and is therefore not driven by feature-checking considerations (but see note 13).

Is the PVC field (with its constituents that are sequentially linearized with respect to each other) higher or lower with respect to the topic field?

Kural (1997), for whom the PVC field *is* hierarchical, claims that the post-verbal field is indeed higher than the topic field, as mentioned earlier. His claims are in accordance with his judgments; for him, post-verbal QPs have wider scope than pre-verbal QPs. My own judgments and those of my informants bear this out only in part. When a PVC QP is a subject, it indeed tends to have wide scope over a pre-verbal QP:

- (21) *Üç kişi -ye dün akşam yardım et -miş herkes*
 3 person -DAT yesterday evening help do -EpPast everybody
 'Yesterday evening, everybody helped three people'

But if the PVC is a non-subject, it tends to have narrow scope with respect to a pre-verbal QP subject or topic:

- (22) *Herkes bu yıl kitap-lar -ın -ı ithaf et -miş*
 everybody this year book -PL -3.SG. -ACC dedicate -Ep.Past
üç kişi -ye
 3 person -DAT
 ‘Everybody dedicated his books to three people this year.’

Here, the numeric QP in post-verbal position has narrow scope with respect to the pre-verbal subject QP for me and for my informants.

- (23) *Üç kişi dün akşam yardım et -miş herkes -e*
 3 person yesterday evening help do -EpPast everybody -DAT
 ‘Three people helped everybody yesterday evening’

Here, the numeric QP which is a subject has wide scope over the post-verbal dative QP.

Kural’s judgments are taken by him to argue that PVCs are always higher than pre-verbal constituents. The facts just reported here don’t damage this contention, but they do weaken it. If PVC QPs reconstruct, and if they can reconstruct not only into their original positions but also into some topic position, then the position of such PVCs could also be in a lower position at Spell-Out than pre-verbal constituents. This would bring the discussion back to the issue of a Kayne-type derivation for PVCs.

However, the first part of this paper argued that scrambled PVCs are indeed higher at Spell-Out than a post-verbal base-generated complement would be; it also showed that scrambled PVCs are higher than pre-verbal VP-internal constituents. Thus, we could agree that scrambled PVCs might be high enough for these effects, but that they are low enough to be c-commanded by pre-verbal, clause-initial subjects and by topics. Whether this means that in such instances the clause-initial subject with wide scope is itself a topic is left to future research, although these facts (for the dialect reported here) are suggestive.

All the data reported here are captured by the assumptions that have been put forward, including the following ones:

1. Rightward scrambling (i.e. “extraposition”) is always reconstructed (with the exception of focused constituents, which don’t reconstruct, as we saw earlier); tensed *ki*-clauses are base-generated post-verbally and hence the issue of reconstruction doesn’t come up;

2. The position of reconstruction for a scrambled PVC is either its base position:
 - a. ... t_i V XP_i (with t_i as its reconstruction site)
or a position derived by pre-verbal scrambling as an intermediate step, before post-verbal scrambling takes place:
 - b. ... t_i' ... t_i V XP_i (with t_i' as the reconstruction site)

Note also that the analysis for Turkish scrambling proposed here is in variance with the approach towards “optional” movement taken in Fukui (1993), where it is proposed that in Japanese (as a representative of a head-final language) “leftward movement of an object need not have any driving force and can be optional, whereas rightward movement [across the verb: JK] does need some grammatical factor that makes it forced (or obligatory)” (Fukui 1993: 402). In this paper, I have proposed that at least in Turkish, another head-final language, leftward movement is syntactic, i.e. feature-driven, while rightward movement is not feature-driven and not syntactic in a strict sense, but rather a process of the PF-component (or else is syntactic, possibly driven by a feature based on “discourse-givenness” or presupposition, but with a PF-based process of sequential linearization, obliterating structural hierarchy and thus yielding an output which is syntactically and intonationally distinct from the pre-verbal topic field).¹⁴

Notes

1. This contribution is intended to be a squib-like brief article, focusing on novel observations, rather than a full-fledged study. I thank Joachim Sabel for inviting me to contribute as well as for his patience and trust. I am further indebted to him for extensive and very helpful comments on an earlier version of this paper. I further thank Josef Bayer and Shigeru Miyagawa for discussions on various aspects of these remarks. A debt of gratitude has to be expressed to my (co-) native speakers who shared their time and intuitions with me: Çiğdem Balım, Akgül Baylav, Cem Mansur, Alp Otman, Bengisu Rona, Mehmet Yanılmaz, Ayşe Yazgan. Takano (2005), where a very different approach to some similar data is proposed, came to my attention at the proof-reading stage of the present paper and could therefore not be addressed properly here. Any mistakes, shortcomings and oversights are my responsibility.

2. I use the term of “extraposition” for the sake of simplicity and ease of reference to general syntactic literature. Turkish PVCs are actually not well-served by this term, as their occurrence is independent from considerations of length, heaviness and the like – factors which play a central role in typical “extraposed” constituents in well-studied SVO-languages.
3. For a thorough and inspiring study of such phenomena in a cross-linguistic perspective, see Bayer (1996).
4. Most glosses are self-explanatory. The following ones might require explanation: *Fact.Nom*: ‘Factive Nominalization’; *EpPast*: ‘Epistemic Past’; *AOR*: ‘Aorist’.
5. These facts can be insightfully accommodated by the account of focus constructions in Kayne (1998). There, the assumption is made that *only* is the head of a Focus Phrase. The focused constituent moves into the specifier of the Focus Phrase, yielding the order *XP – only*. *Only* then undergoes head-movement to a higher functional head, yielding the order *only – XP*. This last movement might look ill-motivated in a head-final language like Turkish; however, it clearly captures the facts, because the order *only – (...) XP* is itself unusual in such a language, yet this is the one found. Note also that this last (head-) movement is motivated by the assumption just mentioned in the text, namely that the c-command requirement must hold at all stages of the derivation. As will become clear later on, I do differ from Kayne, however, in allowing rightward movement; however, such movement might well be limited to PF-processes, thus not challenging a Kayneian model, where the only allowable movement is leftward. Instead, we could assume that the genuinely syntactic component is indeed restricted to leftward movements only, while the PF-module can allow rightward movement. Focus construal plausibly applies at PF, as it interacts with intonation.
6. Note also that we have to keep reconstruction of the post-verbal nominalized clause from interacting with focus construal – hence the restriction of the c-command requirement to PF. This is plausible, given that PVCs can’t be focused in general.
7. Note also that while observations and judgments such as those reported in Kural (1994) and (1997) might establish that PVCs are higher than pre-verbal constituents, they do not really establish that superficially head-final order is necessarily base-generated – one of the points that Kural strives to make. Note further that the approach just sketched in the text, i.e. to characterize pre-verbal scrambling differently from post-verbal scrambling is also in conformity with the general approach in Miyagawa (2002), where pre-verbal scrambling is viewed as motivated by the EPP; obviously, post-verbal scrambling could not possibly be motivated in this way (but for a different interpretation of Miyagawa’s approach, see Takano 2005).
8. I agree with Kural (1997) that the information-structural considerations in Turkish topicalization, which triggers pre-verbal scrambling, versus “backgrounding”, which is the main function of post-verbal scrambling, are different.

Topicalization can introduce new (sentence) topics in sentence after sentence, while the background is typically the same within entire stretches of discourse. Thus, it makes intuitive sense to have topicalization be triggered by checking of a topicalization feature, as a process of sentence grammar, while backgrounding takes place with respect to presupposed material, with the latter realized via two PR-processes (not motivated by feature checking): postverbal scrambling (which does not, as I shall argue, result in a genuinely syntactic hierarchical structure), and intonational drop with a flat intonational contour post-verbally.

9. Frey (2004) shows that quantified phrases can't be topics in German. Frey, as well as Grewendorf (this volume) argue for a distinct *syntactic* topic position in German; a similar position is taken by Otsuka (this volume) with respect to Tongan. Does the possibility of topicalized QPs in Turkish, as in (5), argue that topics are not in a distinct syntactic position in this language? Not necessarily. In Kornfilt (2003), I argue that "relativization" in Turkish, i.e. movement of a relativization operator, applies to the output of topicalization, thus making topicalization into a genuine syntactic process, targeting a syntactic position. I would now like to suggest that the difference between languages like German and Turkish with respect to topics is not that German has a topic position and Turkish doesn't, but rather that German can't move *any* QP to that position, while Turkish can do so, but generally only if the QP is specific. This also explains the lack of a balanced ambiguity in (5); the reading with the subject QP having a wider scope than the scrambled dative QP is not due to an inability of the subject QP to raise at LF, and probably not to Kural's "Scope Preservation" principle stated later in the text, but to the inability of a non-specific QP (or a non-specific NP/DP, for that matter) to topicalize in the first place. For such a reading, one would need the unscrambled version of (5).
10. A similar effect is observed in German under similar intonational conditions. I can't pursue the intriguing nature of the interface between intonation and scope in this short paper, and I leave this issue for further research.
11. Similarly to the previous discussion concerning relative scope of QPs, these examples get better when the subject bears focus intonation.
12. Kural (1997) claims that there can be only one topic – the single constituent which is in absolute initial position. Other constituents which are between such a topic and the subject are supposed to have been scrambled leftward, but without any discourse-based motivation. I think that multiple topics are possible, and I therefore refer to such constituents which precede the subject but which are not at the leftmost edge as topics, as well. However, this issue is tangential to our present concerns, and I won't pursue it.
13. This is reminiscent of Chomsky (1986), where it is suggested that extraposition in English may be a PF-rule, because it does not interact with LF-processes, it has no effect on binding and on extraction (cf. Chomsky 1986: 40–41). Sabel (1996) argues in favor of a similar view of extraposition. I have said earlier

that Turkish (scrambled) PVCs are not extraposed in the same sense as extraposed constituents in languages such as English and German, as heaviness is irrelevant. Nonetheless, the process responsible for Turkish PVCs might well be a similar process; in Kornfilt (2004), I have characterized this process as a PF-process, based on gapping and RNR-phenomena. (I thus differ from Kornfilt 1998, where I characterized post-verbal scrambling as regular, syntactic movement, largely based on its island-sensitivity. Such an approach to Japanese PVCs is also found in Whitman 2000. The two approaches could be reconciled, if post-verbal scrambling *is* syntactic movement, but if the subsequent linearization of the post-verbal domain into a non-hierarchical sequence is a PF-process. However, if this is the case, then rightward movement would exist in the syntax, against Kayneian assumptions.) It is suggestive, too, that the heaviest PVCs, i.e. full (nominalized, *ki*-less) clauses, don't reconstruct (as shown earlier in the discussion of focus particles), at least with respect to processes such as scope and locality with respect to such particles.

14. Mahajan (1997) argues against rightward scrambling as a PF-based process, based on PVCs in Hindi. However, Hindi PVCs have properties very different from Turkish PVCs, for which a PF-based analysis is very plausible, as shown here.

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EPP and semantically vacuous scrambling

Shigeru Miyagawa

1. Saito's discovery

It is widely believed that scrambling in Japanese results from a purely optional movement operation (e.g., Fukui 1993; Kuroda 1988; Saito 1989, 2004; Saito and Fukui 1998). On this view, the operation responsible for scrambling applies completely freely without any need to motivate it. Consequently there is no formal feature that triggers the movement. The evidence typically invoked to justify this view of scrambling is found in Saito (1989). Introducing what has become one of the most recognizable pieces of data in the study of Japanese, Saito argued that scrambling is “semantically vacuous.” The data is given below.

- (1) a. *John-ga* [_{WH-*ISD*} *Taroo-ga nani-o katta ka*] *siritagatteiru*.
John-NOM Taro-NOM what-ACC bought Q want-to-know
'John wants to know what Taro bought.'
- b. ?*Nani-o_i John-ga* [_{WH-*ISD*} *Taroo-ga t_i katta ka*]
what-ACC_i John-NOM Taro-NOM bought Q
siritagatteiru.
want-to-know

(1a) is a declarative sentence that contains an indirect question. The crucial example is (1b). In this example the wh-phrase, *nani* 'what', which originates inside the indirect question, has been scrambled to the head of the matrix clause. This is not a direct question; it is still a declarative sentence, hence it cannot license a wh-phrase. Consequently, the wh-phrase must be interpreted inside the indirect question despite its surface position outside it. To do so, the wh-phrase undergoes what Saito calls “radical reconstruction” back into the indirect question. The defining trait of radical reconstruction is that it does not leave a trace. It is as if the scrambling movement never took place. The only way that this scrambling can be “completely undone” as just described is if scrambling is semantically

vacuous, so that the original movement has no semantic import, and undoing it at LF likewise has no semantic consequence. Therefore it is a purely optional movement. This characterization of scrambling based on the data in (1) is widely accepted by those who have studied scrambling in Japanese.

In this article I will first summarize a recent work by Saito (2004) in which he recasts the argument in Saito (1989) in terms of the minimalist program. He points out that data and analysis in Saito (1989) lead to a particular characterization of scrambling within the recent minimalist program:

- (2) *Minimalist version of Saito's (1989) argument* (Saito 2004)
Scrambling in Japanese is not driven by the EPP.¹

This is the minimalist version of an optional and “semantically vacuous” operation. The question is, does such an operation exist in Universal Grammar? In the second part of the article, I will discuss some difficulties that arise with Saito’s observation. I will show that Saito’s arguments do not necessarily lead to the conclusion he draws. Also, drawing from works by Lebeaux (1988) and Fox (2000), I will show, following Nishigauchi (2002), that reconstruction possibilities in English and Japanese do not coincide with Saito’s predictions. I will also comment on some of the additional facts given by Saito (2004) for radical reconstruction, and show that they have other explanations. Separate from these issues, I will discuss precisely what Saito’s observation tells us about Japanese and English. There, I will show that the data has nothing to do with semantic vacuity. Rather, it points to a fundamental difference between Japanese and English with regard to wh-islands. Specifically, I will show that his observation, with some natural extensions, favors the Watanabe-type approach (1992) or Tsai’s (1994) approach to wh-questions in Japanese over the classic approach in Huang (1982) and Lasnik and Saito (1984). We will also see that a version of Kuroda’s (1988) “no forced agreement” holds in Japanese; in particular we will see that in instances when a feature on a Head agrees with some element, the specifier of this Head can nevertheless host some other element. Kuroda’s (1988) observation, looked at in this light, shows that Japanese does not have (or does not require) Spec-Head agreement. The phenomenon we will see in Japanese is, in fact, a familiar one: it is “long-distance agreement” found in the expletive construction in languages such as English, in which the phi features on T agree with the features of the postverbal nominal, but what occurs in the Spec of TP is the expletive

there. Finally, given that there is ample evidence against radical reconstruction, we wish to know whether there is, in fact, radical reconstruction. Another way to ask this is, is there scrambling at PF, assuming the traditional inverse T model (cf. Saito (1994), Sauerland and Elbourne (2002) among others)? This is because radical reconstruction is an instance in which the head of the chain is pronounced while the tail of the chain is interpreted. The movement has PF consequence but not LF consequence. What we will see is that, quite surprisingly, in an extremely narrow band of data, there does appear to be such PF scrambling. Saito's original discovery is, thus, upheld. However, unlike Saito's (1989) original conception, and also a more recent version by Sauerland and Elbourne (2002), PF scrambling is limited to those cases in which a quantifier is moved in violation of the universal condition on optional movement. The condition relevant here comes from Fox's (2000) work – that optional movement is motivated only if it has an effect on the output (cf. also Chomsky 2001, Reinhart 1995). I will show that Fox's theory of movement provides a way to precisely characterize the conditions under which radical reconstruction occurs. As we will see, radical reconstruction occurs when the movement is not motivated due to the fact that it cannot have any semantic effect. In this way, Saito was correct in drawing a correlation between radical reconstruction and semantic vacuity. Where we depart from his analysis is in the idea that not all instances of long-distance scrambling obligatorily undergo radical reconstruction – only those instances in which a quantifier is moved illicitly.

2. Optional movement and the EPP

One of the most fundamental questions about UG is, what triggers movement? In earlier theories, each type of movement has a unique trigger. The need for Case triggers A-movement in passive and raising, while the question feature on C (Q) attracts a wh-phrase. In Chomsky (2000), it is proposed that, while different features come into play for these types of movements, what causes movement is uniform throughout the grammar: it is the EPP. What Chomsky notes is that the EPP must be separated from formal features such as Case and phi. The reason is that in the expletive construction such as *There appeared a boy in the room*, the agreement is between T and the postverbal nominal *a boy*. There is no movement, but rather, the EPP is met by merging the expletive. Hence the EPP is independent of agreement. The EPP was originally proposed in Chomsky (1981) precisely because of

the appearance of the expletive. By stating that the EPP is responsible for all instances of categorical movement, Chomsky attempts to unify all movement as the same operation.

However, we can see immediately that not all “EPP-driven” movements are the same. Along with the “classic” EPP movement that moves the thematic subject to the Spec of TP, *wh*-movement and Object Shift also fall under this category of EPP-triggered movement. This means that the three heads, T, C, and *v*, are all associated with the EPP. There is, however, a difference between the movement of the subject to the Spec of TP and, for example, Object Shift to *v*. The EPP on T is assumed to be universal and it is universally strong (Chomsky 1995, Alexiadou and Anagnostopoulou 1998). This means that the satisfaction of the EPP on T is obligatory. Setting aside the expletive construction, this means that the movement responsible for displacement of the thematic subject to the Spec of TP is *obligatory*. However, Object Shift (OS) in Germanic is not obligatory. The object moves to a position outside the VP by OS only in certain cases; in other cases it stays in its original position. The EPP is therefore *optionally* on *v*. When it appears, OS is triggered; if not, the object stays in situ.

What is the difference between the obligatory EPP on T and optional EPP on *v*? Reinhart (1995) and particularly Fox (2000) propose a theory of optional operation which imposes a requirement on the movement as follows. Fox specifically addresses instances in which QR may apply optionally.

(3) *Scope Economy*

A Scope Shifting Operation can move XP_1 from a position in which it is interpretable only if the movement crosses XP_2 and $\langle XP_1, XP_2 \rangle$ is not scopally commutative. (Fox 2000: 26)

Simply put, an optional operation must have some effect on the output, such as making possible a new scope relationship.

Chomsky (2001) applies this notion of requiring some effect on the output to optional movements such as OS. The argument works as follows. OS is known to have an effect on semantic interpretation – the shifted object is associated with properties such as new information, specificity/definiteness, focus, and so forth (Holmberg 1986). Chomsky bundles all of these informational-structure properties under the label of “interpretive complex” INT. He then suggests that non-OS languages such as English are able to assign INT without moving the object, but OS languages have the property that INT is associated with the Spec of vP , that is, the position to which OS

moves the object. This movement is triggered by the EPP, which means that the EPP is assigned to v only when there is OS.

- (4) a. v^* is assigned an EPP feature only if that has an effect on outcome.
 b. The EPP position of v^* is assigned INT.

OS in Germanic thus has an effect; it associates the object with INT. This forms the basis for the characterization of optional movement such as OS as EPP driven.

- (5) Optional operations can apply only if they have an effect on outcome...
 (Chomsky 2001: 34)

In languages such as English INT can be assigned to the object without movement, hence moving the object under OS would not have an effect on the outcome. The optional movement of OS in English therefore would not be licensed, hence English does not have OS. With this much in the background for optional movement, I now turn to Saito's (1989, 2004) argument.

3. Saito (2004) on Saito (1989)

The central assumption that Saito (1989) adopts is that movement operations are subject to the Proper Binding Condition (PBC).

- (6) Traces must be bound. (Fiengo 1977, May 1977)

As an illustration of the PBC, note the examples below.

- (7) a. ??*Who_i do you wonder [which picture of t_i]_j John likes t_j ?*
 b. **[Which picture of t_i]_j do you wonder who_i John likes t_j ?*

(7a) is somewhat marginal because of a mild wh-island violation, but (7b) is complete gibberish. In (7b) the trace of *who* (t_i) is unbound in violation of the PBC. There is no unbound trace in (7a). If reconstruction is possible here, the raised wh-phrase, [*which picture of t*]_j, could reconstruct to its original position where the trace inside would be properly bound by *who* in the Spec of subordinate CP. The fact that the sentence is ungrammatical indicates, according to Saito, that there is no reconstruction.

Another relevant contrast is found in Riemsdijk and Williams (1981).

- (8) a. *Who_i t_i knows [which picture of whom]_j Bill bought t_j?*
 b. ?? *[Which picture of whom]_j do you wonder who_i t_i bought t_j?*

Riemsdijk and Williams note that in (8a) it is possible to have a pair-list question that pairs the matrix *who* and *whom* inside the picture noun. Thus this question can be answered with *Mary knows which picture of Henry Bill bought*, *Sally knows which picture of John Bill bought*, ... It is assumed that the pair-list interpretation is made possible by *whom* raising to the matrix *who* to form an “absorption” structure (e.g., Higginbotham and May 1981). However, it is not possible to have a similar pair-list question in (8b) pairing the embedded *who* and *whom* in the picture noun. This example in (8b), like (7b), leads Saito to the conclusion that, universally, there is no such a thing as reconstruction as an LF operation that lowers an element that had been raised at overt syntax. Specifically, it is not possible for *which picture of whom* to reconstruct to its original position (t_j). If this reconstruction were possible, we would expect the pair list to obtain – the picture noun reconstructs in its entirety to its original position marked by t_j – the original position of the picture noun – followed by *whom* raising to *who*. The fact that this reconstruction is not possible is taken as evidence that reconstruction in general does not occur because it would be a violation of the PBC. Lowering operations leave a trace which would be unbound.

But what about the well-known cases of reconstruction such as the following (cf. Engdahl 1986)?

- (9) *[Which picture of himself]_i did John like t_j?*

Saito (1989) suggests that these types of binding are due not to reconstruction but to “chain binding” as proposed by Barss (1984). Chain binding only requires that the antecedent of the anaphor c-command the trace of the anaphor or the phrase that contains the anaphor. In (9) the antecedent *John* c-commands the trace, t_j , which is left by the container of the anaphor (*which picture of himself*). Hence any instance of “reconstruction” is viewed as a case of chain binding.

We are now ready to look at Saito’s core argument; the examples are repeated below.

- (10) a. *John-ga* [_{WH-*ISD*} *Taroo-ga nani-o katta ka*]
 John-NOM Taro-NOM what-ACC bought Q
siritagatteiru.
 want-to-know
 ‘John wants to know what Taro bought.’
- b. ?*Nani-o_i John-ga* [_{WH-*ISD*} *Taroo-ga t_i katta ka*]
 what-ACC John-NOM Taro-NOM bought Q
siritagatteiru.
 want-to-know

(10a) is the non-scrambled version; it is an indirect question contained in a declarative matrix clause. The indirect question has the wh-phrase *nani* ‘what’, which is in situ at overt syntax. This wh-phrase is associated with the subordinate C in a way to satisfy the indirect wh-question. (10b) is the crucial example. This example is constructed by scrambling the wh-phrase *nani* from within the indirect question to the matrix clause. The sentence means the same as (a); that is, it is still a matrix declarative sentence that contains an indirect question. It is not a root question. As Saito points out, the scrambled *nani* must be interpreted inside the embedded indirect question for it to be appropriately licensed by the wh C. *Nani* therefore must undergo reconstruction to the embedded clause. However, the PBC prohibits reconstruction because the lowering of *nani* would leave an unbound trace. Nevertheless Saito assumes that *nani* is put back into the indirection question. He argues that *nani* undergoes “radical reconstruction,” by which he means that the trace left by the lowering operation is wiped out, thereby avoiding a PBC violation. The scrambling is literally “undone” as if it did not take place. This operation, which later was named “radical reconstruction,” is possible for scrambling because the operation is semantically vacuous, hence undoing it at LF has no semantic consequence. This contrasts, for example, with English wh-movement, in which a wh-phrase raises to the Spec of CP to take scope, so that the movement has semantic content. This is why overt wh-movement does not undergo radical reconstruction.

Let us reflect now on what we have just seen with (10b). First, this scrambling of the wh-phrase from inside the indirect question to the matrix clause is clearly optional. It cannot be obligatory because we have the “normal” word order in (10a). Second, this movement is, according to Saito, semantically vacuous. As Saito (2004) points out, if we recast these two properties – optionality and semantic vacuity – within the minimalist assumptions outlined earlier, we reach the following conclusion.

(11) Scrambling is not EPP driven. (Saito 2004)

This is because an EPP driven optional movement must “have an effect on outcome.” If scrambling can undergo radical reconstruction, it means that scrambling has not had any effect on the outcome simply because the moved category can literally be put back without a trace. If this is correct, the widely held view that scrambling is a purely optional movement without any need for motivation any triggering feature is upheld. According to this view, the EPP, which would be the natural choice – in fact the only choice – to drive movement, apparently does not hold in the case of scrambling in Japanese, at least for long-distance scrambling. So, Saito’s argument, interpreted within the minimalist program in Saito (2004), makes a clear and specific proposal about scrambling. The question is, do we find in UG movement operations that are not triggered by the EPP or some equivalent formal feature? In the next section we turn to arguments against Saito’s analysis of (10b). The arguments we will give do not by themselves show that there is no movement in UG that is not driven by the EPP. If successful, however, our arguments at least cast serious doubt on Saito’s argument for a non-EPP movement based on his data.²

4. Counterarguments

In this section I will give several types of arguments for viewing scrambling as EPP driven. I will first summarize the argument I gave (Miyagawa 2001, 2003) for showing that T in Japanese is associated with the EPP; it can be met by moving the subject, or some other entity such as the object. The latter option is what has been called “scrambling” within a clause. Then, I will directly address the arguments in Saito (1989).

4.1. Evidence for the EPP on T: Miyagawa (2001)

In contrast to what we just observed, I have argued that scrambling in Japanese is EPP-driven (Miyagawa 2001, 2003a). This argument is based on the interpretation of universal *zen’in* ‘all’ relative to negation. First, note that *zen’in* in object position may be interpreted inside the scope of sentential negation.

- (12) *Taroo-ga zen'in-no-syasin-o mi-nakat-ta.*
 Taro-NOM all-GEN-photo-ACC see-NEG-PAST
 'Taro didn't see everyone's photos.'
 not > all, all > not³

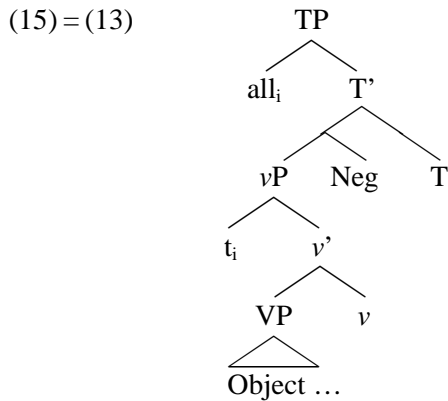
If we place *zen'in* in the subject position the preferred reading is that it is interpreted outside the scope of negation (Kato 1988).

- (13) *Zen'in-no-gakusei-ga san-satu-no hon-o yoma-nakat-ta.*
 all-GEN-student-NOM three-GEN book-ACC read-NEG-PAST
 'Every student did not read three book.'
 *not > all, all > not

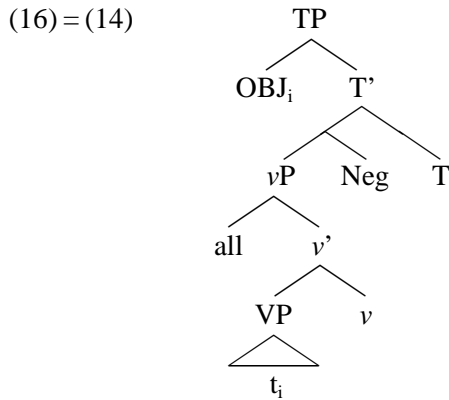
However if the object is scrambled, a partial negation interpretation becomes possible (Miyagawa 2001).

- (14) *San-satu-no-hon-o_i zen'in-no-gakusei-ga t_i yoma-nakat-ta.*
 3-CL-book-ACC all-GEN-student-NOM read-NEG-PAST
 not > all, all > not

(13) and (14), taken together, give evidence that the EPP on T exists in Japanese (Miyagawa 2001). In (13), which is SOV, the subject, "all," has moved obligatorily into the Spec of TP. It therefore has moved outside the c-command domain of negation, which is assumed to be located between *v* and T (Laka 1990; Pollock 1989). This A-movement in Japanese does not reconstruct.



In (14), which is OSV, the object has moved to the Spec of TP, thereby satisfying the EPP requirement of T. This allows the subject “all” to stay in situ in the Spec of *v*P, where it is c-commanded by negation.



In either case *something must move to the Spec of TP*, a state of affairs that is expected if T is associated with the EPP. (See Collins 1997 for a similar idea based on the quotative construction in English.) The “all > not” interpretation is also possible because there is a second derivation in which the subject first moves to the Spec of TP for the EPP, and the object then moves to a higher Spec of TP (or CP) by A'-movement. This second movement is not triggered by the EPP on T.

Unlike movement into Spec of TP, the scrambling observed by Saito in (10b) is a long-distance movement that is clearly optional. If this, too, is EPP driven, we must show that it does not undergo radical reconstruction. That is, we must show that there is some effect on the outcome and that this scrambling is not completely undone as if it did not happen. If we can do that, there is a hope that some sort of semantic import can be associated with this movement, in turn making it possible to associate the EPP with the movement.

4.2. Reanalyzing Saito's arguments

I will give two kinds of arguments that cast doubt on Saito's (1989) conclusion. First, I will show that the evidence he gave against reconstruction has other explanations. Second, I will give evidence from Nishigauchi (2002)

that the long-distance scrambling in his data does not undergo radical reconstruction.

As noted earlier, Saito (1989) gave following kinds of arguments against reconstruction.

- (17) a. ?? *Who_i do you wonder [which picture of t_i]_j John likes t_j?*
 b. * *[Which picture of t_i]_j do you wonder who_i John likes t_j?*
- (18) a. *Who_i t_i knows [which picture of whom]_j Bill bought t_j?*
 b. ?? *[Which picture of whom]_j do you wonder who_i t_i bought t_j?*

In (17b) the trace in the raised phrase, [*which picture of t*], is not bound in violation of the PCB. If reconstruction is possible, the PCB violation should be ameliorated. In (18b), there is no *whom-who* pair-list interpretation. If reconstruction could take place, one possibility is that *whom* lowers to the position of *who*; or, [*which picture of whom*] reconstructs, then *whom* raises to the lower Spec, CP and forms a pair-list question with *who*.

Both of these have other explanations. For (17b), the ungrammaticality follows from cyclicity.⁴ The derivation of (17b) is countercyclic; *who* first raises from the phrase [*which picture of who*], then, the derivation would have to go back countercyclically down to [*which picture of t*] and raise it in violation of strict cyclicity.

For (18b), the same problem of cyclicity obtains. First the subordinate subject *who* is moved to the lower Spec of CP; then the derivation would have to go “back down” and get the object [*which picture of whom*] and raise it to the matrix Spec of CP. Suppose that one can overcome the cyclicity problem by, for example, postulating multiple specifiers for the embedded CP.⁵ As it turns out, there is an additional problem with (18b). Saito is correct in concluding that the raised wh-phrase [*which picture of whom*] does not reconstruct. However, this is specific to this particular type of construction and does not generalize to other constructions. In fact Saito (1994) already has noted the point. Notice that for [*which picture of whom*] to reconstruct, it would do so into an island. However, it has been observed that reconstruction into an island does not occur. The data comes from pair-list interpretation (e.g., Cresti 1995, Longobardi 1987). As noted by May (1985), the following example has a pair-list interpretation.

- (19) *What_i did every boy buy t_i?*

Longobardi (1987) noticed that the pair-list interpretation disappears if the wh-phrase is extracted out of an island.

(20) *What_i do you wonder whether every boy bought t_i?*

This sentence most naturally has a single-pair interpretation – a felicitous answer would be “PlayStation2” – but a pair-list interpretation is difficult to obtain. Because the pair-list interpretation involves the universal somehow taking scope over the wh-phrase (*every* > wh),⁶ the wh-phrase must be interpreted at a position where this scope relation with the universal is possible. In the simple sentence in (19), there is no problem, but in (20), the wh-phrase that has moved out of the island is somehow too far away for the universal to take scope over it, an indication that it cannot be reconstructed to its original position or to some intermediate position in the region of the subordinate CP.

4.3. Argument against radical reconstruction

I now turn to direct evidence against two points Saito suggests: (i) there is no reconstruction due to the PCB; (ii) the wh-phrase in (1b), which has scrambled out of an indirect question, undergoes radical reconstruction.

To set up the counterargument, it is first necessary to review an analysis of some English wh question examples (Lebeaux (1988); cf. also van Riemsdijk and Williams (1981), Freidin (1986)). Note the contrast below.

(21) *??/*[Which criticism of John_i]_j did he_i reject t_j?*

(22) *[Which criticism that John_i heard]_j did he_i believe t_j?*

Lebeaux (1988) uses this contrast to argue that *John*, which is an argument of *criticism* in (21), must be merged with *criticism* when *criticism* first appears in the complement position of *reject*. This means that the entire phrase, *which criticism of John*, is constructed in the original complement position. The entire phrase is therefore visible as a copy at its original position, which leads to a Condition C violation. In contrast, (22) is fine. Lebeaux suggests that it is because *that John heard* is an adjunct, and adjuncts need not be merged at the original site. Rather, it can be late-merged after *which criticism* has moved to the Spec of CP. In this way the copy in the lower position is just *which story*, so that Condition C is not violated (cf. also Chomsky 1993).

The data we just observed gives evidence for reconstruction in English, in contrast to the assertion in Saito (1989).⁷ Where there appears to be reconstruction, Saito assumes that it is due to Barss’s chain binding. However,

chain binding has no way to distinguish between (21) and (22). In either case chain binding would relate *he* to the trace, and via the chain, to *John* contained in the wh-phrase in the Spec of CP. *John* is present in both wh-phrases at Spec of CP, so chain binding incorrectly predicts that both are grammatical, or both are ungrammatical, depending on whatever assumptions one makes about how chain binding operates. Chain binding cannot distinguish between the two examples simply because it looks only at the phrase that contains the antecedent (*John*) only after it has moved into the Spec of CP. At that point in the derivation, the adjunct clause containing *John* will have been merged, making it indistinguishable from the wh-phrase with the argument antecedent.⁸

We just saw evidence for reconstruction in English. Nishigauchi (2002) observes that there is a similar argument/adjunct asymmetry in Japanese, which, as he notes, gives evidence against radical reconstruction. I will introduce a crucial example from his work later, but because it involves one complication, I will first present a pair of examples below to illustrate the “Lebeaux” effect in Japanese.

- (23) a. ??/?*[*Minna-no John_i-no hihan-o*]_j *kare_i-ga*
 everyone-GEN John-GEN criticism-ACC he-NOM
 [*Hanako-ga t_j osiete-kureta to*] *itta*.
 Hanako-NOM told.him C said
 ‘[Everyone’s criticism of John], he said that Hanako told him.
- b. [[*Minna-ga John_i-kara kakusite-ita*] *hihan-o*]_j
 everyone-NOM John_i-from was.hiding criticism-ACC]_j
kare_i-ga [*Hanako-ga t_j osiete-kureta to*] *itta*.
 he_j-NOM Hanako-NOM told.him C said
 ‘The criticism that everyone was hiding from John, he said that Hanako told him.’

In (23a), the antecedent *John* occurs as an argument of the nominal head *hihan* ‘criticism’. Following Lebeaux, let us assume that *John* must be merged at the point when the nominal head is initially merged, in the complement position of *osiete-kureta* ‘told’. A full copy of *John* is therefore visible in this position, and it leads to a Condition C violation. In (23b), on the other hand, *John* is contained in a relative clause, which is an adjunct. Again following Lebeaux, assume that an adjunct can be late-merged, in this case, after the relative head, *hihan* ‘criticism’, has been scrambled to the head of the sentence. In this way the relative clause never occurred in

the original position of the head, hence its copy does not exist, and Condition C violation is avoided. This example in (b) clearly indicates that the scrambled phrase does not undergo radical reconstruction. If it did, the entire phrase, [[*minna-ga John_i-kara kakusite-ita*] *hihan-o*]_j, ‘[[everyone-NOM John_i-from was.hiding] criticism-ACC]_j’, would be interpreted lower in the structure, which incorrectly would predict that this example should exhibit a Condition C violation. These examples also demonstrate, just as we saw with the English pair (21)/(22), that chain binding makes the wrong prediction.

Nishigauchi (2002) has already noted the point that Lebeaux-type reconstruction effect gives evidence against radical reconstruction; he uses examples that parallel Saito’s (1989) original indirect-question example. The crucial example Nishigauchi invokes is actually taken from Lanik and Saito (1999).

- (24) [*John_i-ni-tuite-no dono hon*]-o_j *kare_i-ga*
 John-about-GEN which article-ACC he-NOM
 [*Hanako-ga t_j ki-ni-itte iru ka*] *sitte-iru*.
 Hanako-NOM like Q knows
 ‘He wants to know which book about John, Hanako likes.’

Note that this example is exactly like Saito’s original example, in that a wh-phrase has been scrambled long-distance from within an indirect question. As noted by Nishigauchi (2002), looking at (24), we can see immediately that radical reconstruction does not apply, despite the fact that this example parallels Saito’s. *John* in this example is an adjunct. Nishigauchi correctly notes that the “conclusion to be drawn from [this type of example] will be that [it] is not really a ‘semantically vacuous movement’” (Nishigauchi 2002: 84).⁹

Based on the discussion above, we can follow Nishigauchi and conclude the following:

- (25) Scrambling in Saito’s data does not radically reconstruct.

This in turn opens the way for extending the EPP proposal in Miyagawa (2001) for scrambling to the Spec of TP to other domains, where, unlike T, scrambling appears to be optional. It is predicted that this scrambling has some sort of interpretive effect (see also Jayaseelan, this volume, and Otsuka, this volume, for a similar idea). I will return to this issue later in the

the article in conjunction with another piece of evidence Saito (2004) gives for characterizing scrambling as not being triggered by the EPP.

5. Escape hatch in indirect question

In this section, I wish to explore the question of what really is the significance of Saito's (1989) discovery. Despite the fact that I argued against his conclusion (but see later), I will demonstrate that his data, with some extensions, bears on some important questions about Japanese and English. In particular, his data, with some extensions, gives support to two proposals in the literature:

- Watanabe's (1992) proposal that an empty operator is moving in wh-in-situ (or alternatively, Tsai's (1994) idea that wh-in-situ is licensed by unselective binding by Q on C);
- A particular version of Kuroda's (1988) idea that there is "no forced agreement" in Japanese; the particular version I will demonstrate is that when a Head agrees with an element, the specifier of this Head may host some other element, thus showing that there is no forced Spec-Head agreement.

What really is happening with Saito's (10b), repeated below?

- (10) b. ?*Nani-o_i John-ga [WH-ISL Taroo-ga t_i katta ka]*
 what-ACC John-NOM Taro-NOM bought Q
siritagatteiru.
 want-to-know
 'John wants to know what Taro bought.'

Why is this movement of *nani* possible in the first place? It is a movement out of a wh-island. Although Saito himself marks the sentence as slightly marginal, as signified by the single question mark, I find the sentence quite acceptable. What this must mean is that the wh-phrase is able to employ the specifier of CP of the indirect question as an escape hatch.

- (26) ?*Nani-o_i John-ga [WH-ISL t_i [TP Taroo-ga t_i katta ka]]*
 what-ACC John-NOM Taro-NOM bought Q
siritagatteiru.
 want-to-know
 'John wants to know what Taro bought.'

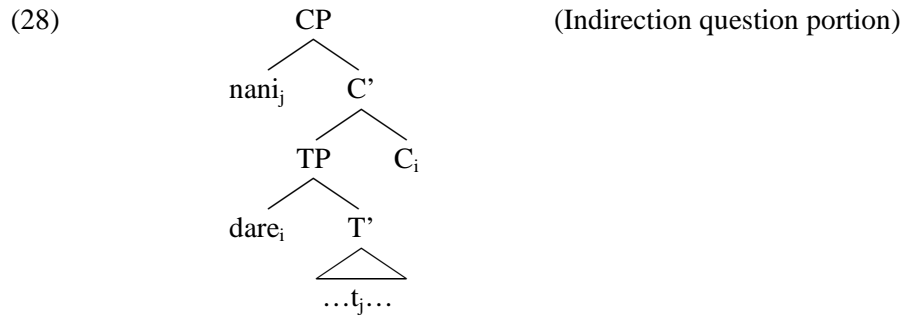
There are at least two possible reasons why the wh-phrase may move through the Spec of CP as shown above. One is that the scrambling of the wh-phrase into the Spec of CP counts as wh-movement, and fulfills the [+wh] selectional requirement. The fact that scrambling sometimes counts as wh-movement has been suggested by Takahashi (1993), and Saito (1994), among others. The second possibility is that the [+wh] requirement is met even before the wh-phrase moves; an agreement relation is established between the wh feature on the wh-phrase-in-situ and the Q feature on C. For our purposes we can imagine one of two ways in which this might happen. Watanabe's (1992) (and also Hagstrom's (1998)) approach would associate an operator with the wh-in-situ phrase, which moves to C to check off the Q feature. Alternatively, Tsai's (1994) system would simply establish the relationship between the Q on C and the wh feature via unselective binding. Either way, the Spec of CP is left vacant.¹⁰ The following example gives support to the Watanabe/Hagstrom/Tsai approach – that is, Q on C is satisfied by some sort of matching with the wh-feature/operator on the wh-phrase.

- (27) ? *Nani-o_i John-ga [WH-ISL t_i [TP dare-ga t_i katta ka]]*
 what-ACC John-NOM who-NOM bought Q
siritagatteiru ndai?
 want-to-know Q
 'What does John want to know who bought?'
 (answer: John wants to know who bought A BOOK.)

In this example the object wh-phrase, *nani* 'what', has been extracted from the wh-island, and it raises to the matrix clause where it forms a direct question. To ensure that this wh-phrase is interpreted in the matrix question, I have used the question particle *-ndai* for the matrix clause, which occurs only with a direct wh-question. The wh-phrase moves through the vacant Spec of CP, making it possible to avoid a wh island violation. The indirect question also contains the wh-phrase *dare* 'who' in the subject position. Presumably this wh-phrase is in-situ and does not move, and it is the wh-phrase that meets the [+wh] selectional requirement of the indirect question. This is so because the overtly moved wh-phrase is interpreted at the matrix clause, meeting the [+wh] selectional requirement of the matrix Q. The question is, how does *dare* 'who' meet the [+wh] requirement of the indirect question Q? We can conclude that it does not raise to the Spec of CP at LF. This is because this Spec of CP already has a copy of *nani*, which

has moved overtly through this Spec of CP to the matrix clause. Hence, the wh feature of *dare* ‘who’ must be checked against the Q feature on C of the indirect question by some other means. The two options are Watanabe style raising of an empty operator to C (also Hagstrom 1998), or Tsai’s unselective binding. Either way the [+wh] requirement is met without having to move the wh-phrase as a category to the Spec of CP. We can see from what we have observed that LF movement of the entire wh-phrase to the Spec of CP does not take place, or, at least, need not take place.

The example in (27) also contains another important point. Note that the Q feature on the subordinate C agrees with the subject wh-phrase *dare* ‘who’. This satisfies the [+wh] requirement of the indirect question. Yet the object wh-phrase *nani* is able to move through the Spec of CP to avoid a wh island violation. This is schematized below.



At this point in the derivation, we see that there is no Spec-Head agreement between the C and its specifier. C agrees with *dare* ‘who’, but its specifier hosts *nani*, which is on its way to the matrix clause, where it will check off the Q feature on the matrix C. It does not enter into agreement with the C in the indirect question. This provides support for a particular version of Kuroda’s (1988) proposal that in Japanese there is no forced agreement. The specifier position is “free” from agreement, allowing anything in principle to move into it. The example above is particularly striking because the head of the CP, C, enters into agreement with the wh feature on *dare* ‘who’, yet the specifier may host *nani* ‘what’, which does not enter into agreement with the same C. Thus, we can narrowly characterize Kuroda’s original proposal as follows.

(29) Japanese has no forced Spec-Head agreement.

This way of framing Kuroda's proposal is consistent with the theory of the time: agreement was equivalent to Spec-Head agreement. In today's theory, however, agreement is, in principle, separated from what appears in the specifier. What (29) states, then, is that agreement occurs in Japanese, but not Spec-Head agreement. There is a proposal by Fukui (e.g., 1986) which in many ways reflects the spirit of Kuroda's work. However, Fukui specifically denies the existence of specifiers and also functional heads in Japanese. While Kuroda's system easily translates into the type of framework we are assuming – we can in fact confirm the validity of his proposal as I just outlined – Fukui's proposal is less transparent from today's perspective. I will therefore not attempt to evaluate his proposal from the type of perspective in this article.

To summarize this section, what I pointed out is that Saito's (1989) observation, with some extensions, provides important support for the approach to wh-in-situ suggested by Watanabe (1992)/Hagstrom (1998) or Tsai (1994). Importantly, it argues against the LF categorical movement of Huang's (1982) and that of Lasnik and Saito (1984). In addition, the data upholds a particular version of Kuroda's proposal that there is no forced agreement in Japanese. Thus, while I argued against the original conclusion Saito drew – that scrambling obligatorily undergoes radical reconstruction – his data turns out to be valuable in giving evidence for some distinguishing properties of Japanese and, presumably, other wh-in-situ languages such as Chinese, Korean and Turkish.

In the next two sections I will take up other arguments Saito (2004) gives for radical reconstruction.

6. Further note on radical reconstruction

Saito (2004) gives two well-known phenomena as further evidence for radical reconstruction. First is the impossibility of creating a new binder by long-distance scrambling.

- (30) ?*Karera-o_i [otagai-no sensei]-ga t_i hihansita (koto)*
 they-ACC each.other-GEN teacher-NOM criticized
 'Each other's teacher criticized them.'

We can see from above that short distance scrambling may create a new binder (cf. Mahajan 1990). However, long-distance scrambling cannot (Mahajan 1990).

- (31) **Karera-o_i [otagai-no sensei]-ga [CP Tanaka-ga t_i hihansita to] itta (koto) criticized C] said*
 ‘Each other’s teacher said that Tanaka criticized them.’

In this example *karera* ‘they’ cannot bind the reciprocal.¹¹ Saito (2004) suggests that radical reconstruction makes the right prediction here; *karera*, the potential binder, is radically reconstructed to its original position, so that it cannot be in a position to bind the reciprocal. This leaves as a question the ability of *karera* in short scrambling to be a binder.

Saito (2004) also notes a quantifier scope fact observed by Oka (1989) and Tada (1993) as evidence for radical reconstruction. Japanese is scopally rigid; the scope relation is read off the surface c-command relation.

- (32) *Dareka-ga daremo-o aisiteiru.*
 someone-NOM everyone-ACC love
 ‘Someone loves everyone.’
 some > every, *every > some

However, as Kuroda (1971) first noticed, scrambling leads to a new scope relation.

- (33) *Daremo-o_i dareka-ga t_i aisteiru.*
 everyone-ACC someone-NOM loves
 every > some, some > every

However, Oka and Tada noticed that long-distance scrambling does not have this effect; the scope relation does not change under long-distance scrambling.¹²

- (34) *Daremo-o_i dareka-ga [Tanaka-ga t_i aisiteiru to] itta.*
 everyone-ACC someone-NOM Tanaka-NOM love C said
 ‘Everyone, someone said that Tanaka loves t.’
 some > every, *every > some

Saito (2004) notes that radical reconstruction correctly rules out the “every > some” interpretation since the scrambled universal quantifier is put back at LF below the existential quantifier.

For the binding facts noted above, we can go back to the original analysis by Mahajan (1990), who pointed out that clause-internal scrambling has A-movement properties while long-distance scrambling solely has A'-movement properties. For the short scrambling to be an instance of A-movement simply means that the landing site is an A-position. But in long-distance scrambling it is an A'-position. We can then explain the difference in binding possibilities of an anaphor between short and long scrambling by following the original notion of binding as taking place solely within the "A-position" system of grammar (Chomsky 1981).¹³

For the quantifier facts, I have something more interesting to offer. Suppose, as has been suggested in the literature, that scrambling of a quantifier may count as an instance of overt QR (cf. Kitahara (1995), Miyagawa (2003b), Sohn (1995), Tonoike (1997)). Let us also assume the notion of Fox's (2000) Scope Economy.

(35) *Scope Economy*

A Scope Shifting Operation can move XP_1 from a position in which it is interpretable only if the movement crosses XP_2 and $\langle XP_1, XP_2 \rangle$ is not scopally commutative. (Fox 2000: 26)

What this says is that optional application of QR is possible if it leads to a new scope relation. This was Kuroda's original observation about short scrambling. As we saw in (33), moving the object quantifier over the subject quantifier makes it possible for the object quantifier to take scope over the subject quantifier. This new scope relation licenses the movement as QR. What about long distance scrambling? Before looking at the Japanese example again, let us consider examples from English.

May (1977) noted that QR is clause bound.

(36) a. *Someone loves everyone.*

some > every, every > some

b. *Someone thinks that Mary loves everyone.*

some > every, *every > some

However, there are counterexamples to the clause boundedness of QR. The following is an observation by Moltmann and Szabolci (1994) as discussed by Fox (2000).

- (37) a. *One girl knows that every boy bought a present for Mary.*
 one > every, *every > one
- b. *One girl knows what every boy bought for Mary.*
 one > every, every > one

Assuming that long-distance QR would need to go through the Spec of CP, or adjoin to this CP, what Fox points out is that in (a), the movement of *every boy* to the lower Spec of CP does not lead to a new scope relation. Hence it is scopally vacuous and, by the Scope Economy, this movement is not licensed. This, in turn, precludes the universal quantifier from raising to the matrix clause to take scope over the existential. In (b), moving the universal *every boy* over *what* does lead to a new scope relation – it makes a pair-list interpretation possible. This, then, sets up the movement of the universal quantifier to the matrix clause, where ultimately it may take scope over the existential.

Let us return to the Japanese example, repeated below.

- (38) *Daremo-o_i dareka-ga [t_i Tanaka-ga t_i aisiteiru to] itta.*
 everyone-ACC someone-NOM Tanaka-NOM love C said
 ‘Everyone, someone said that Tanaka loves t.’
 some > every, *every > some

This example shows the effect of “clause boundedness” of QR. Note that the initial move of the universal quantifier *daremo* ‘everyone’ within the lower CP does not lead to a new scope relation. On a par with the English example (36b) above, the movement of the universal quantifier all the way to the matrix clause does not count as QR due to its violation of scope economy. Hence it cannot take scope over the existential in the matrix subject position. Compare this example to the one below.

- (39) *Daremo-ni_i dareka-ga [John-ga t_i kisu_sita to] omotteiru.*
 everyone-DAT someone-NOM John-NOM kissed C thinks
 ‘Everyone, someone thinks that John kissed.’
 *everyone > someone, someone > everyone

- (40) *Daremo-ni_i dareka-ga [dareka-ga t_i kisu_sita to] omotteiru.*
 everyone-DAT someone-NOM someone-NOM kissed C thinks
 ‘Everyone, someone thinks that someone kissed.’
^{ok}/??everyone > someone, someone > everyone

The difference between the pair is that in (39) there is no quantificational expression in the subordinate clause other than the scrambled phrase, “everyone.” In (40), the subordinate subject is the quantificational expression “someone.” Although delicate, I believe that the ambiguity is more readily detectable in (40).¹⁴ In (39), the first step of the movement of “everyone” to the head of the subordinate clause does not lead to a new scope relation, hence this optional movement is not licensed. As a result, the next step, likewise, is not licensed. We return to why this movement takes place at all below. In (40), the first step does lead to a new scope relation, whereby “everyone” is able to take scope over the subordinate subject “someone.” This step is, thus, licensed. The next step is also licensed because “everyone” moves across another quantifier, “someone,” leading to a new scope relation. In order for “everyone” to scope over “someone,” it is necessary for “everyone” also to scope over “someone,” since that is the new scope relation that licenses the first step of the movement. I believe this prediction is borne out. These examples suggest that the original observation by Oka and Tada, which Saito (2004) points to as evidence for radical reconstruction, was simply a demonstration of Scope Economy at work. The observation was based on examples in which a quantifier moved in the lower clause without altering the scope relation, hence in violation of Scope Economy. I share Tada’s (1993) intuition that such a structure represents an illicit LF structure; this “illicitness” in our analysis is reflected in the fact that the structure was created via illicit movement. Once we constructed an example where new scope relation results from the initial move, we saw that it is possible for long-distance scrambling to lead to a new scope relation relative to the matrix subject quantifier.

Note, by the way, that we can get a similar effect of scope ambiguity using an indirect question.¹⁵

- (41) *Dono-hon-mo_i dareka-ga [CP t_i [dare-ga t_i yonda ka]]*
 every-book someone-NOM who-NOM read Q
siritagatteiru.
 want:to:know
 ‘Someone wants to know who read every book.’
 every > someone, someone > every

This is similar to the Moltmann/Szabolci English example in (37b) (*One girl knows what every boy bought for Mary*). Fox argues that this English example allows nonlocal QR because first, QR moves *every boy* to a position

above *what*, which leads to a new relation, namely, pair-list. Can we say the same for the Japanese example above in (41)? In fact we cannot. Any combination of the universal expression such as *daremo* ‘everyone’ and a wh-phrase does not give rise to a pair-list interpretation (cf. Hoji 1986).

- (42) *Daremo-o dare-ga aisiteiru no?*
 everyone-ACC wh-NOM love Q
 ‘Everyone, who loves?’
 Single pair, *pair-list

This sentence only has the interpretation, “wh > every.” It certainly does not have a pair-list interpretation.¹⁶ Why, then, do we get scope ambiguity in (41)? The answer must be that it is not possible to reconstruct into a wh-island, as we noted earlier. As a result, the long-distance scrambled universal phrase *daremo* ‘everyone’ is interpreted in the scrambled position, above the matrix existential subject. This, then, is evidence that scrambling behaves exactly like other types of movement – it may reconstruct, except under certain conditions that militate against reconstruction, namely, islands.

7. Where radical reconstruction really exists

We have seen that there is ample evidence showing that radical reconstruction does not exist. The Condition C facts in section 4, repeated below, point to the fact that whatever reconstruction effects we find in the Saito-type examples are simple forms of reconstruction, not the radical reconstruction type.

- (43) [*John_i-ni-tuite-no dono hon*]_{*o_j*} *kare_i-ga*
 John_{*i*}-about-GEN which article-ACC he_{*i*}-NOM
 [*Hanako-ga t_j ki-ni-itte iru ka*] *sitte-iru.*
 Hanako-NOM like Q knows
 ‘He wants to know which book about John, Hanako likes.’

This example avoids a Condition C violation because the antecedent is contained in an adjunct. The Lebeaux (1988)/Chomsky (1993) analysis is that while an argument must merge at the point when the head is merged, an adjunct may merge later in the derivation.

We also saw that instances of long-distance quantifier scrambling need not reconstruct if the movement is motivated. Thus, contrary to the earlier observations by Oka (1989) and Tada (1992), a long-distance scrambled quantifier may be interpreted in its scrambled position if the movement in the lower clause leads to a new scope possibility (cf. Fox 2000). Another example is given below.

- (44) *Dono-ronbun-mo_i dareka-ga [t_i sukunakutomo-hitori-no-kyouzyu-ga*
 every-article-ACC someone-NOM at.least.one.professor-NOM
t_i hihansuru to] omotteiru.
 criticize C thinks.
 ‘Every article, someone thinks that at least one professor will criticize.’
 some > every, (?)every > some

In this example the initial movement of “every article” from its subordinate complement position to the Spec of CP creates a new scope relation – the universal quantifier may take scope over the quantifier “at least one professor.” This, in turn, licenses the quantifier to move to the matrix clause, across the matrix existential quantifier, which also leads to a new scope relation, hence the universal is able to be interpreted in the final scrambled position. Again, this is evidence against radical reconstruction.

Does this mean that radical reconstruction does not exist at all? In fact, Saito (2004) is correct in pointing out the Oka/Tada example as an instance of radical reconstruction. Another example is given below.

- (45) *Daremo-o_i dareka-ga [Tanaka-ga t_i aisiteiru to] itta.*
 everyone-ACC someone-NOM Tanaka-NOM love C said
 ‘Everyone, someone said that Tanaka loves t.’
 some > every, *every > some

In this example, the long-distance scrambled universal quantifier cannot be interpreted in the final scrambled position. It therefore must undergo required reconstruction, and we can consider this as an instance of radical reconstruction, in so far as the universal quantifier simply does not get an interpretation in the final scrambled position. It is, therefore, semantically vacuous, as Saito has argued. We have seen ample evidence against radical reconstruction, yet, this example points to the existence of radical reconstruction.

What I wish to argue is that radical reconstruction – or PF scrambling – exists, but, unlike Saito (1989, 2004), who assumed that radical reconstruction applies to all instances of long-distance scrambling (cf. also Sauerland

and Elbourne 2002), what we can see from the array of data in this article is the following.

(46) *Radical reconstruction*

Radical reconstruction occurs only when the scrambling is not motivated by any universal conditions on movement.

Let us start with instances of scrambling in which radical reconstruction does not (or need not) occur. These are the cases of clause internal scrambling.

- (47) a. $[_{TP} \text{ Taroo-ga}_i \text{ } [_{vP} \text{ } t_i \text{ hon-o } \text{ kat}]\text{-ta.}$
 Taro-NOM book-ACC buy-PAST
 ‘Taro bought a book’
- b. $[_{TP} \text{ Hon-o}_i \text{ } [_{vP} \text{ Taroo-ga } t_i \text{ kat}]\text{-ta.}$
 book-ACC Taroo-ga buy-PAST

Why is it that this local scrambling does not undergo radical reconstruction? Under our view, it is because this movement is always motivated. This is precisely the analysis of A-scrambling and the EPP – the scrambling is not an optional movement, hence it is not subject to Fox’s condition on optional movement. As I have argued (Miyagawa 2001, 2003), T in Japanese is associated with the EPP.¹⁷ This may be satisfied by moving the subject, as in (a) above, or the object, as in (b). The crucial point is that this movement is motivated by the EPP, so that the movement is not optional. Thus, if the object scrambles, the subject may stay in situ in Spec of *vP*. This makes it possible for the universal quantifier in the subject position to be interpreted in the scope of negation. I repeat the example below.

- (48) *San-satu-no-hon-o_i zen’in-no-gakusei-ga t_i yoma-nakat-ta.*
 3-CL-book-ACC all-GEN-student-NOM read-NEG-PAST
 not > all, all > not

In contrast to this, long-distance scrambling cannot meet the EPP requirement of the T to which it adjoins (Miyagawa 2001). Note the example below from Miyagawa (2001).

- (49) *Syukudai-o_i zen'in-ga [CP sensei-ga t_i dasu to]*
 homework-ACC all-NOM teacher-Nom assign C
omowa-nakat-ta.
 think-NEG-PAST
 'Homework, all did not think that the teacher will assign.'
 *not >> all, all >> not

As I noted in Miyagawa (2001), this movement cannot be to the Spec of matrix TP, because it is strictly A'-movement (cf. Mahajan 1990). Hence it is solely an adjunction operation. We thus have the following.

(50) *Obligatory and optional scrambling*

- (i) Clause-internal scrambling triggered by the EPP on T – it is not an optional movement;
- (ii) Long-distance scrambling is an optional movement, and is subject to the condition on optional operation.

What we have learned so far in this article is that of the two types of scrambling above, long-distance scrambling allows interpretation of the scrambled element at the final landing site iff each movement step is motivated. If not, the scrambled element does not get interpreted in the moved position, hence it is PF movement. Why is there this “radical reconstruction” effect?

The radical reconstruction phenomenon is a chain that is pronounced at the head, but interpreted at the tail, or some copy lower than the head. This way of “spelling-out” the chain completes the paradigm of chain spell-outs given in the literature. It is easy to see that radical reconstruction fills a logical gap in the paradigm.

(51) *Types of chain spell-outs*

	Head	Tail
(i) overt movement:	pronounce, interpret	(interpret)
(ii) covert movement: ¹⁸	interpret	pronounce (, interpret)
(iii) radical reconstruction:	pronounce	interpret

A typical overt movement ((i)) creates a chain in which the head is both pronounced and interpreted. It presumably also gets some sort of interpretation in the tail position to identify the thematic relation. This is the reason for “interpret” in parentheses for (i) (and also (ii)). Covert movement in (ii)

is a chain in which the tail is pronounced, but the head is interpreted (the tail also gets the “thematic” interpretation). Finally, radical reconstruction – or PF movement – is an instance in which the head is pronounced but the tail is interpreted. The only other possibility is if the “tail” is both interpreted and pronounced, but that is a case of non-movement.

Finally, let us consider precisely under what circumstances radical reconstruction occurs. We have seen that illicit movement of a quantifier leads to radical reconstruction. We will see in the next section that, ironically, although Saito was the one to propose radical reconstruction, the actual data he presented is not an instance of radical reconstruction, because the movement of the *wh*-phrase meets the requirement for optional movement at each link of the chain. This leaves long-distance scrambling of an ordinary nominal or an R-expression for us to consider. Does the long-distance movement of such an expression lead to radical reconstruction? If so, this would be another case of radical reconstruction in addition to the improper movement of quantifier. If not, radical reconstruction is limited solely to the improper movement of a quantifier. As we will see, scrambling of ordinary nominals may fulfill the requirement of optional movement.

As noted by Neeleman and Reinhart (1998), scrambling may lead to a variation in the focus potential of the sentence. Ishihara (2000) illustrates this for Japanese. Let us begin with a normal SOV word order.

- (52) *Taroo-ga* [_{VP} *hon-o* *katta*].
 Taro-NOM book-ACC bought
 ‘Taro bought a book.’

The focus here is on the object *hon* ‘book’, which is the phrase that bears the nuclear stress. According to the Focus Rule of Neeleman and Reinhart (1998), which allows focus to project upward from the focused element, the focus domain of this sentence may be the object *hon*, the VP that contains it, or the entire IP. Thus, (52) can be used as an answer to the following three questions:

- (53) a. *What happened?* (focus on IP)
 b. *What did Taro do?* (focus on VP)
 c. *What did Taro buy?* (focus on object)

(54) has a different focus domain set due to the scrambling of the object.

- (54) *Hon-o_i Taroo-ga* [_{VP} *t_i katta*]
 book-ACC Taro-NOM bought

The focus domains are the subject NP *Taroo* and the TP, but the VP cannot be a focus domain because it does not contain the stress. Therefore (54) cannot be used to answer “What did Taro do?”

Now consider the following.

- (55) *Hanako-ga* [_{CP} *Taroo-ga hon-o katta to*] *itta*.
 Hanako-NOM Taro-NOM book-ACC bought C said
 ‘Hanako said that Taro bought a book.’

This sentence can be used to answer the following three questions.

- (56) a. *What did Hanako say happened?* (focus on subordinate IP)
 b. *What did Hanako say that Taro did?* (focus on subordinate VP)
 c. *What did Hanako say that Taro bought?* (focus on subordinate object)

Now consider the following long-distance scrambling of the subordinate object, which is an ordinary nominal expression (*hon* ‘book’).

- (57) *Hon-o_i Hanako-ga* [_{CP} *t_i Taroo-ga t_i katta to*] *itta*.
 Book-ACC Hanako-NOM Taroo-NOM bought C said

First, the scrambling of *hon-o* ‘book-Acc’ within the subordinate clause deprives the focus reading on the VP, as we saw for the example (54). This means that this scrambling has a meaningful effect on the output of this movement, hence the first movement is licensed. Note, now, that the entire sentence in (57) can answer (56a) and (56c), but not (56b).¹⁹ Again, the movement is licensed. We thus assume that the long-distance scrambling of an ordinary expression does not result in radical reconstruction. We thus have the following.

- (58) *Radical reconstruction (“PF” scrambling)*

Radical reconstruction occurs only if a quantifier is moved by illicit optional movement.

This is a fundamentally different portrayal of radical reconstruction than Saito (1989) and Sauerland and Elbourne (2002). They assume that radical

reconstruction – or PF scrambling – is widely prevalent. What I have shown is that PF scrambling occurs in an extremely narrow range of data – when a quantifier is moved illicitly.

Our proposal makes a prediction about a Condition C violation that should occur even if the antecedent is contained in an adjunct. Note the contrast below.²⁰

- (59) a. [*Taroo_i-ga kaita ronbun*]-*o_j* *kare_i-ga* [*Hanako-ga t_j*
 Taro-NOM wrote article-ACC kare-Nom Hanako-NOM
hihansita to itta.
 criticize C] said
 ‘He said that Hanako criticized the article that John wrote.’
- b. ??/*[*Taroo_i-ga kaita dono ronbun*]-*mo_j* *kare_i-ga*
 Taro-NOM wrote every article he-NOM
 [*Hanako-ga t_j hihansita to*] *itta.*
 Hanako-NOM criticize C said
 ‘He said that Hanako criticized every article that John wrote.’

In (59a) the R-expression “article” has been scrambled, and, presumably, the relative clause that contains *John* is late-merged after this scrambling operation. Because this scrambling creates a new focus, the movement is licensed, and there is no radical reconstruction. In (59b), everything is the same as (59a), except that the scrambled phrase is a quantifier (“every article”). This means that this scrambling must be licensed for each chain relative to the quantifier (whether a new scope relation is created). The movement within the lower CP does not meet the requirement, hence scrambling in (59b) is illicit movement. As a result it is PF scrambling and radical reconstruction applies. Condition C violation is thus triggered despite the fact that the antecedent *John* is contained in an adjunct phrase. I have checked with a number of native speakers, and they mostly reacted similarly to the grammatical judgments I have given for the two examples in (59). Some did not see a difference, judging both as fine. It turns out that these speakers also found ambiguity with the Oka/Tada type of example in which a quantifier is scrambled long distance. For these speakers, this movement, which has an effect on focus, is sufficient to license the optional movement, and the quantifier “piggy backs” on this focus movement.

8. The nature of Saito's original data

As the final point in this article, let us return to the original data presented by Saito (1989).

- (60) ?*Nani-o_i John-ga [WH-ISL Taroo-ga t_i katta ka] siritagatteiru.*
 what-ACC John-NOM Taro-NOM bought Q want-to-know
 'John wants to know what Taro bought.'

Contrary to Saito's claim, we have seen evidence that the *wh*-phrase that is scrambled long-distance does not undergo radical reconstruction. In fact it does not undergo reconstruction because of the *wh*-island. The example is repeated below.

- (61) [*John_i-ni-tuite-no dono hon]-o_j kare_i-ga [Hanako-ga t_j
 John_i-about-GEN which article -ACC he-NOM Hanako-NOM
ki-ni-itte iru ka] sitte-iru.
 like Q knows
 'He wants to know which book about John, Hanako likes.'*

In this example, the antecedent, *John*, is inside an adjunct clause within the *wh*-phrase. As a result, it escapes a condition C violation. This means that the *wh*-phrase as a whole does not undergo radical reconstruction; rather it is able to be interpreted in the scrambled position. We have already seen that the [+*wh*] requirement of the indirect question is met by unselective binding (Tsai 1994) or feature movement (Watanabe 1992; Hagstrom 1998), so that is not a problem. The fact that the content of the *wh*-phrase may be interpreted as such indicates that this movement is properly motivated, and it is not an improper movement. The question is, what motivates it?

For the movement within the indirect question, presumably to the Spec of CP, there are a number of possibilities. One possibility is that by this movement, the indefinite quantifier portion of the *wh*-phrase ("some article") is able to take scope over the Q of the indirect question, thus creating a new scope relation. Let us suppose that this is what motivates the first link of the chain, although there are other possibilities just as plausible. What about the second link of the chain, which takes the *wh*-phrase to the matrix position? There is no quantifier in the matrix clause that would interact with the scrambled *wh*-phrase and result in a new scope relation, so we must look elsewhere for justification of this movement. What I detect in

this movement is that the *wh*-phrase is interpreted as a kind of a partitive. If we look at (60), the *wh*-phrase *nani* ‘what’ is most easily interpreted as “what, among the things we are talking about, John wants to know (if) Taro bought.” I suggest that this partitivity interpretation is a manifestation of what Pesetsky (1987) called D-linking. Certain *wh*-phrases, most notably the *which X* type, have a property that they presuppose a salient set of objects/people in the discourse context from which one is asked to pick.

One place where D-linking has been identified is in pair-list interpretation (e.g., Comorovski 1996; Hornstein 1995).

(62) *Who bought what?*

This is most naturally interpreted as a pair-list question. What has been noted is that in this example, *who* is D-linked, in that there is a presupposed set of people, and for each member of this set, we must return an answer of what s/he bought. A particularly cogent example of this need for D-linking was given by Bolinger (1978).

- (63) a. *It’s nice to have all those times scheduled, but when are you doing what?*
 (#But what are you doing when?)
 b. *It’s nice to have all those activities ahead of you, but what are you doing when?*
 (#But when are you doing what?)

In (a) the discourse establishes “all those times” as a topic, so that “when” can “link” to this discourse topic, thus be D-linked. “What” is understood as ranging over the possible “whens” that are known in the conversation. As indicated in the parentheses, reversing the order to “what...when” in this context is distinctly odd because “what” does not link to a discourse topic, hence it is not D-linked. This way of generating pair-lists in multiple *wh*-questions is generally accepted in semantics (Comorovski 1996, Hornstein 1994).

Returning to Japanese, the following example parallels the English *who bought what?* example.

- (64) *Dare-ga nani-o katta no?*
 who-NOM what-ACC bought Q
 ‘Who bought what?’

The most natural way to interpret this is that there is a presupposed set of people, and for each member of the set, tell me what s/he bought. Now, see what happens if we scramble the object wh-phrase *nani* ‘what’.

- (65) *Nani-o_i dare-ga t_i katta no?*
 what-ACC who-NOM bought Q
 ‘What, who bought?’

This is not wh-movement, but simply an instance of scrambling. What is noteworthy is that in this example, it is possible to interpret the scrambled *nani* as referring to the presupposed set of objects, and for each object, one is supposed to return the answer of who bought it.²¹ This is consistent with the idea in Miyagawa (2004) that scrambling has an effect on interpretation in some form in virtually all cases.

Given what we have seen, it is not at all surprising that the original example by Saito (1989), in which a wh-phrase is scrambled long-distance, is an instance of proper movement – the wh-phrase becomes D-linked. This is why it is able to be interpreted as well as pronounced in the final scrambled position.

9. Conclusion

I gave ample evidence against what Saito (1989) called “radical reconstruction,” which he characterized as reflecting movement that is “semantically vacuous.” In his view, long distance scrambling is always semantically vacuous (but see Saito 1994). One interesting result of our study is that, despite the ample evidence against it, there is one narrow band of data where radical reconstruction appears to exist. This is in the domain of “illicit movement,” in which optional movement of a quantifier is not motivated in any way throughout the derivation. So, Saito was correct in identifying “semantic vacuity” with radical reconstruction – it is only when there is no semantic effect of any sort with scrambling that radical reconstruction occurs. However, unlike his assertion, radical reconstruction only occurs in one, highly narrow circumstance – when a quantifier undergoes illicit movement. This also questions Sauerland and Elbourne (2002), who assumes that PF movement is widely available in grammar, and Japanese scrambling may be semantically vacuous. I argued that the presence/absence of radical reconstruction follows from the properties associated with condition on

optional movement (Fox 2000). Finally, it is something of an oddity that the only instance of PF movement is found in a domain in which movement is not licensed. The question arises here as to whether this is true syntactic movement, or some other operation, such as a simple reordering at PF of two local constituents – akin to stylistic inversion discussed in the 1960s. If it turns out that radical reconstruction/PF movement is simply this kind of reordering, then we can conclude that there is no radical reconstruction in UG. Suppose that this is what turns out to be the case. It would then cast an interesting light on the history of the analysis of scrambling. Inoue (1976–1977) argued that scrambling in Japanese is not due to movement, but rather, it is some sort of a stylistic option in word order. Harada (1977) argued against this position and proposed that scrambling is due to syntactic movement. The study in this article generally supports Harada’s position, but at the same time, Inoue’s position is upheld at least for a small range of “scrambling” that does not have an effect on the output. This kind of scrambling may very well turn out to be exactly how Inoue described it – non-movement.

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Notes

1. Saito uses the feature “P” (Chomsky 2000) instead of EPP, but it is the same feature.
2. See also Sabel, this volume, for the idea that scrambling must have effect on the output.
3. The availability of “all >not” in the example is due to the fact that “all” can always be interpreted with the group reading (cf. Miyagawa 2001).
4. Noam Chomsky and Kaneaki Arimura independently pointed this out to me.

5. Thanks to Takashi Munakata for suggesting the multiple-specifier possibility. See Sabel (2002) for related discussion.
6. See, for example, Groenendijk and Stokhof (1984), May (1985, 1988), Higginbotham (1991), and Beck (1996); and Chierchia (1993) for a different approach that is nevertheless consistent with what we are saying.
7. In fact, given the copy theory of movement (e.g., Chomsky 1993), Saito's concern about reconstruction being a lowering rule, hence in violation of PBC, can be set aside. In principle there are no traces, but rather copies that are either pronounced or not pronounced.
8. See Sabel (2002) for discussion of some complicating issues surrounding the "Lebeaux" data.
9. There is a complication inherent to Nishigauchi's example. It involves a wh-island, which is necessary to set up his argument since Saito's original example was an indirect question. However, we have already seen that reconstruction apparently does not occur into an island. Hence, it is not possible to create a "clean" argument/adjunct pairing, reflecting Lebeaux's original pair, using the indirect-question construction. This is why I used the normal biclausal structure to illustrate the argument/adjunct distinction in (23). In fact, Nishigauchi attempts to demonstrate the argument/adjunct distinction using an indirect question construction. We have already seen in (24) that *John* in an adjunct can escape a Condition C violation. Nishigauchi offers the following as a contrast (his judgment is given).

- (i) ?* [*Hanako*_i-*no* *donna* *imeezi-o*]_j *kanozyo*_i-*ga* [*Masao-ga* *t*_j
Hanako-GEN *what.kind* *image-ACC* *she-NOM* *Masao-NOM*
ki-ni-itte-iru ka] *siritagatteiru*.
like *Q* *want-to-know*
 'She wants to know what kind of image of Hanako Masao likes.'

Nishigauchi offers this example as an illustration of a Condition C violation since *Hanako* is an argument of *imeezi* 'image'. Nishigauchi does note elsewhere in his article that the judgments of this sort are tricky, and speakers split on how bad an "argument" example is. Note that this example involves a wh-island, which should make the reconstruction back into the island impossible. It is, then, something of a puzzle that the sentence is judged as ungrammatical. I leave this as an open question, including whether the sentence is as bad as, say, (23a).

10. In fact, Huang (1982), in showing that there is no wh island in Chinese, pointed out that the Spec of CP in the indirect question in Chinese is vacant, hence available as an escape hatch, because, in his system, the wh-phrase raises at LF.
11. See Yoshimura (1989) for a different judgment.
12. Although the "every > some" judgment of (34) is widely accepted, there are speakers who find (34) perfectly ambiguous. I will comment on it towards the end of the paper.

13. See Nishigauchi (2002) for an informative discussion of the issues surrounding binding and scrambling.
14. I have consulted six native speakers, all linguists. None got the wide reading of “everyone” in (39), as expected. They all got the wide reading of matrix “someone” in both (39) and (40), again, as expected. For the crucial reading – the wide reading of “everyone” over the matrix “someone” for (40), four of the six speakers got this reading, although one said that it is somewhat difficult. Of the remaining two speakers, one did not get it at all, and the sixth could not determine if the reading is available or not. I note that, after I completed this manuscript, I discovered that Abe (2003) has made similar observations as (39) and (40), although in a slightly different structure.
15. The discussion of (41) and related issues benefitted from comments by Hideaki Yamashita.
16. The pair-list interpretation is also absent in the example below (cf. Hoji 1986).
 - (i) *Nani-o_i daremo-ga t_i katta no?*
 what-ACC everyone-NOM bought Q
 ‘What, everyone bought?’

In this example the universal occurs in the subject position while the wh-phrase is the object. The English counterpart does have a pair-list interpretation (*What did everyone buy?*).
17. One possible exception is the T that goes with an unaccusative verb. See Miyagawa and Babyonyshev (2004).
18. See, for example, Bobaljik 1995, Fox and Nissenbaum 1999, Pesetsky 1998, Groat and O’Neil 1996.
19. See Sabel, this volume, for discussion of a similar example.
20. Thanks to Norvin Richards for pointing out this prediction.
21. Hagstrom (1998) points out that “anti-superiority” sentences such as (65) do not get associated with a pair-list interpretation, but only with a single-pair interpretation. Hagstrom is correct for (65), but only if focus-stress is placed on the scrambled wh-phrase *nani* in the sentence initial position. If there is no such stress on the first wh-phrase, pair-list interpretation is possible.

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On the acquisition of scrambling in Japanese

Keiko Murasugi and Tomoko Kawamura

1. Introduction

This paper presents an experimental study on the acquisition of Japanese scrambling. Japanese is a free word-order language, and allows both the subject-object-verb order and the object-subject-verb order. Harada (1977) and Saito (1985), among others, have proposed that the former is the basic order and that the latter is derived by movement of the object. Thus, (1b) is derived from (1a).

- (1) a. *Ahiru-ga ushi-o oikaketa.*
duck -NOM cow-ACC chased
'The duck chased the cow.'
- b. *Ushi-o ahiru-ga oikaketa.*
cow -ACC duck -NOM chased
'The duck chased the cow.'

The movement operation involved in (1b) is called scrambling. The main question to be addressed in this paper is when and how Japanese-speaking children acquire this operation and its properties.

Hayashibe (1975) examines how Japanese-speaking children interpret the scrambled sentences, and reports that scrambling is acquired quite late in the development of grammar. He attributes this to the Canonical Sentence Strategy discussed in Bever (1970). That is, according to Hayashibe, children tend to interpret the first NP as agent and the second NP as patient even in scrambled sentences. The hypothesis seems quite plausible as it is argued in de Villiers and de Villiers (1973) that English-speaking children employ this strategy when they comprehend passive sentences. However, Otsu (1992) questions Hayashibe's results and demonstrates that 3–4 year-old Japanese speaking children interpret scrambled sentences correctly when appropriate discourse contexts are provided. Further, Murasugi (2000) suggests that 2–4 year-old children interpret scrambled sentences correctly

even without any discourse context. The possibility raised there is that the relevant factor is not discourse context but rather the subjects are made to pay proper attention to the Case markers.

In this paper, we first show that children understand scrambled sentences at a very early age, confirming the results of Murasugi (2000). Then, we present evidence that those children actually have proper knowledge of the syntactic properties of scrambling. In the first experiment, we test Japanese-speaking children's comprehension of the predicate-argument relations in passive and scrambled sentences, and by doing so, compare the acquisition of passive with the acquisition of scrambling. The actual test sentences include basic, passive and scrambled sentences such as the following:

- (2) a. *Kuma-ga nezumi-o oikake-ta.*
 bear -NOM rat -ACC chase -PAST
 'The bear chased the rat.'
- b. *Kaeru-ga_i nezumi-ni t_i oikaker-are-ta.*
 Flog -NOM rat -by chase-passive-PAST
 'The flog was chased by the rat.'
- c. *Usi-o_i ahiru-ga t_i oikake-ta.*
 cow-ACC duck -NOM chase -PAST
 'The cow, the duck chased.'

The result shows that children acquire scrambling at a very early stage, in fact, much earlier than passive.

In the second experiment, we examine whether those children who comprehend the scrambled sentences in the first experiment know the syntactic properties of scrambling as well. As discussed in Saito (1985), scrambling exhibits the reconstruction property, which is typical of A'-movement. Focusing on this property, we test the children's comprehension of examples such as the following:

- (3) a. *Ahiru-ga zibun -no niwa -de usi-o oikaketa.*
 Duck -NOM himself-GEN garden-at cow-ACC chased
 'The duck chased the cow at the garden of himself.'
- b. *[Usi-o]_i [zibun -no niwa -de]_j ahiru-ga t_jt_i oikaketa.*
 cow-ACC himself-GEN garden-at duck -NOM chased
 'The cow, at the garden of himself, the duck chased.'

The anaphor *zibun* must have a c-commanding antecedent at LF. In (3a), the subject *ahiru-ga* c-commands *zibun* and hence, can be the antecedent of the anaphor. (3b) allows the same interpretation despite the fact that the required c-command relation is destroyed by scrambling. The example, then, requires reconstruction of *zibun-no niwa-de* ‘at self’s garden’ to its initial position at LF. Our experiment demonstrates that those children who assign correct predicate-argument structures to scrambled sentences exhibit the knowledge of this reconstruction property as well.

In the following section, we will briefly go over the adult grammar of Japanese scrambling and the previous literature on its acquisition. Then, we present the results of the first and the second experiments in Sections 3 and 4 respectively. In Section 5, we summarize the conclusions and discuss further implications of the experimental results. In particular, we argue that they indicate not only that children have knowledge of scrambling quite early but also that the acquisition of passive is much delayed, even more so than children’s comprehension of simple passive sentences indicate. This, we argue, provides further supporting evidence for Borer and Wexler’s (1987) A-chain maturation hypothesis, which is already pursued in the acquisition research on Japanese by Sugisaki (1997) and Sugisaki and Isobe (2001).

2. Previous research on the syntax and acquisition of Japanese scrambling

2.1. The adult grammar

As was noted in the preceding section, the free word-order phenomenon in Japanese is attributed to scrambling. One piece of evidence for scrambling as a movement operation is provided in Haig (1976) and Harada (1977). They show that scrambling exhibits island phenomenon (Ross 1967).

- (4) a. *John-ga* [_{NP} [*ano hon-o* *katta*] *hito* -*o*] *sagasite iru rasii*.
 -NOM that book-ACC bought person-ACC looking-for seem
 ‘It seems that John is looking for the person who bought that book.’
- b. ?**Ano hon -o_i* [*John-ga* [_{NP} [*t_i katta*] *hito* -*o*] *sagasite iru rasii*].
 that book-ACC -NOM bought person-ACC looking-for seem

- (5) a. *Mary-ga [John-ga Tokyo-ni ikitagatte iru noni] musisite iru rasii.*
 -NOM -NOM Tokyo-to want-to-go although ignoring seem
 ‘It seems that although John wants to go to Tokyo, Mary is ignoring that fact.’
- b. *?*Tokyo-ni_i Mary-ga [John-ga t_i ikitagatte iru noni] musisite iru rasii.*
 Tokyo-to -NOM -NOM want-to-go although ignoring seem

(4) and (5) indicate that scrambling out of a complex NP or an adjunct phrase makes the sentence ungrammatical. These facts imply that movement is involved in the free word order phenomena.

Kuroda (1980) presents further evidence for scrambling based on the distribution of floating quantifiers. A floating quantifier and the NP it modifies must be adjacent as shown in (6).

- (6) *Otokonoko-ga onnanoko-o hutari mita.*
 boy -NOM girl -ACC two-person saw
- a. ‘A boy saw two girls.’ b. # ‘Two boys saw a girl.’

In this example, the quantifier *hutari* ‘two-person’ is adjacent to *onnanoko-o* ‘girl-Acc’ but not to *otokonoko-ga* ‘boy-Nom’. So, it can only modify *onnanoko*. That is, the interpretation “a boy saw two girls” is possible, but the interpretation “two boys saw a girl” is not. However, somewhat surprisingly (7) is ambiguous:

- (7) *Onnanoko-o otokonoko-ga hutari mita.*
 girl -ACC boy -NOM two-person saw
- a. ‘Two boys saw a girl.’ b. ‘A boy saw two girls.’

In (7), *onnanoko-o* is scrambled from the object position to the sentence-initial position. *Otokonoko-ga* and the quantifier *hutari* are adjacent. Thus, the interpretation “two boys saw a girl” is allowed. Interestingly, the interpretation “a boy saw two girls” is also allowed, despite the fact that the quantifier *hutari* is not adjacent to *onnanoko-o*. Kuroda (1980) argues that *onnanoko-o* and the quantifier *hutari* are adjacent to each other before the application of scrambling and hence, this reading is allowed. The ambiguity, thus, supports the movement analysis of the free word order phenomenon.

Scrambling has a unique property, called the radical reconstruction property. Saito (1989) argues that the scrambled element can be totally

reconstructed to the base-generated position at LF. Consider the following example:

- (8) *Dono hon -o_i [Mary-ga [John-ga t_i tosyokan-kara karidasita ka]*
 which book-ACC -NOM -NOM library -from checked-out Q
siritagatte iru] (koto)
 want-to-know fact
 ‘Mary wants to know Q John checked out which book from the library.’

The wh-object is scrambled out of the embedded clause to the initial position of the matrix clause, but it takes scope at the embedded clause. It should then be possible to move the wh-phrase back to the embedded clause in LF so that it can receive proper interpretation. Saito suggests that scrambling can be literally undone in the LF component.

Scrambling exhibits the standard reconstruction effects as well. Thus, the following contrast obtains:

- (9) a. ?* *Otagai_i -no sensei -ga [John-to Mary]_i-o hihansita.*
 each other-GEN teacher-NOM -and -ACC criticized
 ‘Each other’s teachers criticized them.’
 b. *[Otagai_i -no sensei -o]_j [John-to Mary]_i-ga t_j hihansita.*
 each other-GEN teacher-ACC -and -NOM criticized
 ‘John and Mary criticized each other’s teacher.’

Otagai ‘each other’ is subject to Condition (A) and requires a c-commanding antecedent. (9a) is ill-formed because the anaphor fails to satisfy this requirement. On the surface, (9b) seems to have the same problematic configuration as (9a). However, in (9b), the anaphor can satisfy Condition (A) through reconstruction. That is, (9b) is grammatical because the anaphor is properly licensed at its initial position. The second experiment discussed below is designed to examine children’s knowledge of this reconstruction property of scrambling.

2.2. Acquisition studies

Some studies report that the acquisition of Japanese scrambling is relatively late. One of them is Hayashibe (1975), briefly mentioned above. He conducts an experiment with the act-out task, where the subjects are asked to

demonstrate the meaning of the stimulus sentences by manipulating toy animals on the table. One of the sentences is shown in (10).

- (10) *Ahiru-san-o kame-ga osimasita.*
 duck -ACC turtle-NOM pushed
 ‘The duck, the turtle pushed.’

The reported result is that 4–5 year-old children tend to assign wrong interpretations to these sentences rather consistently. Thus, they take *ahiru-san* ‘duck’ to be the agent and *kame* ‘turtle’ to be the patient in the case of (10). Similar experiments were conducted by Sano (1977) and Suzuki (1977), and similar results are reported.

Hayashibe suggests that the wrong interpretations by children are due to the canonical sentence strategy or its Japanese version noun-noun-verb (NNV) strategy, where the first NP is interpreted as the agent and the second NP as the patient. The children tend to apply this strategy even to scrambled sentences, and hence, their interpretations differ from the adults’. He concludes that scrambling is acquired late, even as late as the fifth year.

Otsu (1992), on the other hand, argues that Hayashibe’s experimental results do not accurately reflect the children’s grammatical knowledge. He shows that 3–4 year-old Japanese speaking children interpret scrambled sentences correctly when appropriate discourse contexts are provided. One of his context-stimulus pairs is shown in (11).

- (11) a. *Kooen-ni ahiru-ga imasita.*
 park -at duck -NOM there was
 ‘There was a duck at the park.’
 b. *Sono ahiru-o kame-ga osimasita.*
 that duck -ACC turtle-NOM pushed
 ‘The turtle pushed the duck.’

Otsu tests 10 3-year-olds and 10 4-year-olds, and reports that those children had no difficulties comprehending scrambled sentences. He also conducts a control experiment, where the test sentences are given to the children directly without the context sentences. The result of this experiment was consistent with Hayashibe’s. Based on these observations, Otsu concludes that the children’s performance on scrambled sentences is affected by the presence/absence of the appropriate discourse context.

Otsu relies on Masunaga (1983) for the concrete analysis of the experimental results. Masunaga argues that scrambling is legitimate when the scrambled element serves the “bridging function” to connect the sentence with the preceding discourse. Otsu suggests that the use of scrambled sentences without any context violates this discourse principle, and this is the reason why many incorrect agent-patient-verb interpretations of the test sentences were observed in Hayashibe’s experiment.

This suggestion seems quite reasonable because it is known that children are sensitive to pragmatics. However, it is also curious because no context is necessary for the adults to interpret scrambled sentences correctly. It would be necessary to investigate the more precise nature of the “bridging function” to pursue this suggestion further.

Murasugi (2000), a pilot study of the present research, tries to examine whether or not 2 to 4 year-old children understand scrambled sentences without discourse contexts. One innovation of the experiment was the inclusion of passives in the test sentences. Its primary purpose was to compare the acquisition of scrambling with that of passive. The following are examples of the test sentences from her experiment:

- (12) a. *Ahiru-ga usi -o oikake-ta.*
duck -NOM cow-ACC chase -PAST
‘The duck chased the cow.’
- b. *Usi -ga_i ahiru-ni t_i oikake-rare -ta.*
cow-NOM duck -by chase -passive-PAST
‘The cow was chased by the duck.’
- c. *Usi -o_i ahiru-ga t_i oikake-ta.*
cow-ACC duck -NOM chase -PAST
‘The cow, the duck chased.’

(12a) is a regular active sentence, and (12b) and (12c) are the corresponding passive and scrambled sentences respectively. The results of the experiment suggest that scrambling is acquired much earlier than generally assumed. More precisely, 70% correct answers were elicited from the 2 year-old subjects, and 100% correct answers from the 3 year-olds for the scrambled sentences. At the same time, some subjects who had no problem with scrambling showed mixed results with passives. Passive is clearly acquired later than scrambling.

3. Experiment 1

3.1. The test sentences and the method

The experiment is basically the same as the one conducted by Murasugi (2000), but we tested a larger number of children from age 2 to age 6. The total number of the subjects in this experiment were 22, including 2 two-year-olds, 6 three-year-olds, 6 four-year-olds, 6 five-year-olds and 2 six-year olds. All of them are monolingual native speakers of Japanese living in Nagoya. 2 adults were tested as the adult control. The subjects were interviewed individually. His/her mother or friend accompanied the subject in the playroom where the session took place.

As in Murasugi (2000), we gave regular active, passive and scrambled sentences randomly to the subjects. 21 test sentences, 7 from each type, were given to each subject in the session. The regular active sentence, as in (12a), constitutes the lexical and syntax tests. The experimental technique we employed was act-out. Accordingly, the subjects were asked to demonstrate the meaning of the test sentence by manipulating toy animals. The protocol for the scrambled sentence in (12c) is shown in (13).

- (13) Experimenter: *Kore-wa nani?*
 ‘What is this?’
- Subject: *Usi.*
 ‘A cow.’
- Experimenter: *Zya, kore-wa nani?*
 ‘Then, what is this?’
- Subject: *Ahiru.*
 ‘A duck.’
- Experimenter: *Soone, zya, kore kara, usi-to ahiru de watasi-ga iu koto, yattemite-ne.*
 ‘Good, then, please play with the cow and the duck as I say.’
- “Usi-o ahiru-ga oikaketa.” (= (12c))*
 ‘The cow, the duck chased.’
- Nani-ga okita kana?*
 ‘What happened?’
- Subject: <The subject manipulates the toy animals on a table.>
- Experimenter: *Yoku dekita ne!*
 ‘Excellent!’

We consider the subject's response correct in this example if he/she picks up the duck and make it chase the cow.

3.2. The results and discussions

The results of this experiment are shown in (14). The numbers in the columns of "Active", "Scrambling" and "Passive" indicate the percentage of correct performance for each type of the test sentences.

(14) *Table 1.*

Subject	Age (years)	Active (%)	Scrambling (%)	Passive (%)
A	2	83	83	50
B	2	83	66	17
C	3	100	100	100
D	3	100	100	28
E	3	100	100	42
F	3	28	42	0
G	3	71	71	28
H	3	100	85	57
I	4	100	100	0
J	4	100	100	71
K	4	100	100	42
L	4	100	100	85
M	4	100	100	100
N	4	100	100	100
O	5	100	100	100
P	5	100	100	100
Q	5	100	100	100
R	5	100	100	100
S	5	100	100	100
T	5	100	100	100
U	6	100	100	100
V	6	100	100	100
W	Adult	100	100	100
X	Adult	100	100	100

These results confirm the conclusion of Murasugi (2000) and show two facts. First, when we compare the columns “active” and “scrambling,” we notice that those who interpret active sentences correctly get high percentage of correct answers also in scrambling. For example, Subject A, who is two years old, interpreted 83% of the active sentences correctly and assigned correct interpretation to the same number of scrambled sentences. This fact suggests that the acquisition of scrambling can be as early as the acquisition of the basic sentences. Second, a significant difference is observed between the columns “scrambling” and “passive.” 2–4 year-old children almost always performed better for scrambled sentences than for passives. At the age of 3–4, children understand the predicate-argument relation of scrambled sentences but show mixed results with passives.

The results obtained here are consistent with Otsu (1992), who showed that children’s knowledge of scrambling surfaces when appropriate discourse contexts are provided. But since no explicit discourse sentences were given in our experiment, the results also suggest that the relevant factor is probably just “attention.” We speculate that the inclusion of passives in the test sentences made the children pay more attention to the relation between Case particles and θ -roles, and that this is the main reason they performed so well with the scrambled sentences. Whatever the precise reason may be, the results indicate that the knowledge of scrambling is acquired much earlier than generally assumed. Even 2 year-old children interpreted scrambled sentences correctly, or more precisely, their performance with scrambled sentences was as good as their performance with non-scrambled basic sentences.

Borer and Wexler (1987), Sugisaki (1997), and others have already observed that verbal passives are acquired at a later stage of grammar acquisition. There are three possible reasons for this delay. The first possibility, argued for in Borer and Wexler (1987) and Sugisaki (1997), is that A-chain matures and accordingly, the acquisition of A-movement takes time. The second possibility is that passive involves complex morphology, and complex predicates in general take time to be acquired. The third possible reason for the children’s failure with passive in experiments is that passive sentences do not conform to the “canonical sentence pattern.” (Bever 1970; de Villiers and de Villiers 1973).

Our findings show that the third possibility cannot be the whole story. If this was the only source of the difficulty, then children should have problems with passive and scrambled sentences in the same way because neither conforms to the “canonical sentence pattern.” Since scrambling is clearly

easier than passive for the children, the difficulty with passive is likely to be due to the property of movement or the complex morphology. Further discussion is given on this point in Section 5.

In the following section, we report the second experiment. We demonstrate that the children who correctly interpret the predicate-argument relations of scrambled sentences actually possess knowledge of the reconstruction property of scrambling.

4. Experiment 2

4.1. The test sentences and the method

This experiment tests the Japanese-speaking children's knowledge of the reconstruction property of scrambling. The test sentences include those in (15).

- (15) a. *Ahiru-ga usi -o [zibun-no niwa -de] oikaketa.*
 duck -NOM cow-ACC self -GEN garden-at chased
 'The duck chased the cow at the garden of himself.'
- b. *Usi -o_i [zibun-no niwa -de]_j ahiru-ga t_j t_i oikaketa.*
 cow-ACC self -GEN garden-at duck -NOM chased
 'The cow, at the garden of himself, the duck chased.'

The purpose of this study is to examine whether those children who assign the correct predicate-argument structures to scrambled sentences have indeed acquired scrambling as a movement operation. It is logically possible that those children have some sort of "linking rules" connecting Case and θ -roles and have not yet acquired scrambling. It is therefore important to investigate whether those children have knowledge of the properties of scrambling. As an initial step toward this goal, we designed an experiment around the reconstruction property of scrambling.

(15b) is the test sentence that checks the children's knowledge of the reconstruction property of scrambling. Children's performance on sentences like this one is significant only if they interpret simple scrambled sentences as in (16) correctly.

- (16) *Usi -o_i ahiru-ga t_i oikaketa.*
 cow-ACC duck -NOM chased
 'The cow, the duck chased.'

This was tested in Experiment 1. It is also necessary to check if the children have acquired the lexical and syntactic properties of the anaphor *zibun*. If not, they would fail to assign the correct interpretation to (15b) even if they know the reconstruction property of scrambling. (15a) serves this purpose. *Zibun* not only requires a c-commanding antecedent but also is subject-oriented. Hence, if the children's grammar is the same as the adults', they will take *ahiru* 'duck', and not *usi* 'cow', as the antecedent of *zibun* in (15a). The question is whether those children who assign correct interpretations to (16) and (15a) apply reconstruction and understand *ahiru* 'duck' to be the antecedent of *zibun* in (15b).

We also included in the test sentences passives like the following, where *zibun* refers unambiguously to the surface subject:

- (17) [*Kuma-ga*]_i *usagi-ni zibun-no niwa -de t_i oikakerareta.*
 bear -NOM rabbit-by self -GEN garden-at was-chased
 'The bear was chased by the rabbit at the garden of himself.'

The purpose was to make children pay more attention to the relation of Case particles and θ -roles, on the assumption that this was indeed a relevant factor in Experiment 1, and to examine the acquisition of passives further. Thus, our test sentences consist of regular active sentences as in (15a), scrambled sentences as in (15b) and passive sentences as in (17), all with *zibun*. 20 sentences including 6 regular actives, 6 passives and 8 scrambled were presented to the subjects in random order.

The experimental technique we employed was again act-out. The subjects and the experimental set-up were the same as those in Experiment 1. The 22 subjects included 2 two-year-olds, 6 three-year-olds, 6 four-year-olds, 6 five-year-olds, and 2 six-year-olds. 2 adults were tested for control. This time, a house and a garden were prepared for each toy animal. Before each test sentence was presented, the experimenter picked up the relevant toy animals and their houses, and put them on the table for the session. The subjects were asked to demonstrate the meaning of the test sentence by manipulating the toy animals in the appropriate house or garden.

The protocol for the test sentence (15b) is shown in (18).

- (18) Experimenter: *Ahiru-wa dore?*
 ‘Which is the duck?’
- Subject: *Kore.*
 ‘This.’ <The subject picks up the duck.>
- Experimentor: *Usi -wa dore?*
 ‘Which is the cow?’
- Subject: *Kore.*
 ‘This.’ <The subject picks up the cow.>
- Experimentor: *Kotti-ga usi -no niwa ne.*
 ‘Here is the cow’s garden.’
 <The experimenter points to the cow’s garden.>
- Kotti-ga ahiru-no niwa ne.*
 ‘Here is the duck’s garden.’
 <Experimenter points to the duck’s garden>
- Experimentor: *Zya, kore kara, watasi-ga iu koto, yattemite-ne.*
 ‘Now, please act-out what I say.’
- “Usi-o zibun-no niwa-de ahiru-ga oikaketa.” = (15b)*
 ‘The cow, in self’s garden the duck chased.’
- Subject: <The Subject manipulates the toys on the table.>
- Experimentor: *Yoku dekita ne!*
 ‘Good job!’

If the subject makes the duck chase the cow in the duck’s garden, the performance is judged to be correct.

4.2. The results and discussion

The results of Experiment 2 are shown in (19). The first two columns give information on the subjects, and the results of Experiment 1 are repeated in the next three columns. The last three columns show the results of the present experiment.

(19) Table 2.

Subject	Age (year)	Exp. 1: Active (%)	Exp. 1: Scrambling (%)	Exp. 1: Passive (%)	Exp. 2: Active (%)	Exp. 2: Scrambling (%)	Exp. 2: Passive (%)
A	2	83 %	83 %	50 %	0 %	NT	NT
B	2	83	66	17	0	NT	NT
C	3	100	100	100	100	100	50
D	3	100	100	28	100	100	33
E	3	100	100	42	100	100	16
F	3	28	42	0	50	38	16
G	3	71	71	28	66	50	50
H	3	100	85	57	83	87	50
I	4	100	100	0	100	100	33
J	4	100	100	71	100	100	33
K	4	100	100	42	66	75	16
L	4	100	100	85	83	87	33
M	4	100	100	100	100	100	33
N	4	100	100	100	100	100	50
O	5	100	100	100	100	100	100
P	5	100	100	100	100	100	100
Q	5	100	100	100	100	100	100
R	5	100	100	100	100	100	100
S	5	100	100	100	100	100	33
T	5	100	100	100	100	100	50
U	6	100	100	100	100	100	100
V	6	100	100	100	100	100	50
W	Adult	100	100	100	100	100	100
X	Adult	100	100	100	100	100	100

Three observations can be made from these results. First, neither of the two-year old children (A and B) could interpret the regular active sentences when the anaphor *zibun* was added. This indicates that children do not yet know the lexical and syntactical property of *zibun* at age 2. This is the reason the tests for scrambled sentences and passives could not be meaningfully pursued and we have “NT” in the result columns. On the other hand, some of the

three-year-old subjects clearly know the properties of *zibun*, though others still show mixed results. It seems then that the properties of the anaphor *zibun* are acquired around three or four years old.

Secondly and most importantly for our purpose, the results indicate that those who interpret the predicate-argument relation of scrambled sentences correctly are also successful in the interpretation of scrambled sentences with *zibun*. Let us consider the three-year-old subjects C, D and E, and the four-year-old subjects I, J, M and N, who were perfect in the scrambling test in Experiment 1. In Experiment 2, they had no problem finding the antecedent of *zibun* in scrambled sentences. Hence, we conclude that the subjects who assign correct interpretation to simple scrambled sentences have knowledge of the reconstruction property of scrambling. The results of the other 3–4 year olds, F, G, H, K and L, do not contradict this conclusion. K and L, for example, were perfect with the scrambled sentences in Experiment 1, but had difficulty with the interpretation of *zibun* in regular active sentences in Experiment 2. This suggests that they have not perfectly acquired the properties of *zibun*, and that this is the source of the difficulty with the scrambled sentences with the anaphor. It is quite possible that they have knowledge of the reconstruction property of scrambling.

Third, we again observe a difference between scrambling and passive. In this experiment too, no subject did better with passive than with scrambling. The subjects C, M, N, S, T and V showed particularly interesting results. They were perfect in Experiment 1, and had no problem with the interpretation of *zibun* in regular active or scrambled sentences. Yet, they had difficulty with passive sentences containing *zibun*. We will offer a possible explanation for this interesting pattern in the following section.

5. Summary and further remarks on the acquisition of Passive

In this paper, we reported the results of two experiments on the acquisition of Japanese scrambling. The first experiment showed that scrambling is acquired much earlier than generally assumed, even at age 2. In fact, it was impossible to differentiate children's performance on scrambled and non-scrambled sentences. We suspect that this result was obtained because we made the children pay attention to the relation between Case particles and θ -roles by mixing passives in the test sentences. It turned out that there were 3–4 year olds who were perfect with scrambling but had difficulty with passive. This clearly indicates that scrambling is acquired earlier than passive.

In the second experiment, we used sentences with the anaphor *zibun* to test children's knowledge of the reconstruction property of scrambling. Those who were successful with the interpretation of simple scrambled sentences and the interpretation of *zibun* in active non-scrambled sentences showed perfect performance with scrambled sentences containing *zibun*. This suggests that children not only can properly interpret simple scrambled sentences but actually know the properties of scrambling as a movement operation from a very early age. The experiment has also indicated that the properties of *zibun* is acquired around 3–4.

The difference between scrambling and passive was striking in both experiments. This highlighted the early acquisition of scrambling, the main conclusion of this paper. But it also poses an interesting question on the acquisition of passive: why is it that the acquisition of passive is delayed? We would like to give some remarks on this question before we conclude this paper. We will discuss the reason for the late acquisition of passive, and also the curious result in the second experiment, i.e., some children had difficulty only with passive sentences that contain *zibun*.

In the discussion on Experiment 1 in Section 3, we argued that the late acquisition of passive cannot be due to the canonical sentence strategy but must be due to the complex morphology or the A-movement. There are important works that directly address this issue. Among them are those works that entertain the A-chain maturation hypothesis, e.g., Borer and Wexler (1987), Schaeffer (1995), Sugisaki (1997) and Sugisaki and Isobe (2001). Borer and Wexler (1987), briefly mentioned above, propose the maturation hypothesis based on the acquisition study of English and Hebrew. In both English and Hebrew, the same passive morpheme is used in adjectival passive and verbal passive. The syntactic difference between them is in the existence of A-movement: adjectival passive does not involve A-movement while verbal passive does. Borer and Wexler observe a delay in the acquisition of verbal passive, and suggest that it is due to the delay in the acquisition of A-chain, which requires a certain degree of biological development, that is, maturation.

Even more directly relevant is Sugisaki's (1997) work on the acquisition of Japanese passives. Japanese actually has two types of passives, direct and indirect. The former contains a gap as in English passives, but the latter does not. Examples of each type are shown in (20).

- (20) a. *John_i-ga Mary_j-ni zibun_{i/*j}-no heya -de t_i nagur-are -ta.*
 -NOM -by self -GEN room-at hit -passive-PAST
 ‘John was hit by Mary in self’s room.’
- b. *John_i-ga Mary_j-ni zibun_{i/j}-no heya-de kodomo-o nagur-are -ta.*
 -NOM -by self -GEN room-at child -ACC hit-passive-PAST
 ‘John is such that his child was hit by Mary in self’s room.’

Since Kuno (1973), it has been standard to analyze direct passives as involving NP-movement to the subject position. (See also Saito (1982), Hoshi (1995). See Kuroda (1965), Kitagawa and Kuroda (1992) for a contrary view.) On the other hand, in indirect passives, the passive morpheme is assumed to be a higher predicate taking a sentential complement. One piece of evidence for this can be seen in (20b), where the subject-oriented anaphor *zibun* has two potential antecedents, indicating that the sentence contains two subjects. No movement is involved in the derivation of indirect passives.

Sugisaki reports that for children, indirect passives are easier to comprehend than direct passives. Since there is no notable difference in the morphological complexity between the two types of passives, he concludes that A-movement is the source of the delay in the acquisition of direct passives. Since the passive sentences tested in our experiments are all direct passives, his proposal accounts for our data as well.

Further evidence for the A-chain maturation hypothesis is presented in Sugisaki and Isobe (2001). Tada (1993) investigates the typology of Japanese scrambling, and shows that scrambling to the sentence-initial position can be A'-movement while VP-internal scrambling is strictly A-movement. Thus, a contrast is observed between (21b) and (22b).

- (21) a. *Taroo-to Hanako-ga otagai -o hihansita (koto)*
 -and -NOM each other-ACC criticized fact
 ‘Taroo and Hanako criticized each other.’
- b. *Otagai -o_i Taroo-to Hanako-ga t_i hihansita (koto)*
 each other-ACC -and -NOM criticized fact
- (22) a. *Yamada-ga Taroo-to Hanako-ni otagai -o syookaisita (koto)*
 -NOM -and -to each other-ACC introduced fact
 ‘Yamada introduced Taroo and Hanako to each other.’
- b. **Yamada-ga otagai -o_i Taroo-to Hanako-ni t_i syookaisita (koto)*
 -NOM each other-ACC -and -to introduced fact

It is possible to scramble the anaphor *otagai* 'each other' across its antecedent to the sentence-initial position as in (21b). The result is a case of reconstruction typically observed with A'-movement. On the other hand, (22b) shows that VP-internal scrambling of the anaphor across its antecedent yields an ungrammatical sentence. If this type of scrambling is strictly A-movement, the example is ruled out by Condition (C) of the binding theory.

Sugisaki and Isobe examine the acquisition of these two types of scrambling using test sentences such as those in (23).

- (23) a. *John-ga Mary-ni sono hon -o ageta.*
 -NOM -DAT that book-ACC gave
 'John gave that book to Mary.'
- b. *Mary-ni_i John-ga t_i sono hon -o ageta.*
 -DAT -NOM that book-ACC gave
- c. *John-ga sono hon -o_i Mary-ni t_i ageta.*
 -NOM that book-ACC -DAT gave

Using truth-value judgment task, they observe that 4 year-old children (mean age 4;2) cannot interpret sentences that involve VP-internal scrambling while they have no problem with scrambling to the sentence-initial position. Given Tada's analysis, this indicates that A-scrambled sentences are more difficult for children to comprehend than A'-scrambled sentences. Thus, it seems that the acquisition of A-movement takes more time than that of A'-movement. Sugisaki and Isobe, in fact, interpret the acquisition data as supporting evidence for the A-chain maturation hypothesis.

If we accept the A-chain maturation hypothesis, the difference between scrambling and passive observed in our experiments is automatically accounted for. As noted above, the passive sentences we tested are all instances of direct passive. On the other hand, the scrambling examples in our experiments all involve scrambling to the sentence-initial position, and hence, can be A'-scrambling. Thus, our results confirm that A-movement is acquired later than A'-movement. The early acquisition of A'-scrambling observed in our first experiment shows that the discrepancy between A-movement and A'-movement in acquisition is quite large.

Our second experiment in fact suggests that the discrepancy is in fact even larger than the first experiment indicates. Recall that there were six 3-6 year olds (C, M, N, S, T and V) who had no problem with scrambled or passive sentences in Experiment 1 and with the interpretation of *zibun* in

regular active or scrambled sentences in Experiment 2, but had difficulty with passive sentences containing *zibun*. This includes three of the eight 5-6 year-old subjects. In the act-out, the incorrect performances they showed included “mistakes” with the antecedent of *zibun*. Let us consider one of the test sentences in (24).

- (24) *Kuma-san-ga_i Usagi-san-ni zibun-no niwa -de t_i oikaker-are -ta.*
 bear -NOM rabbit -by self -GEN garden-at chase-passive-PAST
 ‘The bear was chased by the rabbit at self’s garden.’

Since this is a direct passive sentence, the antecedent of *zibun* has to be *kuma-san* ‘bear’, according to the adult grammar. However, some children acted out the situation in which the rabbit chased the bear in the rabbit’s garden, not in the bear’s garden.

This type of incorrect performance makes perfect sense if the children construed (24) not as direct passive but as indirect passive. This is so because as we have seen above, the *by*-phrase qualifies as the antecedent of *zibun* in indirect passives. If this is correct, then for those children, the “direct passive sentences” in the experiments do not involve movement but are generated with *pro* in the object position. The structure they assign to “direct passives” makes observable difference in the act-out only when the test sentence contains *zibun*. But our hypothesis implies that those children failed to construe direct passive with movement even in Experiment 1, despite their correct performances.

If this conclusion is correct, our experiments have shown not only that children know A’-scrambling earlier than generally assumed, but also that direct passives with A-movement are acquired later than simple observation would suggest. This seems to provide further support for the A-chain maturation hypothesis. However, it actually raises a question for the analysis of the delayed acquisition of Japanese passives based on it. Would it be reasonable to suppose that A-chains take so long to mature? The answer seems negative and this brings us back to the account in terms of morphological complexity. In indirect passives, the morpheme *-rare* is a verb, but in direct passives, it is a suffix that affects the argument structure of the root verb. It is reported in Murasugi and Hashimoto (2004) that Japanese-speaking children indeed have initial problems with the verbal suffixes that derive transitives from unaccusatives. And the function of the passive morpheme *-rare* can be far more complex. It is shown in Kuroda (1979) and Hoshi (1995), for example, that *-rare* not only absorbs the external theta-role and the objective Case of the root verb but at the same time assigns an experiencer

role to the subject in the construction called 'ni direct passives'. The much delayed acquisition of direct passives reported in the present study, then, suggests that A-chain maturation is probably not the sole reason for the delay but other factors such as the complex function of the passive morpheme play some role as well.

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Scrambling and information focus: VSO-VOS alternation in Tongan

Yuko Otsuka

Scrambling has traditionally been considered to be an instance of optional movement, and for that reason, scrambling phenomena have drawn particular attention within the framework of Minimalist Program (Chomsky 1993 and subsequent work). Based on the observation that scrambling usually does not have any semantic effect, Saito (1989) argues that it should be understood as a semantically vacuous operation. Such a view, however, is problematic given the minimalist tenets, according to which, movement must be feature-driven in compliance with Last Resort (Chomsky 1995, 2000). Thus, the Minimalist Program forbids optional movement of any kind. Yet, the scrambling facts exist and call for some explanation.

In this chapter, we examine VSO-VOS alternation in Tongan. The two types of constituent order freely alternate in Tongan. The phenomenon, therefore, can be seen as an instance of scrambling. However, VSO-VOS alternation does seem to have some effect on interpretation, albeit a subtle one. Some have proposed that VOS order in Tongan is interpreted as passive (Churchward 1953; Lynch 1972). In this study, I argue against the passive analysis of VOS in Tongan and propose that VOS order in Tongan should be understood as an instance of scrambling. The proposal put forward in this chapter is as follows. First, scrambling in Tongan is a feature-driven movement in compliance with the economy principles. The movement in question is licensed by two features on T: the EPP-feature and a discourse-based feature, information focus.

The current proposal is largely inspired by Miyagawa's (2000, 2003) analysis of A-scrambling in Japanese as EPP-driven movement to [Spec, T], but it differs from Miyagawa's analysis in that it associates movement to [SpecTP] with information focus. This additional hypothesis turns out to have a significant implication concerning the Mapping Hypothesis (MH) proposed by Diesing (1992). The proposed information focus movement clearly does not conform to the MH. It forces an indefinite NP to move out of the VP, whereas the MH requires that definite NPs move out of the VP

in order to escape existential closure. This apparent contradiction is resolved if we allow for some kind of division of labor between phonology and syntax. Namely, when a particular feature is realized phonologically, that feature does not invoke any syntactic operation. In Tongan, definiteness is marked only phonologically and therefore, syntactic constraints associated with definiteness become irrelevant. It turns out that focus has similar effect with respect to the MH in languages like English, where focus is phonologically realized by means of stress.

The organization of this chapter is as follows. Section 1 reviews some previous analyses of scrambling within the minimalist framework. In section 2, we examine the properties of VOS constructions in Tongan and show that VOS order in Tongan arises as a result of A-movement. In section 3, the EPP-based analysis of scrambling (Miyagawa 2000, 2003) is discussed in relation to VOS order in Tongan. In section 4, we consider the relation between information focus and VOS order and propose that information focus is another factor that motivates scrambling in Tongan. Scrambling of PPs is discussed in section 5. It will be shown that scrambling of PP does not raise any problem for the EPP-based analysis of scrambling if we assume, along with Collins (1997), that EPP-feature checking allows a preposition to be pied-piped. In section 6, some residual issues are discussed. In particular, it will be shown that the MH (Diesing 1992) is effective only when definiteness is realized solely morphologically. Section 7 concludes the chapter.

1. Scrambling in the Minimalist framework

Approaches to scrambling that attempt to reconcile the minimalist tenets and this apparent optional movement roughly fall into five types.¹ First is to claim that “scrambled” sentences are not a result of movement. Rather, a “scrambled” NP is taken to be base generated in a non- θ position and receives θ -role later either by lowering into a θ -position at LF (Bošković and Takahashi 1998) or through Case checking (Fanselow 2001).²

The second approach is to claim that scrambling does involve optional movement, but that optional movement is permissible as long as it does not violate the economy principles (Fukui 1993, Saito and Fukui 1998).³ To grossly simplify, the idea is that a grammatical operation that creates a structure consistent with the parameter value is costless. Thus, in head final languages such as Japanese and Korean, leftward adjunction is costless and

may freely apply without violating the economy principles. Similarly, in head initial languages such as English, rightward adjunction such as heavy NP shift is costless and hence, may freely apply.

The third approach is to assume that scrambling is not optional, but feature-driven. There are two subgroups in this approach. One claims that the relevant feature is [+scr(amble)] which optionally appears on XPs (Grewendorf and Sabel 1999; McGinnis 1999; Müller 1997). The other argues that (A-)scrambling is triggered by the EPP feature (Bailyn 2003; Miyagawa 2001, 2003).

The fourth view is to consider scrambling to be semantically motivated obligatory movement (Collins and Thrainsson 1996; Takano 1998; Vikner 1994). Based on the observation that the object undergoing “optional” object shift must be definite, it has been proposed that the movement in question is in fact obligatory in order for the NP to escape the domain of existential closure, which is claimed to be VP by Diesing (1992).⁴

Finally, there is also a view in which scrambling is taken to be motivated by prosody. This approach is put forward by Zubizaretta (1998). In this approach, scrambling is taken to be a last resort prosodically motivated operation in order to generate a structure that is compatible with the corresponding discourse/information structure. Specifically, it is claimed that subject postposing in Romance occurs when the subject is a (information) focus due to prosody-related constraints such as the Nuclear Stress Rule and the Focus Prominence Rule. A similar approach is taken by Bailyn (2003) and Reinhart (1997) for Russian and Dutch, respectively.

Except for the second approach, all of the above proposals are intended to eliminate the problematic assumption that scrambling is an optional movement. It is the direction that the current study takes. Scrambling is not an optional operation, but abides by the economy principles and hence, must be feature driven just like any other movement operations. Specifically, I argue that scrambling in Tongan should be understood as an instance of A-movement triggered by T's EPP feature, along the lines of Miyagawa (2001, 2003). Unlike Miyagawa, however, I propose that there is another factor that is necessary for licensing the relevant movement, that is, information focus in the sense of Kiss (1998). I will take up this point in section 4. In the following section, we discuss the properties of VOS constructions in Tongan to establish the fact that VOS order arises as a result of A-scrambling.

2. VOS constructions in Tongan

Tongan is a VSO language with ergative Case marking. Absolutive (ABS) NPs are marked by 'a and ergative (ERG) NPs are marked by 'e.^{5,6}

- (1) a. *Na'e kata 'a e fefine.*
 PST laugh ABS DEF woman
 'The woman laughed.'
- b. *Na'e kai 'e he fefine 'a e ika.*
 PST eat ERG DEF woman ABS DEF fish
 'The woman ate the fish.'

While the unmarked order is VSO, Tongan also freely permits VOS sentences.

- (2) a. *Na'e fili 'e Sione 'a Pila.*
 PST choose ERG Sione ABS Pila
 'Sione chose Pila.'
- b. *Na'e fili 'a Pila 'e Sione.*
 PST choose ABS Pila ERG Sione
 'Sione chose Pila.'

Native speakers' intuition is that there is no semantic difference between the two when used in isolation. In this respect, the alternation between VSO and VOS resembles scrambling. It should be noted, however, that native speakers do distinguish the two constructions in terms of new information focus. We will return to this point in Section 4.

2.1. VOS and passive interpretation

Churchward (1953) observes that the contrast between VSO and VOS in Tongan is parallel to that between active and passive voice in English. Note that Churchward's claim is not that VOS is a passive construction. Rather, he claims that the effect of VOS order is similar to that of passive in that the emphasis is on the object rather than the subject. On the other hand, Lynch (1972) proposes that VOS construction is syntactically passive. Otsuka (2003a) argues against the passive analysis of VOS in Tongan,

showing that the NP immediately following the verb in VOS, e.g., *Pila* in (2b) does not show syntactic properties of subjects. In Tongan, subjects (i.e., A and S in Dixon's (1979) terms), whether ABS or ERG, show properties distinct from those of direct objects (Dixon's O) with respect to a) the use of clitic pronouns, b) control constructions, and c) the use of possessive pronouns.

First, clitic pronouns can occur only as subjects (3a-b), but not objects (3c). A pronominal object must be realized as an independent pronoun (3d). Clitic pronouns in Tongan appear between the tense marker and the verb, rather than the regular post-verbal subject position.

- (3) a. *Na'a ke 'alu ki ai.*
PST 2.S go to there
'You went there.'
- b. *Na'a ke fili 'a Pila.*
PST 2.S choose ABS Pila
'You chose Pila.'
- c. **Na'a ke fili 'e Sione.*
PST 2.S choose ERG Sione
Intended meaning: 'Sione chose you.'
- d. *Na'e fili 'e Sione 'a koe.*
PST choose ERG Sione ABS 2.S
'Sione chose you.'

As shown in (3a), a pronominal subject in an intransitive construction occurs as a clitic. Thus, if the ABS-marked argument in VOS were in fact the subject, we would expect a construction similar to (3a) when the relevant argument is pronominal. The following example argues against this hypothesis.

- (4) **Na'a ke fili 'e Sione.*
PST 2.S choose ERG Sione
Intended meaning: 'You were chosen by Sione.'

The fact that (4) is ungrammatical suggests that the ABS argument of a VOS construction does not count as a subject as far as the use of clitic pronouns is concerned.⁷

Secondly, PRO is only licensed in subject position, not in object position. I assume that the embedded clause in control constructions such as (5) below contains a phonetically null argument PRO that is coreferential with an argument of the matrix verb.⁸

- (5) a. *John_i wants [PRO_i to go].*
 b. *John persuaded Mary_i [PRO_i to go].*

The question is whether VOS can occur in a control construction with PRO in place of the ABS-marked argument. If such a construction is permissible, then the ABS-marked argument in a VOS construction should be considered to be the subject. As illustrated in (6) below, however, PRO cannot occur in place of the ABS-marked argument in VOS constructions.

- (6) **'Oku loto 'a Pila [ke fili PRO 'e Sione].*
 PRS want ABS Pila to choose ERG Sione
 Intended meaning: 'Pila wants to be chosen by Sione.'

The ungrammaticality of (6) is straightforwardly explained if we assume that PRO occurs as the object and that the intended meaning is "Pila wants Sione to choose PRO."^{9,10} To conclude, the Control data also show that the ABS-marked argument in VOS is not the subject.

Finally, let us consider the use of possessive pronouns. Tongan has two sets of possessive pronouns, alienable (*'e*-class) and inalienable (*ho*-class). When an alienable possessive pronoun precedes a nominalized verb, it refers to the subject of the verb. In contrast, an inalienable possessive pronoun preceding a verb refers to the object. Thus, inalienable possessive pronouns cannot occur with an intransitive verb.¹¹ See (7) below. As illustrated in (7a, b), the subject of an intransitive verb must be represented by an alienable possessive pronoun. (7c) shows that when used with a transitive verb, an alienable possessive pronoun refers to the subject. In contrast, (7d) shows that an inalienable possessive pronoun must refer to the object when used with a transitive verb.

- (7) a. *'ene foki*
 ALIEN.POSS.3.S return
 'his returning'
 b. **hono foki*
 INALIEN.POSS.3.S return

- c. *'ene* *taki*
 ALIEN.POSS.3.S lead
 'his leading (someone)'
- d. *hono* *taki*
 INALIEN.POSS.3.S lead
 'his being led (by someone)'

ABS-marked NPs in VOS constructions behave like objects rather than subjects in this respect: nominalization of VOS can only involve alienable possessive pronouns. Consider (8) below.

- (8) a. **'ene* *fili* *'e* *Sione*
 ALIEN.POSS.3.S choose ERG Sione
 Intended meaning: 'his being chosen by Sione'
- b. *hono* *fili* *'e* *Sione*
 INALIEN.POSS.3.S choose ERG Sione
 'his being chosen by Sione'

In (8a) the alienable possessive pronoun is intended to refer to the internal argument, corresponding to the ABS-marked subject of a passive construction. The phrase is ungrammatical, however, for it contains two subjects: *'ene* and *Sione*. This suggests that *'e*-marked argument in a VOS construction is indeed ERG rather than OBL. Nominalization of the VOS construction in (2b) is (8b), in which the ABS-marked argument is replaced by an inalienable possessive pronoun. This suggests that the argument in question is considered to be the direct object rather than the subject.

2.2. VOS as A-scrambling

We have seen that VOS constructions in Tongan are not syntactically passive, for the ABS-marked argument in a VOS construction does not show any of the subject properties. In this section, I argue that VOS order in Tongan should be understood as an instance of A-scrambling.

Mahajan (1990) observes that there are two kinds of scrambling: one that has the properties of A-movement and the other showing the properties of A-bar movement. Thus, A-scrambling a) must be local, b) does not license a parasitic gap, c) changes binding relations, d) avoids weak crossover vio-

lations, and e) is relevant to Case. In contrast, A-bar scrambling a) can be long distance, b) licenses a parasitic gap, c) does not affect binding relations, d) induces weak crossover effects, and e) is not relevant to Case. In this section, we examine VOS constructions in Tongan in terms of these conditions. It will be shown that VOS constructions demonstrate the properties of A-movement. Of the five properties, licensing of a parasitic gap is hard to test in Tongan for the following reasons. First, Tongan freely permits argument drop as long as it is third person singular and its reference has been established in the discourse. Second, non-human, third person pronouns are phonetically null in this language. Thus, it is impossible to determine whether the empty category is a parasitic gap, an instance of argument drop, or a phonetically null third person pronoun. Therefore, below only four of the above phenomena are discussed: a) locality, b) weak crossover, c) binding, and d) Case relatedness.

2.2.1. *Locality*

First, Long-distance scrambling of the object is not permitted. The movement is clause-bound, showing a property of A-movement. See (9) below.¹²

- (9) a. *'Oku tui 'e Mele [na'e fili 'a Pila_i 'e Sione_i]*
 PRS believe ERG Mele PST choose ABS Pila ERG Sione
 'Mele believes that Sione chose Pila.'
- b. **'Oku tui 'a Pila_i 'e Mele [na'e fili 'e Sione t_i]*
 PRS believe ABS Pila ERG Mele PST choose ERG Sione
 Intended meaning: 'Mele believes that Sione chose Pila.'

2.2.2. *Weak crossover*

Second, VOS construction is not subject to weak crossover effects, again showing a property of A-movement rather than A-bar movement. See (10a) below.

- (10) a. *Na'e fili 'a e taha kotoa_i 'e he'ene_i tamai t_i.*
 PST choose ABS DEF one every ERG his father
 'His_i father chose everyone_i.'

- b. **Ko hai_i [OP_i [na'e fili 'e he'ene_i tamai t_i]]?*
 PRED who PST choose ERG his father
 'Who_i did his_i father choose?'

Note that Tongan generally shows weak crossover effects, as illustrated in (10b). (10b) is a cleft construction, in which the null operator OP has moved from the object position to [SpecCP]. It is ungrammatical due to the weak crossover effect, as the trace of OP is coindexed with a pronoun to its left. The fact that coindexation is possible in (10a) suggests that the trace in question is not a result of A-bar movement.

2.2.3. Binding

The binding facts are a little tricky, for Tongan does not have a set of reflexive pronouns. The same form can be interpreted as either pronominal or anaphoric. When a pronoun is used as an anaphor, it is often accompanied by an adverb *pē* "only". However, the presence of *pē* does not necessarily induce the reflexive interpretation. In (11) below, for example, the third person singular pronoun *ia* can either be coreferential with or disjoint from the subject *Sione*.

- (11) *Na'e fili 'e Sione_i 'a ia_{ij} pē.*
 PST choose ERG Sione ABS 3.S only
 'Sione chose him/himself.'

Having said that, the interpretation of a pronoun is not completely free from constraints. Consider (12) below.

- (12) *Na'e fili 'e ia_i pē 'a Sione_{i*/j}.*
 PST choose ERG 3.S only ABS Sione
 'He/*himself chose Sione.'

If the pronoun c-commands the referential expression, the reflexive interpretation is not available: *ia* in (12) can only be interpreted as someone other than *Sione*, presumably due to the Principle C violation (Chomsky 1981). Note that I assume that Tongan has obligatory V-to-C movement and that in the regular VSO construction ERG-marked NPs are in [SpecTP] and ABS-marked NPs, in [V, NP]. As for VOS constructions, I assume that

the ABS-NP is in [SpecTP] and the ERG-NP, in [SpecvP] where it is base-generated.

Now, the question is whether scrambling has any effect on binding relations in Tongan. If it does, it gives support to our hypothesis that scrambling in Tongan is an instance of A-movement. Let us consider (13).

- (13) a. *Na'e fili 'a ia_i pē 'e Sione_{i*/j} t_i.*
 PST choose ABS 3.S only ERG Sione
 'Sione chose him/*himself.'
- b. *Na'e fili 'a Sione_i 'e ia_{i*/j} pē t_i.*
 PST choose ABS Sione ERG 3.S only
 'He/*himself chose Sione.'

These two sentences presents two contradictory facts. On the one hand, (13a) shows that scrambling of a pronominal object affects the binding relation. Compare (13a) with the unscrambled construction (11), where the pronoun can be coreferential with the c-commanding NP. In (13a), coreference is prohibited for the same reason as in (12): violation of Principle C, for *Sione* would be bound by *ia*. If scrambling in (13a) would be A-bar movement, the pronoun should reconstruct in its base position, yielding (11) at LF. Then, (13a) should be grammatical. (13a) is not grammatical, however, suggesting that there is no reconstruction and that (short) A-bar scrambling is not available in Tongan. On the other hand, (13b) shows that scrambling does not affect binding relation: although the pronoun is c-commanded by the scrambled object *Sione*, coreference is impossible. It seems that the Principle C violation is retained.

How can we make sense of this situation? We may make a generalization that the interpretation of a pronoun in Tongan is subject to two constraints: a) the Binding Principles and b) the antecedent must bear ERG. The latter is a language-specific constraint. This can be taken as a manifestation of syntactic ergativity, which Tongan is known to exhibit in various syntactic operations such as relativization and coordination (Otsuka 2000, 2002b, 2005).¹³ In (13a), the potential antecedent *Sione* is ERG. Binding is impossible, however, due to the Principle C. In (13b) as well as (12), it is the pronoun that bears ERG. The prohibition on ABS antecedents overrides the binding condition (i.e., the c-command requirement), rendering these sentences ungrammatical. Although the binding facts are not as conclusive as those concerning locality and weak crossover, I take (13a) as evidence for A-movement.

2.2.4. Case-relatedness

Finally, the landing site of scrambling in Tongan apparently is not associated with a particular Case. So far, we have restricted our attention to the transitive constructions and the alternation between VSO and VOS. However, such an alternation is not limited to transitive constructions. Although the default order is one in which the subject NP precedes the PP, the order in which NPs and PPs appear in intransitive constructions and middle constructions is also flexible, as illustrated in (14) and (15), respectively.^{14,15}

- (14) a. *Na'e 'alu 'a Sione ki Tonga.*
 PST go ABS Sione to Tonga
 'Sione went to Tonga.'
- b. *Na'e 'alu [ki Tonga]_i 'a Sione t_i.*
 PST go to Tonga ABS Sione
 'Sione went to Tonga.'
- (15) a. *Na'e sio 'a Sione ki he faiako.*
 PST see ABS Sione to DEF teacher
 'Sione saw the teacher.'
- b. *Na'e sio [ki he faiako]_i 'a Sione t_i.*
 PST see to DEF teacher ABS Sione
 'Sione saw the teacher.'

As we will see shortly, however, this apparent problem can be easily handled if we assume that the relevant movement is not Case-driven. We will return to this point in section 5 below.

3. A-scrambling and the EPP

In the previous section, we have seen that VOS sentences in Tongan exhibit the properties of A-movement. Based on this observation, I propose that VOS order in Tongan arises due to A-scrambling. Given the spirit of Minimalist Program, scrambling as optional movement should not be permitted. Rather, it must be feature-driven, in compliance with Last Resort. In this section, I put forward an argument that VOS in Tongan should be understood as an instance of EPP-driven movement, along the lines of Miyagawa's (2001, 2003) analysis of A-scrambling in Japanese.

Miyagawa (2001, 2003) argues that A-scrambling in Japanese is driven by the EPP feature on T and that the landing site of the “scrambled” object is [SpecTP], which is usually occupied by the subject. According to Chomsky (2000), the EPP feature on a functional head licenses overt movement to its Spec. T’s EPP feature is taken to be a D-feature, which attracts the closest element bearing the matching D-feature, observing the Minimal Link Condition (MLC) in the sense of Chomsky (1995).¹⁶ In a language that does not permit V-to-T raising, this element is usually the subject NP in [SpecvP]. Miyagawa argues, however, that in a language with obligatory V-to-T raising, the subject NP is not the closest; the object and the subject are equidistant from T, as V-raising to T expands the minimal domain for T (cf. Chomsky 1993). Being equally close to T, either the object or the subject can move to [SpecTP] without violating the MLC. If the object moves instead of the subject, we have an instance of scrambling. Note that Case checking is not an issue here. It is assumed, following Chomsky (2000), that a feature is checked by virtue of feature matching under the operation Agree.¹⁷ In other words, an NP’s Case is checked in situ and is irrelevant to its movement to [SpecTP].

This approach predicts that scrambling is possible only in those languages in which V raises to T. This is supported by data from Scandinavian languages, for object shift is possible only when the verb raises to T (Holmberg 1986). However, it is not true of French, in which V indisputably raises to T (Emonds 1978, Pollock 1989), but scrambling is impossible. In order to account for this apparent exception, Miyagawa (2003) notes that those languages which permit scrambling have another property in common: they all have morphological Case marking.¹⁸ Based on this observation, Miyagawa (2003) proposes that morphological Case markers are licensed by T, and that movement of an NP to [SpecTP] is licensed by the agree relation between T and the morphological Case marker on the NP.

Note that the Tongan facts fit nicely Miyagawa’s generalization. First, V raises to T, as evidenced by the V-initial order. Secondly, Case is morphologically marked. Thus, according to Miyagawa’s hypothesis, Tongan is expected to permit scrambling, i.e., movement of the object to [SpecTP].¹⁹ Therefore, following Miyagawa, I propose that VOS order in Tongan arises due to EPP-driven scrambling to [SpecTP]. Unlike Miyagawa, however, I argue that the other factor required for scrambling in Tongan is not morphological Case, but information focus. We will take up this issue in the next section.

4. [Spec, T] and information focus

As noted in Otsuka (2003a), the difference between a VOS and the corresponding VSO construction is that of information focus in the sense of Kiss (1998).²⁰ While the native speakers generally do not recognize any semantic difference between the two when used in isolation, they do distinguish one from the other when asked to choose an appropriate answer to a constituent question. While VSO is used to respond to subject wh-questions, VOS is chosen to respond to object wh-questions. The use of VOS as an answer to a subject wh-question is considered infelicitous. In other words, scrambling in Tongan has an effect similar to that of stress in English. Consider (16), in which the stressed elements are in bold type. A2 is considered to be infelicitous as a response in this context.

(16) Q: *Ko hai na'a ne fili 'a Pila?*
 PRED who PST 3.SG choose ABS Pila
 'Who chose Pila?'

A1: *Na'e fili 'e Sione 'a Pila.*
 PST choose ERG Sione ABS Pila
 'Sione chose Pila.'

A2: *#Na'e fili 'a Pila 'e Sione.*
 PST choose ABS Pila ERG Sione
 'Sione chose Pila.'

This suggests that word order in Tongan has a function similar to that of stress in English, i.e., highlighting the new information.

As Kiss (1998) argues, it is important to distinguish two kinds of focus: contrastive focus and information focus.²¹ The two kinds of focus have different functions and are realized in different manners. Contrastive focus requires exhaustive identification. Information focus, on the other hand, does not require exhaustive identification, but marks the non-presupposed information. Kiss (1998) claims that in English as well as Hungarian, the former involves movement to a focus projection, while the latter is indicated solely by stress and is not associated with movement.²² What Kiss (1998) essentially claims is that information focus is not associated with the focus projection (call it FocP).

Following Kiss (1998), I take the view that information focus is not associated with the focus head, and therefore, does not involve movement to

[SpecFocP]. I argue, however, that information focus could be realized by means of movement. Specifically, I propose that in Tongan, information focus is realized by movement to [SpecTP] and that information focus is what triggers scrambling in conspiracy with the EPP-feature on T. In order to support this proposal, the following issues need to be addressed. First, it is necessary to clarify how information focus is represented in syntax so as to license movement. Second, we must show why information focus is associated with movement in some languages and not in some others.

4.1. Focus and stress in Tongan

Let us consider first why the movement strategy is available to encode information focus in Tongan, but not in English or Hungarian. One intriguing fact is that stress does not seem to function as an indicator of focus in Tongan. As noted above, new information is marked not by stress, but by position. As for contrastive focus, Tongan speakers strongly prefer to use a cleft construction. Placing a stress on a constituent does not bring about any effect. For example, consider the dialogue in (17).

- (17) a. *Na'a ke fili 'a Mele?*
 PST 2.S choose ABS Mele
 'Did you choose Mele?'
- b. *'Ikai, ko Seini na'a ku fili.*
 No PRED Seini PST 1.S choose
 'No, it's Seini that I chose.'
- c. *'Ikai, ko Sione na'a ne fili 'a Mele.*
 No PRED Sione PST 3.S choose ABS Mele
 'No, it's Sione that chose Mele.'
- d. *'Ikai, na'e fili 'e Sione 'a Mele.*
 No PST choose ERG Sione ABS Mele
 'No, Sione chose Mele.'

In response to an utterance whose truth value is false, Tongan speakers almost always use a cleft construction such as (17b) and (17c). In theory, it is possible to use a non-cleft construction (17d) in response to (17a), but it rarely occurs in reality. What is more, if a non-cleft construction is used, the stress pattern is not different from when the same sentence is uttered in

a context without the contrastive focus. Thus, the same sentence, *Na'e fili 'e Sione 'a Mele* "Sione chose Mele", is pronounced in the same manner as an affirmative confirmation, as in (18b).

- (18) a. *Na'e fili 'e Sione 'a Mele?*
 PST choose ERG Sione ABS Mele
 'Did Sione choose Mele?'
 b. *'Io, na'e fili 'e Sione 'a Mele.*
 Yes PST choose ERG Sione ABS Mele
 'Yes, Sione chose Mele.'

What the above data show is that in Tongan, focus, be it contrastive or information, is not associated with stress placement. Without having recourse to the stress strategy, a language has to rely on other means to realize focus. In Tongan, this is done by syntax: clefting is used to realize contrastive focus and information focus is realized in a particular structural position, i.e., [SpecTP].²³

4.2. Information focus and feature checking

The next question is how information focus is represented in syntax and how it qualifies to license movement of an NP. Given the Minimalist framework, the easiest and most natural course to take would be to postulate a feature [info foc(us)] and to claim that it must be checked just like other formal features. This is essentially what Zubizarreta (1998) proposes with respect to (one type of) scrambling in Spanish. In Spanish, phrases other than the subject may precede the verb, as illustrated in (19) below.

- (19) a. *Todos los días compra Juan el diario.*
 every day buys Juan the newspaper
 'Juan buys the newspaper everyday.' (Zubizarreta 1998: 102)
 b. *Las ESPINACAS destesta Pedro (y no las papas).*
 the spinach hates Pedro (and not the potatoes)
 'Pedro hates the spinach (not the potatoes).' (Zubizarreta 1998: 103)

In (19), the verb is preceded by an adverbial phrase, which is a topic in this sentence. In (19b), the phrase in the preverbal position is the dative argument, which in this case bears the contrastive focus. Zubizarreta (1998) argues

that in (19) the preverbal phrases are in [SpecTP], the position which the subject occupies in non-scrambled constructions. She proposes that in Modern Spanish, a discourse-based functional feature, such as “topic” or “focus” may combine with the feature T(ense) to form the syncretic categories such as T/“topic” and T/“focus”. Movement of non-subject phrases exemplified in (19) above can then be seen as movement in compliance with Last Resort; it is necessary in order to check the relevant features on T.

While some may have an aversion to the idea of incorporating discourse-based notions into syntax, Zubizarreta (1998) convincingly argues that some discourse related information must be encoded in the grammar. She postulates two additional reference points in derivation: Σ -structure and Assertion Structure (AS), which comes before and after LF, respectively. AS is where information structure, including focus, is represented. The main motivation for AS is the fact that focus is in many languages encoded by means of stress, which cannot be captured in the LF representation, and yet cannot be regarded as a purely PF operation, either. Σ -structure refers to the single phrase marker that is derived before LF and to which prosody-related operations apply such as the Nuclear Stress Rule (NSR), Focus Prominence Rule (FPR), and prosodically motivated movement (p-movement).²⁴ It should be noted also that Rizzi (1997) argues that topicalization and (contrastive) focus movement involve feature checking on functional heads, Top(ic) and Foc(us), respectively, which are taken to be components of the C-system. Thus, postulating a feature for information focus is not so far-fetched an innovation after all.

Adopting Zubizarreta’s insights, we may say that Tongan is similar to Spanish in that T may combine with a discourse-based feature. Unlike Spanish, however, the type of discourse-based feature that can combine with T is restricted to information focus. Moreover, unlike Spanish, information focus does not interact with prosodic-related rules such as the NSR or FPR. Scrambling in Tongan contrasts with subject inversion in Spanish in an interesting way. In Spanish, information focus is realized as the nuclear stress, which, according to Zubizarreta (1998), is assigned on the constituent lowest in the asymmetric c-command ordering in Spanish. In a subject inversion construction, the subject is put in the position designated for the nuclear stress as a result of p-movement. In this case, however, it is not the focused constituent that undergoes movement. Rather, the (defocalized) constituent moves to a position from which it c-commands the focused constituent, so that the nuclear stress is assigned on the focused constituent in compliance with the NSR. Note that this movement is prosodically motivated.

On the other hand, in Tongan, the relevant movement is purely syntactically motivated. The focused constituent undergoes movement for feature-checking purposes.

4.3. Interaction between information focus and the EPP

To summarize the discussion so far, I have argued that scrambling in Tongan is an instance of feature-driven A-movement to [SpecTP]. I have also proposed that this movement is licensed by two features on T: the EPP and information focus. It has not been made clear, however, how these two features interact in feature-checking. Is it the EPP feature that licenses movement to [SpecTP]? Is it that [info foc] triggers the movement and the EPP is checked as a free rider? Below, I argue that it is [info foc] that licenses the movement and the EPP-feature is checked as a free rider in VOS constructions.

One piece of evidence to support this hypothesis comes from structures with a clitic subject. Clitic pronouns in Tongan precede the verb, giving rise to SV order. Compare (20a) with a full noun subject and (20b) with a pronominal subject.

- (20) a. *Na'e tangi 'a Sione.*
 PST cry ABS Sione
 'Sione cried.'
- b. *Na'a ne tangi.*
 PST 3.S cry
 'He cried.'

Note that V-initial order is derived in Tongan by V-to-T-to-C movement (Otsuka 2000, 2005). Assuming that the ABS-marked subject in (20a) is in [SpecTP], [SpecTP] is empty in (20b), for nothing follows the verb. This suggests that [SpecTP] may be left empty in this language. This does not mean that the EPP feature is weak in Tongan, however. Otsuka (2002a) argues that T's EPP-feature is checked by the clitic in sentences like (20b). Recall that clitic pronouns cannot occur as objects, as shown in (21).

- (21) a. *Na'e fili 'e Sione 'a Mele.*
 PST choose ERG Sione ABS Mele
 'Sione chose Mele.'

- b. **Na'a ne fili 'e Sione.*
 PST 3.S choose ERG Sione
 Intended meaning: 'Sione chose her.'

The fact that the distribution of clitic pronouns shows an accusative pattern is intriguing, for the language is otherwise consistently ergative, treating A differently from S and O. In order to account for this peculiar behavior of clitic pronouns, Otsuka (2002a) proposes that cliticization onto T is motivated by T's EPP-feature. Given that V raises to T and that the clitic intervenes between T and V, we assume that cliticization precedes V-raising to T. The clitic (CL) first right adjoins to T, forming a complex T-CL. Then, the verb raises to right adjoin to this complex, yielding the order [T-CL]-V, in which the clitic is sandwiched between the tense marker and the verb. Thus, at the point where cliticization takes place, the subject is closer to T than the object. Accordingly, only the subject, but not the object can agree with T, due to the MLC. In short, clitic subject constructions suggest that T's EPP-feature is strong in Tongan and that it can be checked in two ways: either by a clitic by means of adjunction or by a full NP in a Spec-head configuration.

Clitic subject constructions present an interesting case to consider. Since pronouns are normally topics in an information structural sense, they cannot be new information and therefore, never bear a feature [info foc]. Yet, they do check T's EPP-feature. Suppose a sentence contains a pronominal subject and a constituent that represents new information. The EPP-feature on T is checked by the clitic, as described above. If the EPP-feature is the driving force for scrambling, we would expect that scrambling is impossible in a clitic subject construction. However, scrambling is compatible with clitic subjects. Consider (22), where the locative PP is scrambled over the object.²⁵

- (22) a. *Na'a ne tuku 'a e tohi 'i he loki.*
 PST 3.S leave ABS DEF book in DEF room
 'He left the book in the room.'
- b. *Na'a ne tuku 'i he loki 'a e tohi.*
 PST 3.S leave in DEF room ABS DEF book
 'He left the book in the room.'

Sentences like (22b) suggests that movement of a non-subject to [Spec, T] is still possible even if T's EPP-feature has been checked by a clitic. The

movement in question can only be licensed by a feature other than the EPP-feature, namely, [info foc]. What this means is that the EPP-feature and [info foc] on T can be checked independently, and that what licenses scrambling is [info foc] rather than the EPP-feature. It should be noted, however, that the EPP-feature on T must also be checked. Scrambling in non-clitic subject constructions therefore need to be licensed by feature checking of the two features.

5. Scrambling of PPs

As mentioned above, scrambling of a PP is also permissible in Tongan. In this section, we consider how PP scrambling can be accounted for in the current approach, in which scrambling is taken to involve checking of the EPP-feature on T. At first glance, PP scrambling seems to raise a problem for the current proposal; T's EPP-feature is taken to be a D-feature, but the categorial feature of an PP is [P], and not [D]. This problem, however, can be handled rather simply in a way similar to the analysis of locative inversion in English proposed by Collins (1997).

5.1. Locative inversion in English (Collins 1997)

Collins (1997) argues that T's EPP feature can be satisfied by the DP complement of P so that locative inversion should be understood as an instance of DP movement with a preposition pied-piped. His argument is supported by the fact that in English *wh*-movement can pied-pipe the preposition, suggesting that feature checking may permit pied-piping of a preposition. As to why the PP can move to [SpecTP], skipping the subject, Collins make use of the notion of equi-distance. In his analysis, it is assumed that a) VP is a complement of a functional head *Tr*(ansitive), to which the verb obligatorily raises; b) the locative PP is generated as a complement of V; and c) the subject of an unaccusative verb is generated in [SpecVP]. By virtue of V-raising to *Tr*, the subject and the locative PP are in the same minimal domain, which in turn licenses movement of the locative PP as well as the subject NP to [SpecTP]. Note that the argument underlying this analysis is exactly the same as Miyagawa's (2001, 2003) analysis of A-scrambling in Japanese.²⁶

Returning to Tongan, we have seen that a PP can be scrambled over the object in a transitive construction (22), as well as the subject in an intransitive

construction (14). Relevant examples are repeated here as (23) for convenience.

- (23) a. *Na'e 'alu ki Tonga 'a Sione.* (= 14b)
 PST go to Tonga ABS Sione
 'Sione went to Tonga.'
- b. *Na'e sio ki he faiako 'a Sione.* (= 15b)
 PST see to DEF teacher ABS Sione
 'Sione saw the teacher.'
- c. *Na'a ne tuku 'i he loki 'a e tohi.* (= 22b)
 PST 3.S leave in DEF room ABS DEF book
 'He left the book in the room.'

Note that we are not appealing to the notion of equi-distance in the way similar to Collins (1997) or Miyagawa (2001, 2003). To recapitulate the current proposal, movement of a phrase other than the subject to [SpecTP] is licensed by information focus, which we take to be a feature on T. This movement is subject to another constraint, that is, to check the EPP-feature on T if it has not been checked by a clitic. The first condition can be met as long as the scrambled PP bears the information focus. The second condition can be met if we assume, along the lines of Collins (1997), that the EPP-feature of T is checked by the D-feature of the complement of P; the preposition ends up in [SpecTP] simply as a result of pied-piping. This way, PP-scrambling is shown to be compatible with the current approach.

A careful look at PP-scrambling in Tongan lends further support to the current proposal, in which scrambling is understood as movement to [Spec, T] driven by the information focus feature. Suppose Tongan does not permit multiple Specifiers. This would predict only one element can move to [SpecTP]. Accordingly, we would expect a) that multiple scrambling is impossible; and b) that when the subject is in [SpecTP], scrambling of PP over the object is impossible. This prediction is borne out. See (24) below.

- (24) a. *Na'e tuku 'a e tohi 'e Sione 'i he loki.* [OBJ-SUBJ-LOC]
 PST leave ABS DEF book ERG Sione in DEF room
- b. **Na'e tuku 'e Sione 'i he loki 'a e tohi.* [SUBJ-LOC-OBJ]
 c. **Na'e tuku 'i he loki 'a e tohi 'e Sione* [LOC-OBJ-SUBJ]
 d. **Na'e tuku 'a e tohi 'i he loki 'e Sione* [OBJ-LOC-SUBJ]
 e. **Na'e tuku 'i he loki 'e Sione 'a e tohi.* [LOC-SUBJ-OBJ]

As predicted, when the subject is in [SpecTP], the PP cannot be scrambled over the object (24b). Similarly, (24c) and (24d) show that scrambling two phrases across the subject results in ungrammaticality.²⁷ Note that all the ungrammatical examples become grammatical if the subject NP is replaced by a pronoun.

- (25) a. *Na'a ne tuku 'i he loki 'a e tohi.*
 PST 3.S leave in DEF room ABS DEF book
 'He left the book in the room'
- b. *Na'a ne tuku 'a e tohi 'i he loki.*
 PST 3.S leave ABS DEF book in DEF room

This is also expected, for the pronominal subject, while checking the EPP-feature on T, does not occupy [SpecTP]. Hence, the position is available for information focus movement.

5.2. Constraints on PP-scrambling in Tongan

Somewhat puzzling is (24e). Only the PP is scrambled and therefore, presumably nothing is wrong with this sentence. However, native Tongan speakers dislike this ordering. In fact, the sentence in question is considered ungrammatical, not merely infelicitous; the judgment remains the same if a context is provided so as to force the scrambled locative PP to bear the information focus. Thus, (26b) is still considered ungrammatical if it is used to respond to the question in (26a).

- (26) a. *Na'e tuku 'e Sione 'a e tohi 'i fe?*
 PST leave ERG Sione ABS DEF book in where
 'Where did Sione leave the book?'
- b. **Na'e tuku 'i he loki 'e Sione 'a e tohi*
 PST leave in DEF room ERG Sione ABS DEF book

What makes this sentence ungrammatical?

A careful observation reveals the following: a) scrambling of a PP over the subject is permissible in intransitive constructions; and b) PP-scrambling across an ERG-marked subject is permissible if the scrambled PP is an argument of a ditransitive verb.²⁸ First, consider (27) below. Scrambling of

the locative PP is permissible in an intransitive construction (27a), but impossible in a transitive construction (27b).

- (27) a. *Na'e kai 'i he peito 'a e tamaiki.*
 PST eat in DEF kitchen ABS DEF children
 'The children ate in the kitchen.'
- b. **Na'e kai 'i he peito 'e he tamaiki 'a e ika.*
 PST eat in DEF kitchen ERG DEF children ABS DEF fish
 'The children ate the fish in the kitchen.'

Second, as illustrated in (28) below, scrambling of a PP across an ERG subject is permissible as long as it is an argument of a ditransitive construction. In the grammatical examples (28a) and (28b), the scrambled PP is an argument of the verb: the beneficiary and goal, respectively. In contrast, (28c) is ungrammatical, with the instrumental PP scrambled over the subject.

- (28) a. *Na'e langa ma'a Mele 'e Sione 'a e fale.*
 PST build for Mele ERG Sione ABS DEF house
 'Sione built the house for Mele.'
- b. *Na'e 'eke kia Mele 'e Sione 'a e fehu'i.*
 PST ask to Mele ERG Sione ABS DEF question
 'Sione asked Mele the question.'
- c. **Na'e kai 'aki 'a e sepuni 'e Sione 'a e supo.*
 PST eat with ABS DEF spoon ERG Sione ABS DEF soup
 'Sione ate the soup with the spoon.'

It appears impossible to draw any reasonable generalization that accommodates both of these facts. On the one hand, PP-scrambling over an ABS-subject is permissible, but scrambling over an ERG-subject is banned. On the other, scrambling of a PP across an ERG-marked subject is permissible if the PP in question is an argument, but not if it is an adjunct. Below I propose a solution to this puzzle. It should be noted, however, that it is a tentative proposal and raises several concerns that call for further research.

An interesting picture emerges when we consider these facts in the light of thematic hierarchy. While there is much debate over the ordering of the thematic roles, the general consensus is that the agent role is the highest ranking role. For Tongan, I posit the hierarchy in (29) below;

(29) Agent > Theme/Goal/Beneficiary > Location > Instrument

We have observed two facts. First, there is asymmetry between arguments and adjuncts: arguments scramble more freely than adjuncts. Second, scrambling of an adjunct is permissible in intransitive constructions, but not in transitive constructions. The relevant condition can be stated as follows in terms of the thematic hierarchy in (29): scrambling across more than one higher ranked argument is prohibited.

I propose that the constraint in question is again pragmatic rather than syntactic. Suppose that the thematic hierarchy reflects the relative saliency of arguments²⁹. Suppose further that the ordering of arguments in an unmarked context observes the thematic hierarchy. That is, when a sentence consists of only new information, the new information focus is assigned by default to the argument that is ranked highest in the thematic hierarchy. The hierarchy can be violated provided the construction contains an argument specifically marked as new information, which will undergo movement to [SpecTP] as discussed above.

The present analysis implies that whatever follows the scrambled element represents old (or given) information. Given information generally tends to be realized in a reduced form such as pronouns as opposed to full noun phrases. This is particularly true of Tongan: arguments whose reference has been established in the discourse are realized as pronouns or simply dropped in the case of third person. Thus, a pragmatic rule requires that arguments following the scrambled element be either pronominal or null (i.e., topic variable). A sentence that violates this rule is a marked construction and requires special context. Highlighting location or instrument as new information would be noticeably marked with the two higher ranked arguments, agent and theme, appearing as old information but not in a reduced form. In this view, scrambling of an adjunct across the ERG-subject is considered illegitimate, for it violates this pragmatic constraint: the agent and theme arguments, the two most salient in the hierarchy, are put in the position reserved for old information and not in the reduced form.³⁰ There are additional concerns that require further investigation. For example, languages like Japanese freely permit the scrambling of location or instrument over agent and/or theme. This suggests that the condition in question is language specific and not universal. My hope is to address these issues in future works.

6. Some residual issues

In this section, some residual issues are addressed. The first point concerns the relation between [SpecTP] and information focus. I have argued that [SpecTP] is the position associated with information focus and that the movement strategy is taken in Tongan because the stress strategy is unavailable. A question arises as to whether [SpecTP] is crosslinguistically associated with information focus, particularly in those languages in which stress does not have a function to mark focus. The second issue concerns Diesing's (1992) Mapping Hypothesis, according to which, definite NPs move out of VP in order to escape existential closure. In the present analysis of scrambling in Tongan, it is the new information that is forced to move out of VP. A subset of new information is necessarily indefinite. The implications of the present proposal in relation to the Mapping Hypothesis need to be discussed.

6.1. Correlation between scrambling and the lack of focus stress

Let us first consider the possible correlation between the information focus movement and the lack of focus stress. Recall that the excellence of Miyagawa's (2001, 2003) approach is that it reduces scrambling to an instance of feature-driven movement, getting rid of the problematic exception to Last Resort. On the other hand, while the EPP-approach successfully explains why the object may move to [SpecTP] as well as the subject, it still allows for some optionality. It is not clear why the object must move rather than the subject in the scrambled sentence.

One advantage of the present analysis is that it also takes care of this problem. It essentially claims that the relevant phrase *must* move for feature checking purposes, namely, that of [info foc]. Can this analysis be extended to other scrambling languages such as Japanese? Here, it is worth noting that in Japanese stress (i.e., pitch accent) does not seem to function as focus marker in a way similar to that in English. First, note that Japanese has lexical pitch accents, which contributes to meaning distinctions between otherwise identical word forms: e.g., *hashi* "bridge" vs. *háshi* "chopsticks". The melody of each word remains constant regardless of discourse considerations. This is in a way analogous to Tongan in that stress has a primary function other than marking focus. Thus, in Japanese, focus is expressed not by placement of pitch accent, but by pitch range expansion (Pierrehumbert and Beckman 1988). Furthermore, Ito (2002) observes that the use of stress

as focus marker is rather limited in Japanese: unlike in English, it does not help disambiguate broad focus reading and narrow focus reading.³¹ Ito (2002) argues that this difference is due to the fact that the primary function of pitch accent in Japanese is to contrast lexical meanings. She also speculates that such language-specific prosodic characteristics may interact with syntactic features such as argument drop. In other words, stress is not the primary strategy to mark focus. Rather, focus could be realized syntactically as well: e.g., by suppressing the presupposed information (argument drop). Tongan also permits argument drop of a similar sort. In fact, it is a more natural way to highlight new information. Given so much similarity, it would be interesting to see if SOV and OSV orders in Japanese exhibit a contrast similar to that between VSO and VOS in Tongan, given an appropriate context. At this point, I am unable to provide any evidence for or against this hypothesis. I will leave this issue for future research.

6.2. Information focus movement and the Mapping Hypothesis

The proposed analysis treats scrambling in Tongan as information focus movement, which moves non-presupposed information out of VP to [SpecTP]. This seems to go against the widely accepted Mapping Hypothesis (MH), which states that definite objects move out of the VP in order to escape existential closure (Diesing 1992). The MH plays a major role in the scrambling literature. As mentioned in Section 1, it has been proposed that scrambling of a direct object in Germanic languages is in compliance with the MH, given the fact that only definite objects can undergo scrambling. Diesing (1997) explains that definite objects must escape existential closure in the VP in order to avoid being focused and interpreted as new information. Rackowski and Travis (2000) argue that this is also the case in Malagasy: definite objects move out of the position closest to the verb, to which the default focus is assigned.

The analysis outlined in this chapter obviously contradicts Diesing's (1997) argument. While Diesing claims that definite objects move out of the VP in order to be *defocused*, the present approach argues that in Tongan, new information must move out of VP in order to be focused. It goes without saying that a subset of the phrases undergoing this movement is necessarily indefinite, being new in discourse.

The key to this problem, I propose, lies in the difference between Tongan and Germanic languages (and the like) with respect to how definiteness is encoded in grammar. As a starter, let us compare the determiner system

in the two groups. Take English for example. An NP may be realized as one of the following types: a) bare NP, b) indefinite article *a*, and c) definite article *the*. The first two give the indefinite interpretation. One thing to note is that these languages permit bare NPs; that is, NPs can occur without a determiner.

The determiner system in Tongan is very different from that in English. First, Tongan does not permit bare NPs.³² An NP must co-occur with a determiner, either *e/he* or *ha*.³³ Second, these determiners are not specified for definiteness. In the literature, *e/he* is referred to as “definite” article and *ha*, “indefinite” article. These labels, however, do not properly capture the difference between the two articles. The difference between *e/he* and *ha* is that of referentiality, rather than definiteness. An NP that is marked by the so-called definite article *e/he* is ambiguous in terms of definiteness. Definiteness is marked phonologically by means of definitive accent. Definitive accent falls on the final mora of the final constituent of a definite NP (cf. footnote 23). Consider (30) below.

- (30) a. *Na'e kai 'e Sione 'a e ika.*
 PST eat ERG Sione ABS DEF fish
 ‘Sione ate a fish.’
- b. *Na'e kai 'e Sione 'a e iká*
 PST eat ERG Sione ABS DEF fish
 ‘Sione ate the fish.’

Note the difference between (30a) and (30b) is the definitive accent on the noun *ika*. In (30a), *ika* has the regular penultimate stress, whereas in (30b), the stress falls on the final mora. This phonological marking gives (30b) the definite reading. In other words, definiteness is not encoded in morphology, but handled in phonology.

This observation has two important implications. First, note that in the minimalist framework, a syntactic operation is considered to be morphologically motivated (Chomsky 1993 and subsequent works). Thus, movement is licensed only if it is necessary to satisfy some morphological requirement. As shown above, definiteness is not morphologically realized in Tongan. Rather, it is marked phonologically. For this reason, definiteness is not a feature that affects syntactic operation, and therefore, any syntactic constraints concerning definiteness are irrelevant in Tongan. Seen in this way, Tongan data do not necessarily contradict the MP.

Second, it should be noted that similar division of labor between syntax and phonology is found in languages that conform to the MP. Diesing (1997: 379) notes that “contrastive stress or focus marks new (or unexpected) information and thus permits the definite NPs which carry such stress to remain in place.” Recall that focus is marked prosodically, rather than morphologically, in the relevant languages. This observation amounts to saying that if definiteness is realized phonologically by means of stress, that can override the syntactic requirement imposed by the MP. Thus, we have two cases where phonological realization of a feature nullifies the syntactic requirement. In Tongan, definiteness is phonologically marked as definitive accent; as a result, the MP becomes irrelevant. In English, indefiniteness can be phonologically marked by virtue of focus stress; consequently, the MP is made ineffective.³⁴

7. Conclusion

To conclude, the preceding discussion has shown that VOS order in Tongan arises as a result of A-scrambling to [SpecTP], and that scrambling in Tongan is an instance of obligatory A-movement motivated by two features on T: the EPP-feature and information focus. Information focus is the feature that forces the constituent representing new information to move to [SpecTP]. This movement, however, is contingent on another condition, namely, checking of T’s EPP-feature. In Tongan, the EPP feature on T can be checked either by the NP in [SpecTP] or by a clitic adjoined to T. In order for information focus movement to take place, T’s EPP feature must be either unchecked or checked by a clitic so that [SpecTP] is available for the information focus movement. While this analysis is based on Miyagawa’s (2001) EPP-based approach, it is different from the original proposal in the following respect. Although T’s EPP-feature plays a significant role in licensing of scrambling, its role is regarded as secondary. In the current approach, the primary driving force is information focus.

A careful examination of scrambling in Tongan has led to an intriguing finding. That is, a syntactic requirement can be superseded by a phonological means that achieves the same effect. Specifically, we have seen that the MH becomes ineffective when definiteness is marked phonologically. For example, in English, focus stress, marking new information, permits the stressed definite NP to remain inside the VP in violation of the MH. In Tongan, definiteness is marked by definitive accent, thereby making the

distinction between indefinite and definite irrelevant to syntactic operations. The current analysis predicts that focus-driven scrambling exists in a language where focus is not realized by means of phonological device such as stress. While it remains to be seen whether such a generalization holds true crosslinguistically, it certainly is a research question worth pursuing.

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Notes

1. See Bailyn (2002) for an excellent survey of the literature on scrambling in the minimalist framework.
2. Prior to the emergence of feature-based model, Neeleman (1994) proposed the base generation analysis of scrambling in Dutch. Miyagawa (1997) also proposes that scrambling of a dative object in Japanese involve two different base structures.
3. But see Kornfilt's (this volume) findings on scrambling in Turkish.
4. See also Longobardi (2000) for a similar analysis of Romance subject inversion.
5. Abbreviations used in this chapter are as follows: ABS = absolutive, ALIEN = alienable, DEF = definite, ERG = ergative, INALIEN = inalienable, PERS = personal, PL = plural, POSS = possessive, PRED = predicate, PRS = present, PST = past, S = singular, 1 = first person, 2 = second person, 3 = third person.
6. The definite article in Tongan has two allomorphs, *e* and *he*: *he* is used after the ERG marker *'e*, prepositions *i* "in", *ki* "to", and *mei* "from". The other form *e* is used elsewhere. Note also that what is called definite articles in Tongan are not equivalent to English *the*, which is both referential and definite. Tongan definite articles only express referentiality. Thus, strictly speaking, they should be translated as "a". Definiteness is expressed phonologically by what Churchward

(1953) calls definitive accent. For the sake of simplicity, however, *e/he* is glossed as definite article and translated as “the” throughout this chapter.

7. Joachim Sabel (p.c.) points out that it could be that only thematic subjects can become clitics. Then, derived subjects such as *Pila* in (2b) cannot be a clitic, not necessarily because it is not a subject, but simply because it is not a thematic subject.
8. The assumption of an empty category PRO is not entirely uncontroversial. For example, Hornstein (1999) argues that PRO should be understood as either an instance of *pro* or an NP-trace.
9. It should be noted that (6) is grammatical if the intended meaning is ‘*Pila_i* wants *Sione* to choose *him_{*i,j}*’. In this case, it is assumed that the embedded clause contains a phonetically null object *pro* and that PRO is in the subject position. This is because in Tongan, third person singular pronominal arguments are freely dropped as long as the reference has been established in the discourse.
10. PRO can occur as an ergative argument, as illustrated in (i) below.
 - (i) *‘Oku loto ‘a Sione [ke fili PRO ‘a Pila].*
 PRS want ABS Sione to choose ABS Pila
 ‘Sione wants to choose Pila.’
11. Stanley Starosta (p.c.) points out that this is an instance of nominalization and therefore cannot be used to make hypotheses about clause structure. While his point is acknowledged, it should be noted that it only poses a problem if the derived noun has an argument structure distinct from that of the base verb. However, Tongan zero-derived nominalization keeps the argument structure of the base verbs. It is always the subject that appears with ‘*e*-possessive. In addition, they can also take an object, as illustrated in (i) below. In this respect, it is rather similar to gerunds in English.
 - (i) *‘ene kai ‘a e ika*
 ALIEN.POSS.3.s eat ABS DEF fish
 ‘his eating the fish’

For this reason, I consider the use of alienable possessive pronouns to be a diagnostic for the subjecthood in Tongan.
12. Joachim Sabel (p.c.) notes that languages like German and Dutch likewise have sentence-internal scrambling and do not allow for scrambling out of finite clauses, but permit scrambling out of infinitives. Unlike German and Dutch, Tongan does not permit scrambling out of infinitival clauses, as illustrated in (i) below.
 - (i) **‘Oku loto ‘a Sione ‘a e ika_i [ke kai PRO t_i]*
 PRS want ABS Sione ABS DEF fish to eat
 Intended meaning: ‘Sione wants to eat the fish.’
13. As to why binding is sensitive to the antecedent’s Case, it is a phenomenon that independently calls for explanation. Unfortunately, such a discussion is

beyond the scope of this chapter. One possibility is that it is a consequence of the fact that Tongan uses the highest element in a thematic hierarchy as antecedent. Similar thematic constraint on binding is found also in other Austronesian languages such as Malagasy and Tagalog, where only the agent (i.e., the highest element in the thematic hierarchy) can be the antecedent. Thanks to Joachim Sabel for bringing this point to my attention.

14. Note the term “middle” in Polynesian languages is used differently from the general sense. Middle verbs are those that take an obligatory oblique object and an ABS marked subject. In Tongan, this class includes verbs of perception and emotion. See Otsuka (2000) for a discussion on the middle verbs in Tongan.
15. As for CPs and APs, scrambling is impermissible in Tongan, as illustrated in (i) and (ii), respectively.
 - (i) **Oku pehē* [*oku talavou* ‘a *Mele*]_i ‘e *Sione* *t*_i.
 PRS think PRS pretty ABS Mele ERG Sione
 ‘Sione thinks that Mele is pretty.’
 - (ii) **Na’e fili* [*talavou taha*]_i ‘e *Sione* ‘a *e ta’ahine* *t*_i.
 PST choose pretty one ERG Sione ABS DEF girl
 ‘Sione chose the prettiest girl.’
16. Some argue that the value of T’s EPP feature is parameterized. Thus, in some languages it is a Pred(icate) feature rather than a D-feature. See Lee (2000), Massam and Smallwood (1997), Massam (2000), Rackowski and Travis (2000) among others.
17. To be precise, Chomsky (2000) proposes that Case features are checked as a result of phi-feature checking, which in turn is taken to be Agree between the NP’s phi-features and those on a functional head.
18. Also see Bošković (this volume).
19. Joachim Sabel (p.c.) points out that Bulgarian is sometimes cited as a language without rich morphology but with scrambling. (See Bošković (this volume) for another view.) Thus, the fact that Case is morphologically marked in Tongan may not necessarily predict that the language permits scrambling; rather, the relevant observation would be that if scrambling is permitted in Tongan, it conforms to the generalization that scrambling languages usually have morphological Case marking.
20. Jayaseelan and Amritavalli (this volume) argues for scrambling as topicalization. Grewendorf (this volume) also argues that scrambling as topicalization and long scrambling as focus movement.
21. Kiss (1998) calls the former “identificational” focus. Zubizarreta (1998) also emphasizes the importance to distinguish information focus from contrastive focus. She argues that the Nuclear Stress Rule is associated with information focus, whereas contrastive focus bears stress due to the Contrastive Stress Rule. See section 4.2 below.

22. Kiss (1998) seems to claim that contrastive focus in English is consistently realized as a cleft construction, thus involves movement. This is not entirely uncontroversial, however. In English, contrastive focus can also be expressed by means of stress. Thus, (i) is ambiguous between the information focus interpretation and the contrastive focus interpretation.

- (i) *John likes **Mary**.*
 ‘John likes Mary (where Mary is the new information).’
 ‘John likes Mary (but not Jane).’

23. As to why stress does not play any role in focus marking, Victoria Anderson (p.c.) suggests that it has to do with the regular, predictable stress placement in Tongan. First, in Tongan, stress regularly falls on the penultimate mora of a word. Second, definite NPs bear a definitive accent, which Anderson and Otsuka (2003) analyze as vowel lengthening. The definitive accent (i.e., vowel lengthening) applies to the final mora of the final word inside the relevant NP, rather than the noun head itself. Consider (i) below, where the stressed mora is in bold type.

- (i) a. *e me'alele*
 DEF car
 ‘a car’
 b. *e me'alelee*
 DEF car
 ‘the car’
 c. *e me'alele kulokulaa*
 DEF car red
 ‘the red car’
 d. *e me'alele kulokula 'a Sione*
 DEF car red POSS Sione
 ‘Sione’s red car’

In effect, whenever a sentence contains a definite NP, the primary stress necessarily falls on the final element of that NP. As stress is used to indicate definiteness, it cannot be used for another function such as focus.

24. Zubizarreta (1998) argues that subject inversion in Spanish is an instance of p-movement. In her analysis, it is assumed that in Spanish, AS is subject to two constraints: a) NSR, which states that the nuclear stress falls on the category that is the lowest in the asymmetric c-command ordering; and b) FPR, which requires that the focused category be prominent. The two constraints are in conflict when the focused constituent is the subject. Subject inversion is taken to be a strategy to resolve this situation; the defocalized constituent undergoes p-movement and left-adjoins to *vP*, so as to put the subject in the position where it can receive the nuclear stress.
25. Here it is assumed that the scrambled PP is in [SpecTP]. See section 5 below for discussion.

26. A similar approach is taken by Bailyn (2003), who treats scrambling in Russian as generalized inversion, i.e., movement to [SpecTP].
27. Note that multiple scrambling is possible in languages like Japanese. The difference between Tongan and Japanese can be explained in terms of a parameter whether or not TP may have multiple specifiers. Thanks to Joachim Sabel for bringing this point to my attention.
28. I use “ditransitive” to refer to three-place predicates such as *give* and *send*. In Tongan, the patient argument of a ditransitive verb is marked by the ABS-marker ‘*a* and, the goal argument, by a preposition *ki* “to”, and the beneficiary argument, by a preposition *ma’a* “for”.
29. Givón (1984) argues that the thematic hierarchy reflects the degree of topicality of arguments.
30. One puzzling fact that is not addressed here is that my informants consider scrambling of a PP headed by ‘*i* “in” consistently worse in a middle construction.
- (i) *⁹ *Oku sai’ia ‘ia Mele; ‘a Sione t_i*.
 PRS like in.PERS Mele ABS Sione
 ‘Sione likes Mele.’
- This contrasts with scrambling of a locative PP, which is permitted freely in intransitive constructions, as shown in (27a) above. I do not have any explanation for this contrast.
31. In English, broad focus reading is more easily obtained with doubly focused constructions such as (i) than singly focused constructions such as (ii). According to Ito’s (2002) experiment, in Japanese double vs. single stress does not make any difference in this respect.
- (i) *John BOUGHT A HOUSE.*
 (ii) *John bought A HOUSE.*
32. Except for the case of noun incorporation, such as (i) below.
- (i) *Na’e kai ika ‘a Sione.*
 PST eat fish ABS Sione
 ‘Sione ate fish.’
- Note that in (i), the subject is marked as ABS and that the object *ika* must occur immediately after the verb and without a determiner or a Case-marker.
33. This runs counter Bošković’s (this volume) analysis, in which it is claimed that NPs are never DPs in scrambling languages.
34. This hypothesis in turn predicts that non-referential indefinite NPs, marked by *ha*, are subject to syntactic constraints, as they do not involve any phonological operation. Given the MP, we would expect *ha*-NPs to remain inside the VP so that they can be bound by existential closure. In other words, we would expect scrambling of *ha*-NPs to be impossible. This is not borne out, however, as illustrated in (i) below.

- (i) ³*Na'e kai ha me'a 'e Sione?*
 PST eat (ABS) IND thing ERG Sione
 'Did Sione eat something?'

Though marginal, (i) is considered grammatical with *ha*-NP scrambled over the subject. Note, however, that the sentence is interrogative. It turns out that *ha* can only occur in either interrogative or negative sentences. Thus, without the interrogative intonation, (ii) is ungrammatical

- (1) **Na'e kai ha me'a 'e Sione.*
 PST eat (ABS) IND thing ERG Sione
 'Sione ate something'

In this respect, *ha* is rather like negative polarity item and is not subject to the licensing condition on normal indefinites.

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String-vacuous scrambling and the Effect on Output Condition

Joachim Sabel

1. Introduction

In this article, I discuss the phenomenon of potentially derivationally ambiguous word orders in languages such as German, Japanese, and Dutch, which could be derived from scrambling and NP-movement operations whose effect cannot be observed. In a generative system with extensive overgeneration in which the operation ‘Move’ applies freely, as in the Government and Binding approach (Chomsky 1981, 1982, 1986a, 1986b), the possibility of multiple different derivations for such orders cannot be excluded. Another situation arises if the same constructions are analyzed from a minimalist point of view (Chomsky 1995, 2000, 2001). In the Minimalist Program, it is possible to restrict multiple derivations which are compatible with one word order via economy principles. On the basis of different syntactic tests it will be shown that potentially derivationally ambiguous word orders of the relevant type are in fact not ambiguous but are only compatible with one derivation. It will be argued that this result can be derived from the ‘Effect on Output Condition’ (EOC) or Interface Effect Condition, i.e., ‘optional α enters the numeration only if it has an effect at the interface’ (Chomsky 1995, 2000, 2001). I show that (i) PF-vacuous scrambling and vacuous NP-movement in passives are impossible, i.e. scrambling and NP-movement must have a PF-effect, and that (ii) the EOC has to be fulfilled when the CP phase is reached. The discussion provides evidence for a derivational approach and for the adequacy of a minimalist version of the Principles and Parameters framework involving economy constraints. It argues against a conception of grammar in which ‘Move’ applies freely.

The article is also an extension of the scrambling analysis developed in Grewendorf and Sabel (1999) and Sabel (2001). In this analysis it is assumed that scrambling is a movement operation triggered by a feature, in line with the idea that scrambling is part of the computational system of human language (C_{HL}), i.e., part of a system designed to meet restrictions

imposed by the conceptual-intentional (CI) and articulatory-perceptual (AP) interface systems. The evidence provided in this paper shows that interface conditions determine whether a scrambling-feature can be applied in a derivation. The fact that certain instances of scrambling have an LF-effect, is taken as evidence for the syntactic (feature-checking) approach to scrambling assumed here. The findings suggest that scrambling is a syntactic operation and not a purely stylistic PF-phenomenon.

The article is organized as follows. In section 2, I introduce the phenomenon of potentially derivationally ambiguous word orders with respect to passive sentences in German and the predictions that different variants of the Principles and Parameters framework make for their analysis. In section 3, I argue that the relevant word orders can only have one derivation, i.e., a derivation without string-vacuous movement (i.e., movement that does not affect the linear order of the lexical string), and that this result follows from the ‘Effect on Output Condition’ (EOC). In sections 4 and 5 it is shown that similar phenomena exist in other languages such as Dutch and Japanese and that they can be explained by the EOC as well. Section 6 explores some consequences of the analysis. In section 7, remnant movement cases will be discussed for which the EOC correctly predicts that string-vacuous movement is possible. It is argued that in remnant movement derivations, string-vacuous movement is followed by a further movement step that leads to a PF-effect of the formerly string-vacuous movement operation. At the end of this section, I briefly discuss the implications of the results for a base-generation analysis of scrambling. The final section provides the general conclusion.

2. Vacuous movement and economy

The common transformational analysis for a syntactic passive sentence in English such as *the man was kissed* is based on the idea that a DP, base-generated in direct object position, is obligatorily moved into an empty SpecTP (Case) position. This movement is a consequence of deletion of the subject θ -role from the verb’s argument structure and deletion of the accusative (i.e. structural) Case feature from the verb’s feature set (see, for example, Jaeggli 1986; Baker, Johnson and Roberts 1989; but see also Collins 2004 for an alternative analysis of passive constructions). In a passive construction in German, we also observe the demotion of the external argument and the absorption of the (structural) accusative Case, as shown in (1b). (1a) is the corresponding active sentence.

- (1) a. *dass* [_{TP} *das Mädchen* [_T *den Mann* gekuesst hat]]
 that the girl-NOM the man-ACC kissed has
 b. *dass* *der Mann* /**den Mann* gekuesst wurde
 that the man-NOM /*the man-ACC kissed was

However, due to SOV word order in German, NP-movement of the object in (1b) does not result in a change of linear order with respect to the corresponding active sentence (1a) as in English. Therefore, looking at the word order alone, we cannot tell whether movement of the nominative DP to SpecTP has taken place in (1b) or not. Possibly as a consequence of the fact that German, unlike English, has null expletives (see footnote 1 and the discussion below), examples with ditransitive verbs suggest that unlike in English, NP-movement to SpecTP in the German passive construction is in fact not obligatory:¹

- (2) a. *dass* *dem Mann* *der Brief* geschickt wurde
 that the man-DAT the letter-NOM sent was
 b. *dass* *der Brief* *dem Mann* geschickt wurde
 that the letter-NOM the man-DAT sent was

In the passive sentences (2a-b), structural accusative Case is absorbed whereas dative Case (like inherent Case) is maintained. As can be seen from the word order (2a), it seems possible for the nominative DP to remain in its VP-internal base position, or for it to move to a position preceding the dative DP as in (2b). Independent of word order, the verb agrees in person (1.–3.) and number with the nominative argument in both examples. Whether the change in word order in (2b) can be argued to result from movement of the nominative DP to the SpecTP subject position, as in English passive constructions, is an issue that will be addressed in this article.^{2,3}

Given that German is a scrambling language, several derivations for (2a) and (2b) seem possible. Some of the derivations for the word order in (2a) that arise from the possibility of having optional NP-movement, scrambling, and, in addition, null expletives, are shown in (3):

- (3) a. *dass* *pro*_{expletive} [_{VP} *dem Mann* *der Brief* geschickt] wurde
 that the man-DAT the letter-NOM sent was

- b. *dass* $pro_{\text{expletive}}$ [_{VP} *dem Mann*₁ [_{VP} ___₁ [_V *der Brief geschickt*]]] *wurde*
- c. *dass* [_{TP} *dem Mann*₁ [_{TP} $pro_{\text{expletive}}$ [_{VP} ___₁ *der Brief geschickt*] *wurde*]]
- d. *dass* [_{TP} *dem Mann*₂ [_{TP} *der Brief*₁ [_{TP} $pro_{\text{expletive}}$ [_{VP} ___₂ ___₁ *geschickt*] *wurde*]]]
- e. *dass* $pro_{\text{expletive}}$ [_{VP} *dem Mann*₂ [_{VP} *der Brief*₁ [_{VP} ___₂ ___₁ *geschickt*]]] *wurde*
- f. *dass* $pro_{\text{expletive}}$ [_{VP} *dem Mann* [_{VP} *der Brief*₁ ___₁ *geschickt*] *wurde*]
- g. *dass* [_{TP} *dem Mann*₂ [_{TP} $pro_{\text{expletive}}$ [_{VP} *der Brief*₁ [_{VP} ___₂ ___₁ *geschickt*] *wurde*]]]
- h. *dass* [_{TP} *dem Mann*₂ [_{TP} *der Brief*₁ [_{VP} ___₂ ___₁ *geschickt*] *wurde*]]]
- i. *dass* [_{TP} *dem Mann*₂ [_{VP} *der Brief*₁ [_{VP} ___₂ ___₁ *geschickt*]]] *wurde*
- j. *dass* [_{TP} *dem Mann*₁ [_{VP} ___₁ *der Brief geschickt*] *wurde*]

In (3a) all DPs remain in situ; in (3b) DP_{nom} stays in its base position and DP_{dat} is scrambled (i.e. adjoined) to VP; in (3c) DP_{nom} is in situ and DP_{dat} is scrambled to TP; in (3d) both DPs are scrambled to TP; in (3e) DP_{dat} and DP_{nom} are scrambled to VP; in (3f) DP_{nom} is scrambled to VP, then DP_{dat} is taken from the numeration and merged with VP; in (3g) DP_{nom} is scrambled to VP and DP_{dat} is scrambled to TP; in (3h) DP_{nom} is moved to SpecTP and DP_{dat} is scrambled to TP; in (3i) DP_{nom} is scrambled to VP and DP_{dat} is moved to SpecTP; finally, in (3j) DP_{nom} is in situ and DP_{dat} is moved to SpecTP (a movement that seems also to be possible in languages such as Icelandic (Sigurðsson 1996, 2001) and Japanese (Ura 1999), as will be discussed in more detail below).

The derivations in (3a-j) represent only a subset of all potential derivations for (2a) because they all involve movement operations that apply in one fell swoop. If we take into account the possibility that the movements shown in (3b-j) may leave intermediate traces (in SpecTP and adjoined positions), an infinite number of possible derivations are compatible with the word order in (2a), which would make it impossible to ascertain which derivation is associated with the word order in (2a).

The same situation arises with (2b). Let us at this point consider just some possible positions for the two DPs in this example (a more detailed discussion of this word order is presented in section 3.2.). In contrast to (2a), DP_{nom} cannot be located in its base position. DP_{nom} is moved either to SpecTP or to a VP- or TP-adjoined position. It is possible for DP_{dat} to be located in SpecTP or for the the dative to be scrambled to TP/VP; finally DP_{dat} could be in its base position.

Within the version of the Principles and Parameters framework that is based on the concepts of government and binding (Chomsky 1980, 1981, 1986a, 1986b), the operation ‘Move’ is argued to apply freely from S-structure to LF. If, however, a movement operation violates a constraint, the relevant derivation (or representation) is ruled out by a system of filters. Given that no constraints are violated in (3), it is impossible to predict which of the derivations in (3) is generated for the word order in (2a), i.e., the only possible prediction is that all derivations in (3) can be generated.

At first sight the same situation arises in the Minimalist Program, i.e., in a framework in which movement is triggered by feature-checking. Following Miyagawa (1997), Grewendorf and Sabel (1999), Sabel (2001), Kawamura (2004), among others (see also Collins 1995 and Chomsky 2000), I assume that scrambling in languages such as German and Japanese is triggered by the need to check a scrambling feature $[\Sigma]$. This analysis has the empirical advantage of providing a cross-linguistic account for the variations found with respect to binding and locality restrictions in different scrambling languages as well as for the parametric option of whether scrambling is possible in a language or not. In this view, scrambling is triggered by a strong feature ($[\Sigma]$) that is optionally added to the numeration. It is part of C_{HL} and meets design specifications imposed by the interface systems. For example, in (3b) the $[\Sigma]$ -feature is associated with the DP *dem Mann* ‘the man’, whereas in (3f) it is associated with the DP *der Brief* ‘the letter’ and the respective functional heads. The $[\Sigma]$ -feature might also be associated with PPs, CPs, certain predicates and adverbials (but not with remnants and VPs, for reasons outlined in Grewendorf and Sabel 1994). Multiple scrambling, as for example in (3e), is derived by different $[\Sigma]$ -features ($[\Sigma_1]$, $[\Sigma_2]$, $[\Sigma_3]$, ...) which are hierarchically ordered in the attracting functional head(s) $[F^0]$, i.e., T^0 or v^0 .

As shown in (4i.b) and (4ii.b), derived from (4i.a) and (4ii.a) respectively, these features trigger scrambling in a certain order without inducing intervention effects (see Sabel 2002a for a similar analysis with respect to wh-movement in connection with wh-island effects).⁴

- (4) i. a. ... $[_{FP} [_{F} [_{\Sigma_1} [_{\Sigma_2}]]] \dots XP_{[\Sigma_1]} \dots YP_{[\Sigma_2]} \dots]$
 b. ... $YP_{[\Sigma_2]} XP_{[\Sigma_1]} [_{F} [_{\Sigma_1} [_{\Sigma_2}]]] \dots \text{---}XP_{[\Sigma_1]} \dots \text{---}YP_{[\Sigma_2]} \dots$
- ii. a. ... $[_{FP} [_{F} [[_{\Sigma_1} [_{\Sigma_2}]]]] \dots XP_{[\Sigma_2]} \dots YP_{[\Sigma_1]} \dots]$
 b. ... $XP_{[\Sigma_2]} YP_{[\Sigma_1]} [_{F} [_{\Sigma_1} [_{\Sigma_2}]]] \dots \text{---}XP_{[\Sigma_2]} \dots \text{---}YP_{[\Sigma_1]} \dots$

The scrambling feature is associated with Agr-features in T^0 (or v^0) which trigger scrambling to TP (or vP). This property is due to the fact that the so-called scrambling languages are all *pro*-drop languages. For example, SOV-languages such as German, Hindi, Japanese, Korean, Modern Persian, Turkish and SVO-languages such as Polish all license argumental or non-argumental *pro*, whereas non-*pro*-drop languages such as English and French do not have scrambling. The correlation suggests that the language-specific ability of Agr-features (in T^0/v^0) to license *pro* is a necessary (although not a sufficient) condition for a language to have scrambling, i.e., for Agr (in T^0/v^0) to bear the scrambling feature (for this generalization see also Koster 1986, Reuland and Kosmeijer 1988, Tonoike 1997, among others).

Given that the $[\Sigma]$ -feature can be optionally added to different elements in the numeration, the same number of derivations seems to be possible, for example (3a–j) for (2a), as in the GB-version of the Principles and Parameters framework. However, the minimalist approach involves the important guiding idea that economy principles minimize derivational costs by reducing the number of convergent derivations. Chomsky (1995: 294), based on ideas of Tanya Reinhart and Dany Fox (see Chomsky 2001: 34, for references), postulates an elementary principle of economy, the ‘Effect on Output Condition’ (EOC):

(5) *EOC (Effect on Output Condition)*

α enters the numeration only if it has an effect on output.

(5) restricts numerations. It has the consequence that an element α can be selected for a numeration only if it has an effect at the (PF-/LF-) interfaces. The EOC bars the selection of an element α for a numeration (for example, a $[\Sigma]$ -feature or an empty expletive, see below) if the presence of α generates the same phonetic form as the same numeration without α . α is selected only if it changes the phonetic representation (two outputs being the same if they are identical in phonetic form). (5) implies that output conditions control the operation that constructs the numeration from the lexicon.

On the basis of the EOC, Chomsky (1995) derives certain constraints on the distribution of expletives and the string-vacuous movement constraint. For example, he rules out *wh*-movement to SpecCP of the subject *wh*-phrase in examples like (6).

(6) [_{CP} [_{TP} *Who will fix the car*]]?

Wh-movement is excluded in this case, according to Chomsky (1995: 293), because it would yield (LF, PF) interface representations that are identical in all relevant respects with the output of the non-wh-movement derivation in (6). The EOC prevents selection of a strong feature for the numeration which would result in a derivation with a C^0 vacuously attracting the wh-phrase.

According to Chomsky (1995), the EOC provides an explanation for the conclusion in Chomsky (1986a: 48, 57–59), where it is argued that certain parasitic gap constructions and evidence from island extractions suggest that structure (6) is correct and that fronting of the wh-subject is not obligatory. However, whether (6) is really the correct analysis has been subject to debate (arguments for movement of the subject in (6) are discussed in Clements et al. 1983, Fiengo et al. 1988, Koot 1988, Lightfoot and Weinberg 1988, Lasnik and Saito 1992 and Rizzi 1996, Boeckx and Grohmann 2004, and arguments for wh-in situ of the subject in (6) can be found in George 1980, Chung and McCloskey 1983, Ouhalla 1993, Grimshaw 1995, and Ishii 2004; see also Agbayani 2000 for a feature movement analysis).

Furthermore, Chomsky 2001 (p. 35) proposes that an optional rule can apply only if it has an effect on output (i.e., v^* is assigned an EPP feature (triggering object shift) only if that has a semantic effect on the outcome). On the basis of this idea a unified account for object shift in English (as an intermediate movement step) and object shift in Scandinavian is proposed.

It is evident that the EOC has consequences for the derivation of (2a) and (2b), repeated here for convenience:

- (2) a. *dass dem Mann der Brief geschickt wurde*
 that the man-DAT the letter-NOM sent was
- b. *dass der Brief dem Mann geschickt wurde*
 that the letter-NOM the man-DAT sent was

Leaving the complicated case of string-vacuous subject wh-movement aside here, since its possibility may be determined by interfering factors such as language particular properties of the subject position⁵ or particular properties of certain movement types⁶, I assume, following Chomsky 2001 (p. 34) that only the distribution of optional elements is constrained by the EOC.

(5') *EOC (final version)*

Optional α enters the numeration only if it has an effect on output.

Given that scrambling in German (and Dutch and Japanese – as discussed below) and NP-movement in passives is optional movement, depending on features/elements that are optionally part of the numeration, the EOC should bar scrambling as well as NP-movement in (2), if these movements do not have an effect on the LF/PF-output. In this article, I present evidence that scrambling and NP-movement in passives violating (5') must be excluded. It can be excluded if it is assumed that α in (5') = ($pro_{\text{expletive}}$, [Σ]).

I will argue on the basis of syntactic tests that what comes out as a theoretical consequence of the EOC with respect to (2) makes the correct empirical predictions. Potentially derivationally ambiguous word orders involving scrambling and NP-movement such as (2a-b) are in fact compatible with only *one* derivation, i.e., with the derivation that can be derived from the EOC. Scrambling and NP-movement to SpecTP in German passive constructions is only possible if it has an effect at the PF-interface (see also Miyagawa, this volume). Consequently, it will be shown that the word order (2a) can only have a derivation in which DP_{nom} and DP_{dat} are in situ,⁷ and that (2b) can only have a derivation in which DP_{nom} is located in SpecTP. Furthermore, it will be demonstrated that similar results can be observed in Dutch and Japanese.

3. String-vacuous scrambling and NP-movement in German

3.1. The derivation of the $DP_{\text{dat}} DP_{\text{nom}} V_{\text{pass}}$ word order

One possible way of ascertaining whether more than one derivation is compatible with a certain word order string such as (2a) or (2b), is to find out whether both DPs are located in a (base- or derived) position with A- or A'-properties. It is assumed here that SpecTP is a position with A-properties and that a scrambling position in German is a position with A'-properties (see Mahajan 1990, Saito 1992, Abe 1993, Nemoto 1993, Deprez 1994, Grewendorf and Sabel 1999 for a discussion of the A-/A'-properties of scrambling). Base-generated adjunction positions also have A'-properties (see the discussion below). On the basis of these considerations let us look again at the potential derivations in (3).

- (3) a. *dass pro* [_{VP} *dem Mann* *der Brief* *geschickt*] *wurde*
 that the man-DAT the letter-NOM sent was
 b. *dass pro* [_{VP} *dem Mann*_I [_{VP} *___*_I [_{V'} *der Brief geschickt*]]] *wurde*
 c. *dass* [_{TP} *dem Mann*_I [_{TP} *pro* [_{VP} *___*_I *der Brief geschickt*]]] *wurde*]]

- d. *dass* [_{TP} dem Mann₂ [_{TP} der Brief₁ [_{TP} pro [_{VP} ___₂ ___₁ geschickt] wurde]]]
- e. *dass* pro [_{VP} dem Mann₂ [_{VP} der Brief₁ [_{VP} ___₂ ___₁ geschickt]]]
- f. *dass* pro [_{VP} dem Mann [_{VP} der Brief₁ ___₁ geschickt] wurde]
- g. *dass* [_{TP} dem Mann₂ [_{TP} pro [_{VP} der Brief₁ [_{VP} ___₂ ___₁ geschickt]] wurde]]]
- h. *dass* [_{TP} dem Mann₂ [_{TP} der Brief₁ [_{VP} ___₂ ___₁ geschickt] wurde]]]
- i. *dass* [_{TP} dem Mann₂ [_{VP} der Brief₁ [_{VP} ___₂ ___₁ geschickt]]] wurde]
- j. *dass* [_{TP} dem Mann₁ [_{VP} ___₁ der Brief geschickt] wurde]

If it could be shown that DP_{nom} in (2a) behaves like an A-moved element, we can already exclude (3a–g) and (3i–j) as potential derivations for (2a) because only in (3h) does the nominative DP appear in SpecTP, a derived position with A-properties. Following the analysis in Aoun and Li (1989), Sabel (1996, 2002b), Vogel and Steinbach (1997), I assume that the dative DP is base-generated in a VP-adjoined position as an “a(rgument-) adjunct” (Grimshaw 1988) and that it has A’-properties with respect to binding and extraction properties (due to its structural position) and A-properties due to the θ -, Case-, and ϕ -features that it shares with the selecting verb (see Sabel 2002b for discussion).⁸ Hence, if the dative is not in SpecTP we would further expect DP_{dat} to display properties of an element in an A’-position. This would be incompatible with a derivation such as (3i–j). If, on the other hand, we discovered that DP_{nom} was behaving as if it were in its base position, we could exclude derivations (3d–i). In this way, I will try to examine which derivation is associated with (2a–b) in the following two sections. The syntactic tests that I will use involve binding, reconstruction, control, extraction phenomena, and the position of indefinites and adverbs.⁹

Let us start with the analysis of (2a). In the derivations (3i–j), DP_{dat} is located in SpecTP, DP_{nom} is in situ or adjoined to VP. It is a well-known fact that, as a parameterized property, some languages such as Icelandic and Japanese allow for dative subjects (Sigurðsson 1996, 2001; Ura 1999). The question is then whether DP_{dat} can be argued to be located in SpecTP in German as well. At first sight, examples such as (7)–(8) suggest that German is similar to Icelandic in allowing for dative subjects:

- (7) a. *Mir ist kalt.*
 me-DAT is-3.SG cold
- b. *Mér er kalt.* [Icelandic]
 me-DAT is-3.SG cold
 ‘I am cold.’
- (8) a. *...dass uns geholfen wurde.*
 that us-DAT helped was-3.SG
- b. *...að okkur var hjálpað.* [Icelandic]
 that us-DAT was-3.SG helped
 ‘...that we were helped.’

However, given that German allows for covert expletives, it has been argued that SpecTP in (7a) and (8a) is occupied by a *pro*-subject and that the dative DP remains in VP. Cole et al. (1980), Zaenen, Maling and Thráinsson (1985), Freidin and Sprouse (1991) and Sigurðsson (2004) have all argued that datives cannot occupy the derived subject position in German because these DPs do not show the syntactic properties associated with elements occupying SpecTP.

The relevant evidence can be gained from several facts. For example, in German, unlike Icelandic, an infinitival passive cannot be constructed on the basis of (8), i.e., the dative can, in Icelandic but not in German, be the PRO subject in (9).

- (9) a. **Wir hofften [geholfen zu werden].*
 we hoped helped to be
- b. *Við vonuðumst til [að verða hjálpað].* [Icelandic]
 we hoped for to be helped
 ‘We hoped to be helped.’

Furthermore, unlike Icelandic datives, German datives do not participate in conjunction reduction, as shown in (10) (Sigurðsson 2004).

- (10) a. *Ich hatte viel zu tun und *(mir) wurde trotzdem*
 I-NOM had much to do and (me-DAT) was nonetheless
nicht geholfen.
 not helped

- b. *Ég hafði mikið að gera og (mér) var samt ekki hjálpað.*
 I-NOM had much to do and (me-DAT) was nonetheless
 not helped
 ‘I had a lot to do and (I) was nonetheless not helped.’

A further argument against the dative subject analysis in (3i–j) comes from control phenomena. Höhle (1978) has observed that in German, the PRO-subject of an adverbial *ohne zu* ‘without to’ infinitival only takes the element in the derived subject position of the matrix clause as its antecedent. This is illustrated in (11a). Assuming that datives in German can occupy the SpecTP position as in (3i–j) leads us to wrongly predict that (11b) is grammatical.¹⁰

- (11) a. *dass [TP der Produzent_i den talentierten Schauspieler_j befragt hat [ohne PRO_{i/*j} sich vorbereitet zu haben]]*
 that the producer-NOM the talented actor-ACC
 interviewed has without himself prepared to have
 ‘that the producer has interviewed the talented actor without having prepared himself’
- b. *?*dass dem Produzenten_i der talentierte Schauspieler empfohlen wurde [ohne PRO_i sich darüber zu freuen]*
 that the producer-DAT the talented actor-NOM
 recommended was without himself there-about to be-glad
 ‘that the talented actor was recommended to the producer without being glad about that.’

A final argument against (3i–j) as potential derivations for (2a) concerns anaphoric binding. In German, an indirect object DP cannot be the antecedent of a reciprocal or anaphoric expression representing the direct object (see Grewendorf 1988; Moltmann 1990; Sabel 1996, 2002b; among others). As illustrated in the active sentence (12), only with the structural subject of the sentence is coreference possible.

- (12) *dass der Arzt_i dem neuen Patienten_j sich_{i,*j} in einem Spiegel gezeigt hat*
 that the doctor-NOM the new patient-DAT himself-ACC
 in a mirror showed has

Example (13) shows that a derived subject in a passive sentence may act as an A-binder for an anaphor as well, if it c-commands the anaphor:

- (13) a. **dass* [_{DP} *dem neuen Patienten* von *sich_i*] *der Arzt_i*
 that the new patient-DAT of himself the doctor-NOM
vorgestellt wurde
 introduced was
- b. *dass* [_{TP} *der Arzt_i* [_T [_{DP} *dem neuen Patienten* von *sich_i*] ____
 that the doctor-NOM the new patient-DAT of himself
vorgestellt wurde]]
 introduced was
 ‘The doctor was introduced to the patient of himself.’

If the dative DP in a passive construction could occupy the structural subject position, as in (3i–j), we would expect it also to be able to serve as a binder for an anaphor. However, as can be seen from (14b), this prediction is not borne out. (14a) is the corresponding active sentence.¹¹

- (14) a. *dass der Mann_i sich_i vertraute*
 that the man-NOM himself-DAT trusted
- b. **dass* [_{dem Mann}]_i [_{von sich}]_i *vertraut wurde*
 that the man-DAT by himself trusted was

To conclude, (3i–j) do not represent possible derivations for the word order DP_{dat} DP_{nom} V_{pass} Aux_{pass} in (2a). This means that the dative in (2a) is either located in its base position or scrambled to VP or TP.

Before I discuss the exact position of the dative DP, I will examine the position of the nominative DP in (2a). On the basis of four empirical arguments (concerning control phenomena, anaphoric binding, extraction and adverb placement), I will show that this element is in its base position in this example. This rules out (3d–i) as potential derivations for (2a) and leaves (3a–c), repeated below, as the only potential derivations for (2a).

- (3) a. *dass pro_{expletive} [_{VP} dem Mann der Brief geschickt] wurde*
 that the man-DAT the letter-NOM sent was
- b. *dass pro_{expletive} [_{VP} dem Mann₁ [_{VP} ____₁ [_V der Brief geschickt]]] wurde*
- c. *dass* [_{TP} *dem Mann₁* [_{TP} *pro_{expletive} [_{VP} ____₁ der Brief geschickt] wurde*]]

In the next step, I will then turn to these derivations, showing that the only possible derivation for (2a) is (3a).

Let us now consider the position of DP_{nom} in (2a). The fact that DP_{nom} cannot control PRO in (15) suggests that the nominative was not raised to SpecTP as in (3h).

- (15) *? *dass dem Produzenten der talentierte Schauspieler_i empfohlen wurde [ohne PRO_i sich darüber zu freuen]*
 that the producer-DAT the talented actor-NOM recommended
 was without himself there-about to be-glad
 ‘that the talented actor was recommended to the producer without being glad about that.’

The ungrammaticality of (15) is expected, if the nominative DP is in situ or scrambled in (2a).

A further argument against (3h) as a derivation for (2a) is based on data involving anaphoric binding. There are well known examples of sentences which remain grammatical when an already established structural relation required for A-binding of anaphoric expressions is destroyed by scrambling or A-movement. This can be illustrated by scrambling (16) and A-movement (17). (Given that scrambling is A'-movement in German, (16b) does not lead to a violation of Principle C).

- (16) a. *dass Heinz_i sich_i rasiert*
 that Heinz-NOM himself-ACC shaves
 b. *dass [TP sich_i [TP Heinz_i ___ rasiert]]*
 that himself-ACC Heinz-NOM shaves

- (17) a. *Pictures of himself_i [T_r [please ___] John_i].*
 b. *Each other_i's pictures seem to the men_i [TP ___] to [T_r be ___ the most beautiful]].*

In Sabel (1996: chapter 7, 2002b, 2002c) and also in Grewendorf and Sabel (1999) (with my co-author) I argued that that the Binding Principles A and B have to be stated in derivational terms. In order to explain binding data such as those in (16)–(17), I assume the derivational version of Principle A in (18) (cf. also Belletti and Rizzi 1988; Lebeaux 1991; Saito 2003, this vol.):

- (18) Principle A of the Binding Theory can be fulfilled at any stage of the derivation.¹²

Now consider again (13), repeated here:

- (13) a. **dass* [*dem Patienten von sich_i*] *der Arzt_i*
 that the patient-DAT of himself the doctor-NOM
vorgestellt wurde
 introduced was
- b. *dass* [_{TP}*der Arzt_i* [_T [*dem Patienten von sich_i*] ____
 that the doctor-NOM the patient-DAT of himself
vorgestellt wurde]]
 introduced was
 ‘The doctor was introduced to the patient of himself.’

Let us assume that (13a) has a derivation as illustrated in (3h). At one stage of the derivation, movement of the nominative DP to SpecTP applies (= (13b)). Now the anaphor fulfils Principle A of Binding Theory. Next, the dative DP is scrambled to TP (= (13a)). This movement does not destroy the already established binding relationship between the anaphor and its antecedent, as illustrated in (16b). We now wrongly predict that the word order in (13a) should lead to a grammatical result. Given that (13a) is ungrammatical, we can conclude that (2a) cannot have a derivation in which the nominative DP is moved to SpecTP at one stage of the derivation, followed by scrambling of the dative DP, as in (3h). If, however, the nominative DP rests in situ as in (3a) or is located in a scrambling position, the ungrammaticality of (13a) is expected, because at no stage of the derivation is *sich* ‘himself’ A-bound by *der Arzt* ‘the doctor’.

A further indicator for the structural position of the nominative DP in (2a) comes from extraction facts. Den Besten (1985) and Diesing (1992: 120), among others have argued that *was-für*- ‘what for-’ split can be used as a test for determining the base positions of arguments in German. *Was-für* split is possible from the base position of the direct object (19a) but impossible from a scrambling (19b) or subject position (19c).¹³

- (19) a. *Was hat der Professor dem Studenten [__ für Bücher]*
 what has the professor-NOM the student-DAT for books
gegeben?
 given
 ‘What kind of books has the professor given to the students?’

- b. **Was₂ hat der Professor [___₂ für Bücher]₁ dem Studenten ___₁*
 what has the professor-NOM for books the student-DAT
gegeben?
 given
 ‘What kind of books has the professor given the students?’
- c. **Was haben [___ für Bücher] den europäischen Markt erobert?*
 what have for books the European market conquered
 ‘What kind of books have conquered the European market?’

The following example from den Besten (1985: 36) illustrates that *was-für*-split is also impossible with datives in double object constructions:

- (20) **Was hast du [___ für Leuten] deinen Aufsatz geschickt?*
 what have you-NOM for people-DAT your paper-ACC sent
 ‘What kind of people have you sent your paper to?’

If (3a), (3b) or (3c) is the structure for (2a), i.e., if the nominative DP is located in the complement position, extraction should be possible from DP_{nom}, whereas extraction should be impossible if the nominative DP were located in SpecTP or an adjoined position:

- (21) *Was wurde [VP dem Mann [DP ___ für ein Brief] gegeben]?*
 what was the man-DAT for a letter given
 ‘What kind of letter was given to the man?’

To conclude, the grammaticality of (21) is only compatible with the view that DP_{nom} in (2a) is located in the complement position as in (3a–c) but incompatible with the derivation in which the nominative is moved to SpecTP or into an adjoined position as in (3d–i).

Further evidence for the fact that DP_{nom} in (2a) occupies the complement position of the verb can be gained from the position of a certain class of manner adverbs such as *gern* ‘gladly’, *absichtlich* ‘intentionally’, which specify the attitude of the subject’s referent. Weibelhuth (1986) has observed that the adverb *gern* may not appear before the subject (22a) (however, (22a) is possible if *gern* is interpreted as a frequency adverb) and that the sentence still sounds odd if this adverb precedes the dative DP (22b) (this example is marked although perfectly possible if *dem Kind* ‘the child’ is given a contrastive reading). The adverb has to appear between the indirect and direct object as in (22c):

- (22) a. **dass gern* [_{TP} *die Mutter* *dem Kind* *die Fotos*
 that gladly the mother-NOM the child-DAT the pictures-ACC
zeigt]
 shows
- b. ??*dass* [_{TP} *die Mutter* *gern dem Kind* *die Fotos*
 that the mother-NOM gladly the child-DAT the pictures-ACC
zeigt]
 shows
- c. *dass* [_{TP} *die Mutter* [_{VP} *dem Kind* *gern die Fotos*
 that the mother-NOM the child-DAT gladly the pictures-ACC
zeigt]]
 shows

He remarks that the corresponding passive sentences behave like the active sentences with respect to the position of the adverb. The adverb has to appear between the dative and the theme argument:

- (23) a. ?**dass gern dem Kind die Fotos gezeigt wurden*
 that gladly the child-DAT the pictures-NOM shown were
- b. *dass dem Kind gern die Fotos gezeigt wurden*
 that the child-DAT gladly the pictures-NOM shown were

From (23) we can conclude that the nominative DP in the passive construction (2a) is located in the VP-internal position like the direct object in (22).

Several tests have shown that the nominative DP in (2a) is located in the complement position of the verb and that DP_{dat} cannot appear in SpecTP. Obviously, string-vacuous NP-movement of DP_{nom} to SpecTP is impossible in the German passive construction (2a) as well as string-vacuous scrambling of DP_{nom}. This rules out (3d–i) as possible derivations for (2a). In section 6, a further empirical argument for this claim will be presented on the basis of the distribution of wh-indefinites.¹⁴

A final task is to examine whether string-vacuous scrambling of DP_{dat} could have taken place in (2a), i.e., whether (3b) and (3c), repeated below, are possible derivations for (2a) with DP_{dat} being scrambled to VP or TP – or whether DP_{dat} is located in its base position as in (3a).

- (3) a. *dass pro* [_{VP} *dem Mann* *der Brief* *geschickt*] *wurde*
 that the man-DAT the letter-NOM sent was
- b. *dass pro* [_{VP} *dem Mann*₁ [_{VP} ___₁ [_V *der Brief geschickt*]]] *wurde*
- c. *dass* [_{TP} *dem Mann*₁ [_{TP} *pro* [_{VP} ___₁ *der Brief geschickt*]]] *wurde*]]

An empirical argument against the derivations (3b–c) will be presented in section 6 on the basis of the distribution of *wh*-indefinites. At this point, I will discuss some theoretical arguments against (3b–c) of general relevance for the discussion in the following sections. It follows that (3a) is the only possible derivation for (2a).

The discussion has so far shown that the nominative DP is in situ in (2a) and that vacuous scrambling of the nominative DP, for example to VP, is impossible. As concerns (3b), it is plausible to assume that by analogy, vacuous scrambling of the dative DP to VP is excluded. In fact, it has been argued in the literature, for example in Fukui (1993), that vacuous adjunction movement cannot take place. To account for certain extraction phenomena, like the absence of subject condition effects in Japanese, Fukui takes movement to an adjacent position to be vacuous if it crosses only one node and argues that “adjunction cannot be vacuous.” Note that this condition also rules out vacuous infinite iterative adjunction movement (see Abe 1993; Saito 1994; Lee 1994: 44; Takano 1996: 245; Sabel 2002c for discussions). Assume that an element β adjoins to α . Then the next shortest landing site for β will again be a position adjoined to α and so on, with no limit on the number of applications of adjunction to α , β will never move out of α . This unwarranted possible derivation arises in a framework such as Chomsky (1981, 1986a) where ‘Move’ applies optionally as well as in a framework where the shortest move requirement is assumed (or ‘Minimize Chain Links’) as in Chomsky and Lasnik (1993) and also in the framework of Chomsky (1995, chapter 4) where it is possible in principle that one and the same head may check a certain feature more than once. However, this constraint, although necessary, is still too weak, since it does not rule out derivations such as (3c), in which string-vacuous scrambling crosses more than one node (see Bošković, this volume).

A more general constraint that rules out all instances of string-vacuous scrambling in (3) is assumed in Hoji (1985: 352) on the basis of scope phenomena in Japanese. Assuming that scrambling is adjunction movement, he claims that “a syntactic adjunction operation cannot apply if it does not change the order of the overt lexical string.” This constraint is reminiscent

of the Effect on Output Condition (EOC), as assumed in the Minimalist Program, repeated below. The EOC, like Hoji's constraint, forbids PF-vacuous scrambling:

(5') *EOC (Effect on Output Condition)*

Optional α enters the numeration only if it has an effect on output.

The EOC predicts that the $[\Sigma]$ -feature can be selected for a numeration only if it has an effect at the interface(s). Given that scrambling in none of the derivations in (3) has a PF- or LF-effect, the EOC implies that the $[\Sigma]$ -feature cannot be selected for the numeration. It follows that the only possible derivation for the word order in (2a) is (3a) and this conclusion is confirmed by all the syntactic tests already discussed.

At this point the question arises as to whether (i) PF-vacuous scrambling that has an effect on the LF-output is possible, (ii) LF-vacuous scrambling that has an effect on the PF-output is possible, and (iii) scrambling necessarily has an effect on the PF- and LF-output. I will discuss these possibilities in section 6, concluding that scrambling that has an effect on the LF-output alone is impossible. However, in section 7 I will discuss examples in which PF-vacuous movement is allowed if a vacuous movement step is followed by a further derivational step that leads to a PF-effect of the (formerly) vacuous movement operation. I will show that in this situation the EOC predicts that vacuous movement is not ruled out. Since the analysis of example (2b) has consequences for the analysis of the relevant derivations in section 7, I will next discuss (2b) in the light of the EOC.

3.2. The derivation of the $DP_{nom} DP_{dat} V_{Pass}$ order

At first sight, the derivations shown in (24) below all seem to be compatible with the word order in (2b), repeated here.

- (24) a. *dass* [_{TP} *der Brief* [_{VP} *dem Mann* ____ *geschickt*] *wurde*]
 that the letter-NOM the man-DAT sent was
- b. *dass* [_{TP} *der Brief* [_{TP} *pro*_{expletive} [_{VP} *dem Mann* ____ *geschickt*] *wurde*]]
 that the letter-NOM the man-DAT sent was
- c. *dass* [_{TP} *pro*_{expletive} [_{VP} *der Brief* [_{VP} *dem Mann* ____ *geschickt*] *wurde*]]
 that the letter-NOM the man-DAT sent was

- (2) a. *dass dem Mann der Brief geschickt wurde*
 that the man-DAT the letter-NOM sent was
- b. *dass der Brief dem Mann geschickt wurde*
 that the letter-NOM the man-DAT sent was

Chomsky (1995, footnote 121) notes that under the EOC, null expletives, for example a *pro* in SpecTP in (2a), are allowed. Although these elements do not produce a change in word order, they prevent a word order change. Therefore they have an indirect effect at PF. One could say that a null expletive is allowed as a “last resort” (like *do*-support in English) to satisfy the EPP (see Chomsky 1995: 139ff). If the derivation of (2a) by movement violates the EOC, then the insertion of expletive *pro* is the only way to satisfy the EPP. Note that, in (2a (=3a)) where the covert expletive has an effect on the PF-output, because it blocks NP-movement of the nominative DP to SpecTP for EPP reasons (and thus conserving the base-generated order), the EOC is satisfied as well. In (24b–c), *pro* satisfies the EPP but movement of the nominative NP has no effect at the interface. The same PF/LF-output is generated without the expletive in (24a). In this derivation, the EPP and the EOC are satisfied. Therefore the EOC predicts that the operation that constructs the numeration from the lexicon rejects the selection of *pro*, leaving only (24a) as a possible derivation for (2b).

Chomsky (1995: 145) has remarked that UG principles are less costly than language-specific rules that are contingent on parameter choices (such as *do*- or *pro*_{expletive}-insertion). This ‘ranking’ makes an interesting prediction. For example, it correctly predicts that NP-movement of the nominative DP is obligatory in active sentences (such as example (iii), mentioned in note 1, *dass das Mädchen den Mann geküsst hat* ‘that the girl_{nom} the man_{acc} kissed has’) and in examples such as *dass der Mann geküsst wurde* ‘that the man_{nom} kissed was’ in which, as expected, the subject can control PRO (cf. *dass der Mann_i geküsst wurde, [_{CP} ohne PRO_i sich darüber zu freuen]* ‘that the man_{nom} kissed was, [without PRO being glad about it]’). In these examples, a derivation with *pro*-insertion satisfies the EPP and violates the EOC, as well as a derivation with movement of the nominative DP to SpecTP. However, given that NP-movement is less costly than merger of *pro*, the only convergent derivation that satisfies the EPP is one with NP-movement.

Let us return to (2b). Given that NP-movement in (24a) has an effect on the PF-output of the derivation, by changing the base-generated word order, this derivation is in accordance with the EOC. I will argue below that empirical arguments support the conclusion that (24a) is the only possible derivation for (2b).

As already discussed in connection with (2a) at the end of the preceding section, the ban on string-vacuous scrambling predicts that DP_{dat} remains in situ in (2b). Likewise, a derivation for (2b) with string-vacuous scrambling of the nominative DP, as shown in (24d–e), is excluded:

- (24) d. *dass* [_{TP} *der Brief*₁ [_{TP} ____₁' [_{VP} *dem Mann* ____₁ *geschickt*] *wurde*]]
 that the letter-NOM the man-DAT sent was
 e. *dass* [_{TP} *der Brief*₁ [_{TP} *dem Mann*₂ [_{TP} *pro*_{expletive} ____₂ ____₁ *geschickt*] *wurde*]]
 that the letter-NOM the man-DAT sent was

The first empirical argument for (24a) can be gained from extraction asymmetries. (19)–(20) have already demonstrated that extraction (i.e., *Was für*-split) from the subject position is impossible. It is then to be expected that in examples such as (2b), after NP-movement has applied, extraction from the moved constituent should also be impossible. As can be seen from (25), this prediction is borne out by the data ((25a)=(21), see also note 13):

- (25) a. *Was*₁ *wurde* [_{VP} *dem Mann* [_{DP} ____₁ *für ein Brief*] *gegeben*]?
 what was the man-DAT for a letter-NOM given
 b. **Was*₂ *wurde* [_{DP} ____₂ *für ein Brief*]₁ [_{VP} *dem Mann* ____₁ *gegeben*]?
 what was for a letter-NOM the man-DAT given
 'What kind of letter was the man given?'

However, we have already seen that extraction from scrambled elements is also impossible (recall the discussion of example (19)). Therefore, all that can be inferred from (25) is that the nominative DP is not in its base position in (2b).

(25) does not provide conclusive evidence for the exact position of the nominative DP. DP_{nom} could be located in SpecTP or in a scrambling position. However, the following examples suggest that (2b) is derived as in (24a) with DP_{nom} being moved to SpecTP. As already pointed out, the PRO-subject of an adverbial *ohne zu* 'without to' infinitival only takes the structural subject of the matrix clause as its antecedent. If the nominative DP in (2b) occupies SpecTP, it should be interpreted as being coreferential with the PRO subject of the infinitival adjunct. Example (26b) shows that this prediction is borne out:

- (26) a. **dass dem Produzenten_i der talentierte Schauspieler empfohlen*
 that the producer-DAT the talented actor-NOM recommended
wurde [ohne PRO_i sich darüber zu freuen]
 was without himself there-about to be-glad
- b. *dass der talentierte Schauspieler_i dem Produzenten empfohlen*
 that the talented actor-NOM the producer-DAT recommended
wurde [ohne PRO_i sich darüber zu freuen]
 was without himself there-about to be-glad

A final empirical argument for (24a) can be gained from Principle C reconstruction effects. It is again based on the assumption that A'-movement in contrast to A'-movement does not show reconstruction effects. As already mentioned, I am assuming here that scrambling in German is movement to an A'-position.¹⁵ With this in mind consider (27). (Imagine a situation in which Paul sees his father for the first time in his life.) In (27a) Principle C is violated. The structural configuration for the Principle C violation is destroyed by scrambling in (27b). However, the scrambled element shows a reconstruction effect, behaving as if it were located in the position it occupies in (27a).

- (27) a. **dass [_{TP} jemand ihm_i [Pauls_i Vater]*
 that someone-NOM him-DAT [Pauls-GEN father]-ACC
erstmal vorgestellt hat]
 for-the-first-time introduced has
- b. **dass [_{TP} [Pauls_i Vater]₁ [_{TP} jemand ihm_i ____]*
 that [Pauls-GEN father]-ACC someone-NOM him-DAT
erstmal vorgestellt hat]]
 for-the-first-time introduced has

A-movement does not show this reconstruction effect (Chomsky 1995), as can be seen from the following examples:

- (28) a. **It seems to him_i that [Paul_i's father] sleeps*
 b. *[Paul_i's father]₁ seems to him_i [____]₁ to ____₁ sleep]*

If NP-movement of the nominative DP has taken place in (2b), or in a similar passive construction based on (27), we would expect an anti-reconstruction effect as in (28b) – if, however, DP_{nom} has been scrambled in (2b), as in the

derivations (24b–c), we expect a reconstruction effect as in (27b). Now consider (29b) and (30b), derived from (29a) and (30a) respectively.

- (29) a. **dass ihm_i erstmals [Pauls_i Vater]*
 that him-DAT for-the-first-time [Pauls-GEN father]-NOM
vorgestellt wurde
 introduced was
- b. *dass Pauls_i Vater ihm_i erstmals ____*
 that [Pauls-GEN father]-NOM him-DAT for-the-first-time
vorgestellt wurde
 introduced was
- (30) a. *dass Pauls_i Vater erstmals der Paul_i*
 that [Pauls-GEN father]-DAT for-the-first-time the Paul-NOM
vorgestellt wurde
 introduced was
- b. **dass der Paul_i [Pauls_i Vater] erstmals ____*
 that the Paul-NOM [Pauls-GEN father]-DAT for-the-first-time
vorgestellt wurde
 introduced was

(30b) is ungrammatical because *der Paul* cannot be reconstructed. (29b) and (30b) are similar to (28b) in that they show a Principle C anti-reconstruction effect. From this we can conclude that NP-movement of the nominative DP to SpecTP takes place in (2b), as shown in (24a). (29b) and (30b) are not compatible with the derivations in (24b–c), involving scrambling of the nominative DP. It follows that in examples such as (2b), where we find the word order DP_{nom} DP_{dat} V_{pass}, NP-movement of DP_{nom} to SpecTP has taken place, as in (24a).

Summarizing this section, we have seen on the basis of empirical and theoretical arguments that the word order DP_{dat} DP_{nom} in passive constructions in German is compatible only with a derivation in which no XP-movement applies, whereas NP-movement to SpecTP takes place if we are dealing with the word order DP_{nom} DP_{dat}. This result was derived from the EOC. In the following two sections we will see that the EOC also takes effect in other scrambling languages such as Dutch and Japanese.

4. String-vacuous scrambling and NP-movement in Dutch

Further evidence for the fact that the EOC restricts scrambling and NP-movement comes from Dutch. In Dutch passives, as in German passives, an indirect object may optionally precede the subject. This is shown in (31).

- (31) a. *dat het boek hem gegeven werd*
 that the book-NOM him-DAT given was
- b. *dat hem het boek gegeven werd*
 that him-DAT the book-NOM given was
 'that the book was given to him'

Given the EOC, and the discussion of the similar examples in German in section 3, we would expect (31b) to represent the base-generated in situ order (without XP-movement), whereas in (31a) NP-movement of the nominative DP to SpecTP has taken place.

I will discuss two arguments which demonstrate that this prediction is borne out. The first argument is discussed in Haan (1979:197ff) (see also Koster 1987:244ff). (32b) shows that the pronominal element *er* 'there' can be extracted out of the PP *er mee* 'there with' (32a), stranding the preposition *mee* 'with'. *Er* may be scrambled in front of the direct object (32b) but it may not be moved in front of the definite subject which is located in SpecTP, as shown in (32c):

- (32) a. *dat Fred de jongens [er mee] heeft geplaagd*
 that Fred-NOM the boys-ACC there with has teased
- b. *dat Fred er₁ de jongens [___₁ mee] heeft geplaagd*
 that Fred-NOM there the boys-ACC with has teased
- c. **dat er₁ Fred de jongens [___₁ mee] heeft geplaagd*
 that there Fred-NOM the boys-ACC with has teased
 'that Fred has teased the boys with it'

On this basis it can be shown that the nominative DP in (31a) is not located in SpecTP but that it remains in VP in (31b).

In the passive construction (33), *er* cannot precede the nominative DP, as shown in (33c).

- (33) a. *dat het boek Mary [er voor] werd gegeven*
 that the book-NOM Mary-DAT there for was given
- b. *dat het boek er₁ Mary [____₁ voor] werd gegeven*
 that the book-NOM there Mary-DAT for was given
- c. **dat er₁ het boek Mary [____₁ voor] werd gegeven*
 that there the book-NOM Mary-DAT for was given
 ‘that Mary was given the book for it’

If it is assumed that the nominative DP is in SpecTP in (33), as in (32), and that *er* cannot be scrambled in front of a definite subject in SpecTP, the ungrammaticality of (33c) is expected. Now consider (34). In (34b–c), *er* is scrambled in front of the definite nominative DP:

- (34) a. *dat Mary het boek [er voor] werd gegeven*
 that Mary-DAT the book-NOM there for was given
- b. *dat Mary er₁ het boek [____₁ voor] werd gegeven*
 that Mary-DAT there the book-NOM for was given
- c. *dat er₁ Mary het boek [____₁ voor] werd gegeven*
 that there Mary-DAT the book-NOM for was given
 ‘that Mary was given the book for it’

The grammaticality of (34b–c) is expected if, as in German, the nominative DP (as well as the dative DP) is not located in SpecTP but remains in VP with DP_{dat} DP_{nom} word order.

The second argument concerns *wat voor* ‘what for’ split in Dutch. As in the analogous German *was für* split-construction, sub-extraction of *wat* may take place from the complement position in Dutch but not from the subject position (Koster 1987: 245):

- (35) a. *Wat₁ heb jij in Italië [____₁ voor musea] bezocht?*
 what have you-NOM in Italy for museums-ACC visited
 ‘What kind of museums did you visit in Italy?’
- b. **Wat₁ hebben [____₁ voor mensen] jou geholpen?*
 what have for people-NOM you-DAT helped
 ‘What kind of people have helped you?’

Turning now to the different word orders in (31) we observe a clear contrast:

- (36) a. *Wat₁ wird hem [____₁ voor boek] gegeven?*
 what was him-DAT for book-NOM given
- b. **Wat₁ werd [____₁ voor boek] hem gegeven?*
 what was for book-NOM him-DAT given

These examples again suggest that the nominative DP in (36a) is in its VP-internal position, whereas in (36b) the nominative DP has been moved to SpecTP.

To sum up, a similar picture emerges for Dutch as for German. Given the word order pattern DP_{dat} DP_{nom} in passive constructions, the only possible derivation is one without NP-movement and scrambling. In contrast, NP-movement applies with the word order pattern DP_{nom} DP_{dat}. These results can be derived from the EOC, as discussed in the preceding section.

5. The ban on string-vacuous scrambling in Japanese (and again in German)

Further empirical evidence of the impossibility of invisible scrambling comes from Japanese. Note that Japanese differs with respect to reconstruction properties of scrambled elements from the corresponding examples in German, where reconstruction is obligatory. This variation with respect to both languages is derived in Grewendorf and Sabel (1999) and Sabel (2001) from the nature of the different landing sites of short scrambling in German and Japanese. According to this analysis, the landing site of short scrambling is a (SpecTP) A-position in Japanese but an (adjunction) A'-position in German. Consider now the following examples involving Principle C effects and scrambling, discussed in Abe (1993: 211). In (37) the pronoun and *John* cannot be co-referential, because this leads to a violation of Principle C of the Binding Theory.

- (37) **pro_i [[OP₁ John_i-ga ____₁ kiratteiru] sensei]-o kenasita (koto)*
 John-NOM hates teacher-ACC criticized
 'pro criticized the teacher who John hates.'

- (37') **[[OP₁ John_i-ga ____₁ kiratteiru] sensei]-o₂ pro_i ____₂ kenasita (koto)*
 John-NOM hates teacher-ACC criticized
 'The teacher who John hates pro criticized.'

If vacuous scrambling were possible, (37') would represent a possible derivation for (37). After scrambling of the object DP, the c-command relationships between the pronoun and the R-expression have changed. Unlike in (37), the pronoun no longer binds *John* in (37'). Given that short scrambling in Japanese either need not (Saito 1992) or cannot (Grewendorf and Sabel 1999; Sabel 2001) reconstruct, a derivation with vacuous scrambling wrongly predicts that (37) is grammatical.

Consider now the analogous version of (37') with non-vacuous scrambling. (39) is derived from (38). It differs from (37') in so far as the pronoun is overtly realized:

(38) **kare_i-ga* [[*OP*₁ *John_i-ga* ____₁ *kiratteiru*] *sensei*]-*o* *kenasita* (*koto*)
 he John-NOM hates teacher-ACC criticized
 'The teacher who John hates, he criticized.'

(39) [[*OP*₁ *John_i-ga* ____₁ *kiratteiru*] *sensei*]-*o*₂ *kare_i-ga* ____₂ *kenasita* (*koto*)
 John-NOM hates teacher-ACC he criticized
 'The teacher who John hates, he criticized.'

In (39), scrambling has an effect on the PF-output, and therefore, it may apply, neutralizing the Principle C effect in (38). The examples show that scrambling that has an effect on the LF-output but not on the PF-output is impossible.

Further evidence for this conclusion can be gained from quantifier scrambling in Japanese and German. Consider the examples in (40)–(41). (40a) and (41a) do not show scope ambiguity. However, examples (40b) and (41b) with scrambling are ambiguous. (For discussion of long quantifier scrambling and the possibilities for deriving reconstruction effects within different scrambling analyses see Bošković and Takahashi 1998, Sabel 2001, Miyagawa, this volume, and Saito, this volume.)

(40) a. *dareka-ga daremo-o aisiteiru.*
 someone-NOM everyone-ACC love
 ($\exists > \forall$; * $\forall > \exists$)

b. *daremo-o₁ dareka-ga ____₁ aisiteiru.*
 everyone-ACC someone-NOM love
 ($\exists > \forall$; $\forall > \exists$)

(41) a. *dass mindestens ein Student jeden Artikel gelesen hat*
 that at-least one student-NOM every article-ACC read has
 ($\exists > \forall$; * $\forall > \exists$)

- b. *dass jeden Artikel₁ mindestens ein Student ____₁ gelesen hat*
 that every article-ACC at-least one student-NOM read has
 ($\exists > \forall$; $\forall > \exists$)

In order to account for the data, a *Scope Principle* (SP) has been proposed, a simplified version of which can be stated as follows (see Hoji 1985, Aoun and Li 1989, and Krifka 1998 for discussions): In a sentence with two quantifiers α and β , α has scope over β iff α c-commands β , or α c-commands a trace (copy) of β . The SP correctly predicts that (40b) and (41b) are ambiguous. Firstly, the accusative DP c-commands the nominative DP and hence may have scope over it. Secondly, the nominative DP c-commands the trace of the accusative DP and hence may have scope over it. Consider next (40a) and (41a). If vacuous scrambling were possible, a derivation for (40a) and (41a) cannot be excluded in which both quantifiers are scrambled such as $Q_2 Q_1 \text{ } ___2 \text{ } ___1 \text{ V}$. But then we wrongly predict that (40a) and (41a) are ambiguous because Q_2 c-commands Q_1 , and Q_1 c-commands the trace of Q_2 .

Firstly, we can conclude from (37)–(41) that scrambling that has an effect on the LF-output but not on the PF-output is excluded by the EOC. Secondly, the EOC applies at the final stage of the derivation, at the CP phase level, and cannot be interpreted as a condition that applies intraderivationally at each step of the derivation. Consider again (40a) and (41a). In the derivation $Q_2 Q_1 \text{ } ___2 \text{ } ___1 \text{ V}$ each movement step changes the word order and satisfies the EOC. However, finally, we end up with a representation that is identical to the initial word order.

Next, I intend to illustrate that the EOC allows for string-vacuous scrambling in examples in which a PF-output effect is achieved by a special stress pattern (and not by a visible change of the linear order of the lexical string at the final stage of the derivation). Special stress patterns may also lead to additional readings (see Krifka 1998 for discussion). In example (42), the first quantifier gets rising stress (marked by “/”) and the second quantifier gets falling stress (marked by “\”). The formerly unambiguous sentence (41a) becomes ambiguous under the rise-fall contour:

- (42) *dass mindestens / EIN Student₂ \ JEden Artikel₁ ____₂ ____₁ gelesen hat*
 that at-least one student-NOM every article-ACC read has
 ($\exists > \forall$; $\forall > \exists$)

According to the EOC, a derivation involving string-vacuous scrambling such as $Q_2 Q_1 \text{---}_2 \text{---}_1 V$ is possible in (42) because, in contrast to (41a), string-vacuous scrambling might be argued to have an effect at the interfaces. In (42) the selection of the $[\Sigma]$ -feature is possible since it generates an output with a different phonetic form from the output in (41a).¹⁶

6. Interim summary and discussion

In the preceding sections, we have seen that the EOC constrains scrambling and NP-movement. The EOC applies at the strong (CP) phase level, when the whole phase is transferred to the phonological and semantic components. Furthermore, the data in the last section have shown that scrambling can have a PF-effect *and* an LF-effect. This provides evidence for the syntactic (feature-checking) approach of scrambling assumed here, i.e., it suggests that scrambling is a syntactic operation and not a (purely stylistic) PF-phenomenon. A derivation with scrambling may serve as an input at the CI- and AP-interfaces.

We have also seen that PF-vacuous scrambling that has an effect on the LF-output alone is impossible. What about LF-vacuous scrambling? Is one necessary condition of scrambling that it must have an effect at the LF-interface? Beside scope effects, as discussed in the preceding section, scrambling has been argued to have different kinds of interpretational effects, which could be interpreted as effects at the CI-interface.

One proposal that tries to connect scrambling with interpretational effects concerns information structure, i.e., the way old and new information provides a background for linguistic interchange. For example, it has been argued that, besides movement to SpecCP, scrambling into a position above the derived subject position and below the C^0 -position can be seen as an instance of topicalization in German (see Frey and Pittner 1998, Frey 2004, Grewendorf, this volume, among others for German, see also Jayaseelan and Amritavelli, this volume for Malayalam). For languages such as Japanese, it has been argued that a scrambled element may constitute the focus of the clause (Miyagawa 1997, this volume; see also Otsuka, this volume, for Tongan; Bailyn 2003 for Russian).

From a technical point of view, these generalizations can easily be integrated into the present analysis. For example, we can assume that the $[\Sigma]$ -feature (that may be realized on T^0 and v^0) can be accompanied by a [topic]- or [focus]-feature ($T_{[\Sigma]/[\text{topic}]}$ or $T_{[\Sigma]/[\text{focus}]}$). A similar complex feature

structure has been proposed for C^0 in wh-questions (for example in Chomsky 2000, 2001 ($C^0_{[wh]/[Q]}$); and also in Sabel 1998, 2000, 2004, i.e. $C^0_{[wh]/[focus]}$). Topic-scrambling is reasonably analyzed as adjunction movement. If topic-scrambling were movement to a SpecTopP position, as in Rizzi (1997), we would expect that it might apply in successive-cyclic manner like topicalization that targets SpecCP in German, but then we would wrongly predict that the examples in (43) should be grammatical.

- (43) a. **dass* [_{TP} *den Mann*₁ *Ede* *glaubt* [_{CP} *dass* [_{TP} ____₁'
 that the man-ACC Ede-NOM believes that
 [_{TP} *Maria* ____₁ *geküsst hat*]]]]
 Mary-NOM kissed has
- b. **dass* [_{TP} *Ede* *den Mann*₁ *glaubt* [_{CP} *dass*
 that Ede-NOM the man-ACC believes that
 [_{TP} *Maria* ____₁' ____₁ *geküsst hat*]]]]
 Mary-NOM kissed has
 'that Ede believes that Maria has kissed the man.'

As argued in Sabel (1996: chapter 3, 1998, 2001, 2002c), movement may not proceed via intermediate adjunction. Given that in (43), the scrambled element is moved into an adjunction site inside the embedded clause (____₁'), it may not move further. By contrast, long scrambling in languages such as Japanese may proceed in a successive-cyclic manner via an embedded Spec position as shown in (44).

- (44) [_{CP} [_{TP} *sono hon-o*₁ *John-ga* *Bill-ni* [_{CP} [_{TP} ____₁' [_T *Mary-ga*
 that book-ACC John-NOM Bill-DAT Mary-NOM
 ____₁ *motteiru to*] *itta*]]]]
 have that said
 'John said to Bill that Mary has that book.'

Furthermore, an adjunction analysis correctly predicts that multiple topics can occur iteratively adjoined to TP in German, without losing account of the locality restrictions for (43):

- (45) Q. *Was gibt's Neues von David und Maria?*
 'What's the news about David and Mary?'

- A. *Ich habe gehört, [CP dass [TP Maria₂ [TP von David₁ I have heard that Mary-NOM from David [TP wahrscheinlich ____₂ ein zweites Kind ____₁ bekommt. probably a second child-ACC have 'I have heard that Mary will probably have a second baby from David.'*

This analysis, however, must account for the following two facts. Firstly, it seems that the topic-feature can also occur with elements in situ. Topics can also appear embedded, for example in (argument as well as in adjunct) PPs/DPs, and need not undergo movement to the left at all. (46) shows that *Heinz* can be interpreted as a topic without being scrambled (Hans-Martin Gärtner, p.c.; see also Haider and Rosengren 2003, Fanselow 2003).

- (46) Q. *Was gibt's Neues von Ede?*
'What's the news about Ede?'
A. *Gestern haben wahrscheinlich [drei Studenten von Ede] yesterday have probably [three students of Ede]-NOM eine Bank ausgeraubt. a bank-ACC robbed*

Secondly, many instances of scrambling do not count as topicalization or focus movement. For example, elements are often scrambled in order to allow a different phrase to be in focus (see also Haider and Rosengren 2003, example (47) is taken from Fanselow 2003). In (47a), the whole utterance is focused, i.e., it is a felicitous answer to a question like *What has happened?*. (47b) differs from (47a) in that object scrambling allows the verb or the adverb to be in focus:

- (47) a. *dass die Polizei gestern Linguisten verhaftete*
that the police-NOM yesterday linguists-ACC arrested
b. *dass die Polizei Linguisten₁ gestern ____₁ verhaftete*
that the police-NOM linguists-ACC yesterday arrested

This example illustrates that although scrambling may be argued to have information structure effects, these effects do not always result from the feature content of the head that triggers scrambling (and from the features of the scrambled element). The same observation has been made in connection with readings of scrambled nominals. De Hoop (1992) and Diesing (1992)

(among others) have argued that scrambling of nominals has an effect on their interpretation (i.e., scrambling leads to a loss of a non-specific reading). However, several authors have shown that syntactic position is not a reliable indicator of the possible interpretations of these elements (Ruys 2001, Haider und Rosengren 2003).

Obviously, there are two ways in which scrambling can create information structural effects. Given a sentence with scrambling, (i) a feature on the scrambled element or (ii) a feature on elements other than the scrambled one satisfies the appropriate link to information structure. In case (i), an inherent feature on the scrambled element (and on the attracting head) ensures informational appropriateness, whereas in case (ii), scrambling is part of a structure that ensures informational appropriateness. Possibility (ii) is reminiscent of the discussion of the conditions under which empty expletives are licensed (see the discussion below example (24)). A scrambled element that does not directly produce an interpretational effect prevents a certain interpretational effect. If this is true, then it has an indirect effect at the CI-interface.

If this conclusion turns out to be correct and if all instances of scrambling can be analyzed as having an effect on interpretation, then the strong claim can be made that scrambling is only possible if it has an effect at the AP- and CI-interfaces. One consequence would be that Saito's (1989) claim that scrambling is a semantically vacuous movement operation has to be understood in a different manner (see also Miyagawa, this vol.). However, it has been observed that certain languages use overt morphological markings to indicate information structure. In addition, these languages display scrambling. Pensalfini (2004) mentions that in Jingulu, a free word order language spoken in Australia, the appearance of this type of morphological marker on an element is completely insensitive to that element's linear position. If this is correct, information structure cannot be held to account for different word orders in Jingulu. I tentatively assume that scrambling may but need not have an effect at the CI-interface.

7. Remnant movement and the EOC

In the preceding sections we have seen that string-vacuous scrambling is impossible. In this section, I discuss remnant movement cases, for which the EOC correctly predicts that string-vacuous scrambling is in fact possible.

Consider example (48), with the derivational steps (48'i)–(48'ii), abstracting away for the moment from the issue of which vacuous movement operations have applied in (48'i) towards the derivation in (48'ii).

(48) *Geschickt wurde dem Mann der Brief.*
 sent was the man-DAT the letter-NOM

(48') i. ... [*dem Mann*₂ [*der Brief*₁ [*VP* ___₂ ___₁ *geschickt*] *wurde*]]
 the man-DAT the letter-NOM sent was
 ii. [*CP* [*VP* ___₂ ___₁ *geschickt*]₃ [*C'* *wurde* [*dem Mann*₂
 sent was the man-DAT
 [*der Brief*₁ ___₃]]]]
 the letter-NOM

Movement of DP_{nom} and DP_{dat} in (48'i) is PF-vacuous and should be excluded according to the EOC. However, a further derivational step, remnant VP-topicalization in (48'ii), leads to a PF-effect of the vacuous movement operations in (48'i). If vacuous movement had not taken place in (48'i), DP_{dat} and DP_{nom} would be located inside the topicalized VP and (48) could not have been derived.

In the case of (48), the EOC correctly predicts that a strong feature can be added to the numeration. Although this feature leads to vacuous movement in (48'i), violating the EOC at this particular intra-derivational step, an output effect is achieved by the later derivational step in (48'ii). This suggests again that the EOC is checked at the CP phase level. Note that we do not necessarily have to assume lookahead to allow for vacuous movement in (48), we can alternatively assume that feature occurrences count, i.e., for example, that in (48), the scrambling feature on the dative DP might only be part of (and the empty expletive is not selected for) the numeration if a topic feature on the verb co-occurs as well. (Considerations of this type also apply for possible orders such as [*VP der Brief geschickt*] *wurde dem Mann* '[the letter sent] was the man' and [*VP dem Mann geschickt*] *wurde der Brief* '[the man sent] was the letter').

Let us look at the movement steps in (48'i) in more detail. The movement of the nominative DP is the first to apply, yielding the order DP_{nom} DP_{dat}. For reasons explained in connection with (2b), we know that this movement targets SpecTP. Scrambling of the dative DP to TP thus has to be assumed to derive the word order in (48). If this analysis is correct then we predict that the nominative DP in (48) should behave differently from (2a) although it occupies the same position in relation to the dative DP in both examples. Evidence that DP_{dat} and DP_{nom} in (48) do in fact occupy a different position from in (2a), although the linear order is the same, can be gained from several tests (including some of the tests already discussed).

Indefinite wh-words in German which have a non-specific, existential reading resist NP-movement to SpecTP in passive sentences, topicalization, focus-movement, and scrambling (see, for example, Haider 1993, Frey and Pittner 1998). Therefore, these elements provide a good test for base positions in German. As shown in (49), scrambling of a definite object in front of the subject is possible, but if the definite is replaced by an existentially interpreted wh-phrase, as in (50), scrambling becomes impossible.

- (49) a. *dass jemand den Brief geschickt hat*
 that someone-NOM the letter-ACC sent has
- b. *dass den Brief₁ jemand ___₁ geschickt hat*
 that the letter-ACC someone-NOM sent has
 ‘Someone has sent the letter.’
- (50) a. *dass jemand was geschickt hat*
 that someone-NOM something-ACC sent has
- b. **dass was₁ jemand ___₁ geschickt hat*
 that something-ACC someone-NOM sent has
 ‘Someone has sent something.’

In the following, I will apply this test to examples such as (2) and (48). The results for (2) will be replicated, i.e., it turns out again that in (2a) both DPs are located in their base positions, whereas in (2b), the nominative is moved to SpecTP. Consider first (51). In (51a–c), the wh-indefinites are in situ, hence the examples are grammatical.

- (51) a. *dass dem Mann was geschickt wurde*
 that the man-DAT something-NOM sent was
- b. *dass wem der Brief geschickt wurde*
 that someone-DAT the letter-NOM sent was
- c. *dass wem was geschickt wurde*
 that someone-DAT something-NOM sent was

In (52c), movement of the nominative to SpecTP has taken place, and when the nominative is a wh-indefinite, as in (52a–b), ungrammaticality results. Hence scrambling and movement to SpecTP is impossible with wh-indefinites.

- (52) a. ?**dass* *was*₁ *dem Mann* ____₁ *geschickt* *wurde*
 that something-NOM the man-DAT sent was
- b. **dass* *was*₁ *wem* ____₁ *geschickt* *wurde*
 that something-NOM someone-DAT sent was
- c. *dass* *der Brief*₁ *wem* ____₁ *geschickt* *wurde*
 that the letter-NOM someone-DAT sent was

On the basis of these observations, it can be shown that DP_{dat} and DP_{nom} in examples with remnant VP-topicalization such as (48) do in fact occupy a different position from in (2a). Compare the sentences in (51) with the sentences in (53). The dative and nominative DPs appear in the same order. Given that movement of wh-indefinites is impossible, as was shown with (52a–b), and given that (53a–c) are ungrammatical, we have to conclude that the wh-indefinites in (53), but not in (51), are in a derived position.

- (53) a. * [_{VP} ____₂ ____₁ *geschickt*]₃ *wurde* *wem*₂ *was*₁ ____₃
 sent was someone-DAT something-NOM
- b. * [_{VP} ____₂ ____₁ *geschickt*]₃ *wurde* *wem*₂ *der Brief*₁ ____₃
 sent was someone-DAT the letter-NOM
- c. ?* [_{VP} ____₂ ____₁ *geschickt*]₃ *wurde* *dem Mann*₂ *was*₁ ____₃
 sent was the man-DAT something-NOM

To conclude, the distribution of existentially interpreted wh-words provides further evidence for the analysis of (2a–b) proposed in section 3., and their distribution shows that in examples with VP-topicalization such as (48) and (53), remnant VP-movement applies after vacuous movement of the nominative and dative DP has taken place.

Let us briefly return to (52a–b). These examples show that NP-movement of wh-indefinite(s) is impossible. The only possible derivation is one in which *pro* occupies the subject position, as in (54a–b) (= (51a, c)).

- (54) a. *dass* [_{TP} *pro* [_T *dem Mann* *was* *geschickt* *wurde*]]
 that the man-DAT something-NOM sent was
- b. *dass* [_{TP} *pro* [_T *wem* *der Brief* *geschickt* *wurde*]]
 that someone-DAT the letter-NOM sent was
- c. *dass* [_{TP} *pro* [_T *wem* *was* *geschickt* *wurde*]]
 that someone-DAT something-NOM sent was

(55) represents a similar case.

- (55) a. *dass pro wer geküsst wurde*
 that someone-NOM kissed was
- b. *dass pro was gesungen wurde*
 that something-NOM sung was

The EOC states that an optional element α enters the numeration only if it has an effect on output. However, in (54)–(55) an empty expletive is allowed although it does not affect word order. Why is the empty expletive allowed in these examples?

Recall our discussion at the beginning of section 3.2. Merger of *pro*_{expletive} is allowed as a “last resort.” In (54)–(55), *pro* is not optional. It is necessary to satisfy the EPP. Given that the derivations in (54)–(55) converge only if *pro* is selected for the numeration, the EOC does not apply. Economy principles choose only between different convergent derivations.

A further argument for the possible occurrence of vacuous movement in examples with remnant VP-topicalization can be gained from extraction facts. Section 3.1 demonstrated that extraction from DP is possible if the DP is located in the complement position of the verb. Extraction from DPs is impossible if these elements are scrambled or moved to SpecTP. The contrast in (56)–(57) again confirms the claim that the nominative DP has undergone vacuous movement in examples with VP-topicalization. In (57), the nominative DP is an extraction island, in contrast to (56).

- (56) *dass da₁ dem Hans [ein Buch ____₁ drüber] geschickt wurde*
 that there the Hans-DAT a book-NOM about sent was

- (57) ?* *geschickt wurde da₁ dem Hans [ein Buch ____₁ drüber]*
 sent was there the Hans-DAT a book-NOM about

Let us turn now to the position of the nominative DP in examples with remnant VP-topicalization. If the derived position of the nominative DP is the SpecTP position in (48), then we would expect the nominative DP to act as a controller for PRO. This prediction is confirmed by the following example. (Compare (58) with (15), the corresponding example with the nominative DP in situ):

- (58) [_{VP} ____₂ ____₁ empfohlen] wurde dem Produzenten der talentierte
 recommended was the producer-DAT the talented
 Schauspieler₁ [ohne PRO₁ sich darüber zu freuen]
 Actor-NOM without himself there-about to be-glad

Furthermore, the nominative DP should be able to bind an anaphor inside of the dative DP. As can be seen from the (59), this prediction is borne out as well (compare (13), the corresponding example with the nominative DP in situ):

- (59) a. [_{VP} [_{DP} dem neuen Patienten von sich_i] ____₁ vorgestellt]₂ wurde
 the new patient-DAT of himself introduced was
 [der Arzt_i]₁ ____₂.
 the doctor-NOM
- b. [_{VP} ____₂ ____₁ vorgestellt]₃ wurde [_{DP} dem neuen Patienten
 introduced was the new patient-DAT
 von sich_i] [der Arzt_i]₁ ____₃.
 of himself the doctor-NOM

(53) and (57) have shown that the nominative DP in examples such as (48) cannot be in its base-position, and (58)–(59) show that it can be in SpecTP. From this, I conclude that (48) represents a case of possible vacuous movement. This example has the following structure:

- (60) [_{CP} [_{VP} ____₂ ____₁ geschickt]₃ [_C wurde [_{TP} dem Mann₂
 sent was the man-DAT
 [_{TP} der Brief₁ [_T ____₃ ...]]]]]
 the letter-NOM

Another case of possible vacuous movement can be constructed on the basis of examples with successive-cyclic scrambling (see Mahajan (1990) for a discussion of similar examples in Hindi; Saito (1992); Nemoto (1993); Abe (1993); and Sakai (1994) for relevant data in Japanese.). As can be seen from the Japanese example in (61a), the embedded subject is the only possible antecedent for *otagai* ‘each other’. In (61b) the embedded object containing the reflexive is scrambled in front of the embedded subject. In this position the reflexive *otagai* may be bound by the matrix subject. Now consider (61c), where the DP containing the anaphor is scrambled out of the embedded clause in front of the matrix subject. In this case, the matrix

subject can also be co-referential with the anaphor. (61c) provides evidence that the scrambled element has moved through an intermediate landing-site in the embedded clause, which was its ultimate landing site in (61b) (Nemoto 1993: 93):

- (61) a. *Joe-to Michael_i-ga [CP[TP karera-ga_j Kate-ni [otagai_{*i/j}-no hon]-o okutta to omotteiru]] (koto).*
 Joe-and Michael-NOM they-NOM Kate-DAT each other's book-ACC sent C⁰ thinking
 'Joe and Michael are thinking that they sent Kate each other's book.'
- b. *Joe-to Michael_i-ga [CP[TP [otagai_{i/j}-no hon-o]₁ [T karera-ga_j Kate-ni _____₁ okutta to omotteiru]]] (koto).*
 Joe-and Michael-NOM each other's book-ACC they-NOM Kate-DAT sent C⁰ thinking
- c. *[otagai_{i/j}-no hon-o]₁ Joe-to Michael_i-ga [CP [TP _____₁ [T karera-ga_j Kate-ni _____₁ okutta to omotteiru]]] (koto).*
 each other's book-ACC Joe-and Michael-NOM they-NOM Kate-DAT sent C⁰ thinking

Although the intermediate movement step in (61c) has no effect on the PF output, it is possible and in fact, it is obligatory. Why is an alternative derivation of example (61c), in which scrambling applies in one fell swoop i.e., does not proceed in a successive-cyclic manner, impossible?

As already pointed out, scrambling, like wh- or NP-movement, is an obligatory movement operation driven by a feature, i.e., a scrambling feature [Σ]. The scrambling feature is associated with Agr-features in T⁰ (or v⁰), which triggers scrambling to TP (or vP). Then, in a simple sentence with short scrambling to TP, T⁰ and the constituent to be scrambled contain the scrambling feature. Given Chomsky's (1995) definition of 'Checking Domain' this feature can be checked via substitution into Spec₂ of TP in Japanese or via adjunction to TP as in German. Applying the idea of feature-driven movement to long scrambling in (61c), let us assume that assignment of the scrambling feature to a functional head such as T⁰ implies that the relevant clause contains a phrase with a [Σ]-feature. The assignment of the scrambling feature may then also apply on higher T⁰'s, giving rise to scrambling (see Grewendorf and Sabel 1999, Sabel 2001 for ways of deriving locality restrictions within this analysis). Consequently, in sentences such as (61c) displaying long scrambling out of a finite clause to TP, the

scrambling feature is located both in T^0 of the matrix and in T^0 of the embedded clause and the scrambled element has to check both scrambling-features. Scrambling in (61c) proceeds in a successive-cyclic manner via the embedded Spec-TP position.

Now we can turn to the question of why the intermediate movement step (i.e., the selection of the scrambling feature on the embedded T^0 in (61c)) is not ruled out by the EOC. The answer is that this scrambling movement serves as an input for a further scrambling movement that yields a PF-output effect, i.e. the second movement step of *otagai-no hon-o* ‘each other’s book’. A PF-output effect is retained up to the final stage of the derivation of (61c). Therefore scrambling may apply in an intermediate position in (61c) without violating the EOC. Note that (61c) differs from (48) because in (48) the two movements of the nominative and dative DPs to TP provide no PF-output at the end of the CP phase, unlike the topicalization of VP, whereas in (61c) the scrambling of the DP itself has produced an invisible intermediate movement step that is followed by a movement step of this DP with an interface-effect at the final stage of the derivation.

To sum up, in this section we have seen two examples with vacuous movement that are allowed by the EOC: Remnant Movement and successive-cyclic scrambling. The EOC applies at the CP phase level, i.e., if a PF-output effect is retained in a derivation up to the end of the CP phase, the EOC is fulfilled.

In the preceding sections, I have shown that scrambling and NP-movement are constrained by the EOC, a derivational constraint. The question arises as to whether the observed restrictions can also be derived in representational and non-representational approaches to scrambling that claim that ‘scrambled’ phrases are in fact base-generated in their surface positions, as argued in Kitagawa (1990), Bayer and Kornfilt (1994), Bošković and Takahashi (1998), Fanselow (2001, 2003), and Bošković (this volume). Given that no canonical base-order is assumed the question arises as to whether one can derive from this analysis that only certain scrambled word orders can be base-generated, and whether it can be formulated in a sufficiently general manner to restrict NP-movement in the same way.

An obvious difference between the movement analysis outlined in this article (and also, for example, the movement analysis in Saito 2003, Miyagawa, this volume) and the base-generation analysis concerns intermediate landing sites. It has been argued that scrambled phrases are base-generated in their surface positions in non- θ -positions, and that they have to undergo covert (LF) lowering into VP in order to check their (Case- and) θ -features.

Note that in this analysis, a long scrambled element does not pass through an intermediate landing site in the embedded clause on its way to the embedded VP. This means that a derivation similar to (61c) cannot be derived where an intermediate movement step (---_1) is established that yields the correct configuration for binding the reciprocal by the matrix object.

A similar problem arises with respect to long scrambling of quantifiers. Recall that short scrambling induces ambiguity ((62a) vs. (62b)). The movement analysis in (61) correctly predicts that long scrambling of quantifiers as in (62c) results in ambiguity as well. The intermediate movement step (---_1) in (62c) yields the correct configuration for establishing the wide scope reading of *daremo* (see Sabel 2001; Miyagawa, this volume).

- (62) a. *John-ga* [_{CP} [_{TP} *dareka-ga daremo-ni kiusita to*]] *omotteiru*.
 John-NOM someone-NOM everyone-DAT kissed that think
 ‘John thinks that someone kissed everyone.’
 ($\exists > \forall$; * $\forall > \exists$)
- b. *John-ga* [_{CP} [_{TP} *daremo-ni* [_T *dareka-ga* ---_1 *kiusita to*]]] *omotteiru*.
 John-NOM everyone-DAT someone-NOM kissed that think
 ($\exists > \forall$; $\forall > \exists$)
- c. *Daremo-ni* *John-ga* [_{CP} [_{TP} ---_1] [_T *dareka-ga* ---_1 *kiusita to*]]] *omotteiru*.
 everyone-DAT John-NOM someone-NOM think
 that think
 ($\exists > \forall$; $\forall > \exists$)

The analysis proposed in this article raises a further important question, i.e., what predictions does the EOC make with respect to movement in other contexts. For example, does movement of PRO exist? Why is vacuous object shift possible in languages such as German? Is it a consequence of an interpretative effect or of the fact that null object expletives are not available? Another question arises with respect to head movement. Is invisible head movement, such as V-to-T in German and Japanese compatible with the EOC because, in contrast to scrambling, verb movement does not depend on an *optional* element, as formulated in (5'), that is added to the numeration? I leave these questions open here with the optimistic expectation that a satisfactory answer can be found that is compatible with the analysis proposed in this paper.

8. Conclusion

The starting point of this article was the observation that different versions of the Principles and Parameters framework make different empirical predictions with respect to the derivation of potentially derivationally ambiguous word orders. Assuming that Move- α applies freely makes it impossible to predict whether a derivation with (or without) NP-movement and scrambling occurs in German passive constructions. In contrast, assuming that economy principles restrict the number of possible derivations we can clearly predict whether scrambling and NP-movement have taken place or not. Several syntactic tests were used to show that potentially derivationally ambiguous word orders of the relevant type are in fact not ambiguous but only compatible with one derivation. This result was derived from the ‘Effect on Output Condition’ (EOC).

The discussion as a whole has provided evidence against a conception of grammar in which ‘Move’ applies freely and for the adequacy of a minimalist version of the Principles and Parameters framework involving economy constraints.

Empirical and theoretical arguments have shown that string-vacuous scrambling that has no effect at the PF-interface is impossible and that an expletive *pro* and the $[\Sigma]$ -feature can enter the numeration only if they have an effect at the PF-output. It was shown that interface conditions determine whether a scrambling-feature can be applied in a derivation and that certain instances of scrambling have an LF-effect. This was taken as evidence for a syntactic (feature-checking) approach of scrambling and against the view that scrambling is a purely stylistic PF-phenomenon.

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Notes

1. Several authors have argued that, unlike argumental *pro*-drop languages such as Italian, Japanese and Spanish, languages such as German and Dutch represent “semi” *pro*-drop languages. The latter do not allow referential *pro*-subjects but only empty expletive pronominal *pro*-subjects (McKay 1985; Platzack 1985; Safir 1985a, 1985b; Sternefeld 1985; Koster 1986, 1987; Rizzi 1986; Vikner 1995). According to this view, the subject position in impersonal passive constructions (i) and in constructions with VP-internal ergative subjects is occupied by an expletive *pro* that satisfies the EPP (Extended Projection Principle).

(i) *dass pro_{expletive} getanzt wurde*
 that danced was

Safir (1985b) derives the fact that the expletive must be empty in German (see (i) vs. (ii)) from the Avoid Pronoun Principle in Chomsky (1981), see also Bayer (1986) for relevant discussion.

(ii) **dass es getanzt wurde*
 that it danced was

It can be shown that (1a) cannot have the derivation (iii), see Vikner (1995) for empirical arguments:

(iii) *dass [TP pro_{expletive} [vP das Mädchen den Mann geküsst] hat]*
 that the girl-NOM the man-ACC kissed has
 ‘that the girl has kissed the man’

Derivation (iii) will be discussed and excluded in section 3.2.

2. (2a) (and not (2b)) represents the base order of the DPs. This assumption is based on evidence from extraction (see den Besten 1985, Sabel 2002b, and the discussion in sections 3. and 4.) and binding data (Sabel 2002b). The order NOM > DAT > ACC represents the unmarked order in German for most ditransitive verbs (see Haider and Rosengren 2003 for relevant discussion), as long as we abstract from interfering factors such as focus and (in-) definiteness (see Lenerz 1977, Reis 1987). I assume that both objects in double object constructions are arguments of the verb (see Aoun and Li 1989, among others; for a different analysis, however, see Kayne 1984, Johnson 1991, den Dikken 1995) and that these arguments are linked to certain structural positions in the VP in accordance with the thematic hierarchy.

In Sabel (2002b) it is argued that the dative DP is moved into a Case checking position in German. Although compatible with the analysis proposed in the following sections, I do not represent this movement so as not to complicate the discussion. In fact, as will be shown in the following, the dative DP behaves as if it were in its base position in all relevant respects in (2).

As a final preliminary remark, it should be noted that ergative constructions such as (i) behave in exactly the same manner as the passive in (2a) in all respects discussed in this article.

- (i) *dass pro dem Bauern der Esel entlaufen ist*
 that the farmer-DAT the donkey-NOM ran-away is
 'that the donkey ran away from the farmer.'

However, I restrict my discussion to passive constructions.

3. Different mechanisms have been proposed to guarantee that nominative Case can be assigned VP-internally (see den Besten 1985; Belletti 1988; and Chomsky 1995, 2001 for proposals within different generative systems).
4. I assume that the scrambling feature may be associated with T and *v* heads. For example, the scrambling features in (3d) are realized on T (and on the scrambled NPs/DPs). Given Chomsky's (1995, chapter 3) definition of 'Checking domain' this feature may be checked via adjunction (or substitution in) to TP. According to Chomsky (1995, chapter 3), an element β is in the checking domain of a head α if it is (i) in a Spec-head relation with α , or (ii) in a position adjoined to the head α , or (iii) adjoined to the maximal projection of α , or (iv) adjoined to the Spec of α . Given these assumptions, the absence of *v* should exclude derivations with *v*P/VP-scrambling as in (3b), (3e), etc. on theoretical grounds. However, for reasons outlined in note 9, I nevertheless consider the possibility of scrambling to VP in these cases.
5. Note, for example, that in several optional *wh*-in situ languages (such as Kinyarwanda, Malagasy, Tagalog and Zulu) *wh*-elements are not allowed to appear in SpecTP for independent reasons (see Sabel 2002d; Sabel and Zeller 2004 for discussion). The absence or presence of this **Wh*-in-SpecTP restriction in a language is only one parametric property of SpecTP that influences the (im-) possibility of vacuous subject *wh*-movement. Another parametric property concerns the licensing of nominative subjects in the SpecTP position of infinitives; nominative subjects in this position are found in languages such as European-Portuguese and Spanish, but not, for example, in English. However, these nominative subjects may not appear as *wh*-elements in the infinitival subject position. Other parametric properties of SpecTP are whether it can be filled with indefinite subjects (as in English) or not (as for example in Malagasy, see Keenan 1976); whether it allows for multiple specifiers and hence for transitive expletive constructions (Chomsky 1995); whether a language allows for non-nominative (i.e., so-called 'quirky') subjects (see also section 3.1. for discussion), and, as is well-known, the licensing of empty *pro*-subjects in a language also depends on parametric properties of this position (and its head T^0).
6. Lasnik and Saito (1992) among others assume for example that vacuous movement of subject *wh*-phrases applies, whereas vacuous topicalization of subjects (Lasnik and Saito 1992: 110f) is excluded, see also Watanabe (1991: 109), and Fukui (1993: 119).
7. Thiersch (1978) also argues that no movement takes place in (2a).
8. In Sabel (2002b), I analyze binding and extraction asymmetries between direct and indirect objects in German double object constructions. There it is argued

that indirect objects (i.e., dative arguments) are base-generated as A(rgument)-Adjuncts (in the sense of Grimshaw 1988) and that dative and accusative arguments undergo object shift in the overt syntax in German (see also footnote 2). The proposed analysis provides a unified account of the fact that indirect objects, in contrast to direct objects, show other binding properties. It also explains that indirect DP-, PP- or sentential objects are barriers for extraction in contrast to direct objects, which are not.

9. In the following, I assume that passives, like unaccusatives lacking agents (see Chomsky 1995: 316) are bare VP structures without $v(P)$. Alternatively, it could be assumed that SpecvP in passives hosts the external argument (Collins 2004) or that passive morphology is generated in v and that the passive morpheme hosts the external implicit argument addition (Baker, Johnson, and Roberts 1989). The major points and conclusions reached here hold regardless of whether the VP or vP analysis is assumed.
10. Compare (11) with the analogous examples from Icelandic. As in German, only the structural subject can control a PRO in the adverbial clause (i). In (ia), the nominative argument is the grammatical subject and controller. However, in contrast to German, a dative can control a PRO in an adverbial clause, as shown in (ii) (examples provided by Halldór Sigurðsson, p.c.).

- (i) *að blaðamaðurinn_i spurð rithöfundinn_j [án þess að PRO_{i/*j} hafa undirbúið sig]*
 that journalist-the-NOM asked author-the-ACC [without it to have prepared himself]
- (ii) *að blaðamanninum_i líkaði rithöfundurinn [án þess að PRO_i átta sig á því sjálfur]*
 that journalist-the-DAT liked author-the-NOM [without it to clear himself on it self
 ‘that the journalist liked the author without realizing it himself.’

In addition, Sigurðsson (2000, 2004) mentions that different verb agreement patterns with dative and nominative arguments, found in German and Icelandic, can be explained if dative arguments do not appear in the subject position in German. This provides further evidence for the fact that datives in Icelandic but not in German may appear in the structural subject position; for a different view, however, see Fanselow (2002), and Bayer (2004).

11. However, the binding facts are more complicated, although this does not affect the discussion in the text. For example, the reflexive *sich* in subjectless passives can show up. According to Baker, Johnson, and Roberts (1989) the binder of the reflexive in (i) is the implicit (agent) argument that is incorporated into the verb.

- (i) *dass dem Mann_i sich_{*i,j} (im Spiegel) gezeigt wurde*
 that the man-DAT himself (in-the mirror) shown was
 ‘The man was shown to himself (in the mirror).’

Consider also (ii)–(iii). In constructions where *sich* ‘himself’ and *einander* ‘each other’ are embedded into a DP – the dative may function as an antecedent (see Sabel 2002b for an analysis). A dative object may likewise bind into a PP, as shown in (iv).

- (ii) *dass Heinz dem Mann_i [_{DP} ein Bild von sich_i] zeigte*
 that Heinz-NOM the man-DAT [a picture of himself]-ACC showed
- (iii) *Der Hausbesitzer hat den neuen Mietern_i [_{DP} die Nachbarn*
 the landlord-NOM has the new lodgers-DAT the neighbours
von einander_i] vorgestellt.
 of each-other-ACC introduced
- (iv) *dass der Arzt dem Patienten_i über sich_i die Augen*
 that the doctor-NOM the patient-DAT about himself the eyes-ACC
öffnete
 opened

The examples (ii)–(iv) show that, unlike non-embedded reflexives and reciprocals, discussed in the examples in the text and in (i), reflexives and reciprocals in DPs and PPs may be bound by datives.

12. A mechanical instantiation of this idea is worked out in Sabel (1996, chapter 7; Sabel 2002c) by assuming that anaphors enter the numeration with a kind of “binding-feature” that needs to be visible at the LF-interface. Visibility is achieved if the anaphor is bound (understood here as “valued”) at one step of the derivation in the relevant domain under a certain indexing I (Sabel 1996, 2002c). Given (18), the anaphors in (16)–(17) fulfil Principle A at one stage of the derivation, i.e., before scrambling and NP-movement takes place, making an additional syntactic reconstruction operation at LF (however it is understood) superfluous for the purposes of Binding Theory. For an application of this analysis to Principle B effects and the distribution of bound variable pronouns, see Sabel (1996), (2002b), (2002c).
13. Note, however, that extraction is possible only from indefinite, non-specific DPs. This restriction makes a comparison with (2) somewhat problematic. Furthermore, the test is slightly overshadowed by the fact that certain speakers (see Haider and Rosengren 2003 for discussion) are very liberal with extracting from subject DPs (see also Chomsky 2005 for relevant discussion). However, the fact that a complement/non-complement asymmetry exists in German with respect to scrambling and NP-movement from argument clauses (restructuring with indirect object and subject clauses is impossible, whereas restructuring with direct object clauses is possible, see Sabel 1996, chapter 5) shows that the phrase-structural asymmetries between arguments in complement position and other arguments are real.
14. I do not discuss in detail vacuous scrambling in constructions with VP-adverbs here. They may often appear in different orders with respect to arguments, as in (ia) vs. (ib).

- (i) a. [TP ... DP_{dat} Adverb DP_{nom} Verb]
 b. [TP ... DP_{dat} DP_{nom} Adverb Verb]

It is possible that these adverbs can undergo scrambling, or that they are base-generated in different places in (ia) and (ib) (see Rosengren and Haider 2003 and Fanselow 2003 for relevant discussions). If it could be shown that (ib) is derived from (ia) by movement of DP_{nom} then this movement would not be string-vacuous. The interesting question arises as to whether DP_{nom} is scrambled or in SpecTP. Given that DP_{nom} does not change the relative order with respect to DP_{dat}, we can conclude that the empty expletive is selected (see the discussion following example (24)). This implies that DP_{nom} is scrambled. One prediction is then that it cannot control, and this prediction is borne out by the facts:

- (ii) * *dass dem Produzenten der Schauspieler_i in der Disco _____{nom}*
 that the producer-DAT the actor-NOM in the disco
empfohlen wurde [ohne PRO_i sich darüber zu freuen].
 recommended was without himself there-about to be-glad

15. A-positions are θ -positions and (potential structural) Case-positions as long as they are specifier or complement positions.
 16. Note that according to this analysis different derivations are possible in which the PF-output is the same although the LF-output is different. An example such as (i) is ambiguous in German.

- (i) *Der Richter lässt [den Spion_{acc} den Polizisten_{acc} verfolgen].*
 the lawyer-NOM let the spy-ACC the policeman-ACC chase
 'The lawyer let the spy chase the policeman.'

Either *den Spion* 'the spy' is the ECM-subject (in which case surface order reflects the base-generated order), or *den Polizisten* 'the policeman' is the subject of the infinitival – and *den Spion* 'the spy' is scrambled non-vacuously, as in (ii).

- (ii) *Der Richter lässt [den Spion_{acc1} [den Polizisten_{acc2} ____₁ verfolgen]].*
 the lawyer-NOM let the spy-ACC the policeman-ACC chase
 'The lawyer let the policeman chase the spy.'

In the latter case, the surface order differs from the base-generated order. The EOC is not violated. Both derivations are possible because they are based on different base-generated structures.

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Further notes on the interpretation of scrambling chains

Mamoru Saito

1. Introduction

The precise semantic effect of Japanese (and Korean) scrambling has been a matter of controversy in the recent years. In Saito (1989), I discussed examples like (1b) and proposed that scrambling can be literally “undone” in the LF component.¹

- (1) a. [_{TP} Taroo-ga [_{CP} [_{TP} Hanako-ga dono hon -o yonda] ka]
 -NOM -NOM which book-ACC read Q
 siritagatte iru] (koto)
 eager-to-find out is fact
 ‘Taroo is eager to find out which book Hanako read’
- b. ?[_{TP} Dono hon -o_i [_{TP} Taroo-ga [_{CP} [_{TP} Hanako-ga t_i yonda] ka]
 which book-ACC -NOM -NOM read Q
 siritagatte iru]] (koto)
 eager-to-find out is fact
 ‘Taroo is eager to find out which book Hanako read’

(1b), which is only slightly deviant, is derived from (1a) by scrambling the wh-phrase *dono hon-o* ‘which book-ACC’ from the embedded object position to the initial position of the matrix clause. The surface position of the wh-phrase, as a result, is outside the embedded question CP. Yet, the wh-phrase is interpreted as part of this CP. This suggests that it is placed back to a position within this CP at LF. This kind of “undoing” has been called radical reconstruction so that it can be distinguished from the standard kind of reconstruction often assumed to explain, for example, connectivity with binding.

In later works, I have tried to provide an explanation for the radical reconstruction effects by making the mechanism of chain interpretation precise. The most recent attempt was made in Saito (2003).² If the copy and deletion analysis of movement is adopted, (2a) can be represented as in (2b).

- (2) a. *Who_i did John see t_i*
 b. [_{CP} *Who* [_{C'} *did* [_{TP} *John see who*]]]
 { π , O, ~~arg~~} { π , Θ , arg}

The wh-phrase in the object position is copied at CP Spec. A wh-phrase is nothing but a bundle of features, including phonetic features (π), a wh-operator feature (O), and a feature, say, argument-feature (arg), that is closely tied with the referential properties of the phrase and participates in binding relations.³ Then, deletion may apply to these features to yield the proper interpretation of the movement chain as indicated in (2b). The phonetic features are retained at the head position of the chain. This is the defining property of overt movement. On the other hand, the wh-operator feature and the arg-feature are interpreted at the CP Spec and at the object position respectively. This suggests that formal/semantic features are retained at the positions where they are selected. Thus, the consideration of a simple example like (2) leads us to the initial hypothesis in (3) for the mechanism of chain interpretation.

- (3) *Initial hypothesis:*
 a. Deletion applies so that every feature is retained at exactly one position.
 b. The π -features are retained at the head of the chain.
 c. Other features are retained at the positions where they are selected.

The application of (3) to scrambling automatically yields its “undoing” property. Let us consider (4).

- (4) a. [_{TP} *Sono hon -o_i* [*Yamada-ga t_i yonda*]] (*koto*)
 that book-ACC -NOM read fact
 ‘Yamada read that book’
 b. [_{TP} *Sono hon-o* [... *sono hon-o* ...]]
 { π , ~~arg~~} { π , arg}

As scrambling is not operator movement, the preposed phrase lacks an operator feature. Thus, only phonetic features are retained at the head position of the chain. In this particular case, then, scrambling is indistinguishable from PF movement. One purpose of Saito (2003) was to show that this analysis of scrambling accounts for the well-known A/A’ properties of scrambling discussed in detail in Mahajan (1990), Tada (1993), and Nemoto (1993).

The aim of the present paper is to extend this analysis by examining the distributions and the interpretations of other formal/semantic features, specifically, those that are not selected by a lexical head or an interrogative C. In particular, I will discuss the effects of scrambling on quantifier scope and the licensing of negative polarity items (NPIs). The discussion will be speculative and the proposals tentative since the analysis is still controversial even for the basic examples of quantifier scope interaction and NPI licensing. Nevertheless, I will suggest that ‘selection’ in (3c) should be generalized to ‘licensing’ so that it covers the quantificational feature (q-feature) and the NPI-feature as well. Further, I will propose that every formal/semantic feature that participates in compositional semantics must be licensed internal to a phase, or more precisely, within the information unit that syntax transfers to semantics upon the completion of a phase. This amounts to saying that each derivational phase is subject to Full Interpretation (FI) in the sense of Chomsky (1986).

In the following section, I will briefly go over the analysis of the A/A’ properties of scrambling proposed in Saito (2003). Section 3 concerns the scope of quantified NPs. I will first present a preliminary analysis for the scope rigidity phenomenon observed with quantifiers in Japanese. Then, I will discuss and analyze the fact that only clause-internal scrambling (as opposed to scrambling across a CP boundary) can affect quantifier scope. The analysis is based on the proposal that a quantified NP is licensed by virtue of binding a variable within its chain. In Section 4, I will discuss the so called *sika ... nai* construction, a representative example of negative polarity constructions in Japanese. It will be argued that when scrambled, NPIs exhibit patterns of radical reconstruction quite similar to those observed with quantified NPs and hence, should be analyzed in basically the same way. Finally, in Section 5, I will briefly speculate on the ways syntax sends various kinds of information to semantics.

2. The A/A’ problem

The investigation of the A/A’ properties of its landing site has been one of the central issues in the analysis of scrambling since Webelhuth 1989 and Mahajan 1990. The typical paradigms obtain in Japanese as well, as discussed in detail in Tada 1993 and Nemoto 1993. I will start the discussion in this section by considering examples that contain *otagai* ‘each other’.

(5) shows that *otagai* ‘each other’ requires a c-commanding antecedent.

- (5) a. $[_{TP} \text{Karera-ga } [_{otagai} \text{ -no sensei}] \text{-o hihansita}]$ (koto)
 they -NOM each other-GEN teacher-ACC criticized fact
 ‘They criticized each other’s teachers’
- b. $?*[_{TP} [_{otagai} \text{ -no sensei}] \text{-ga karera-o hihansita}]$ (koto)
 each other-GEN teacher-NOM they -ACC criticized fact
 ‘Lit. Each other’s teachers criticized them’

The ungrammatical (5b) dramatically improves when the antecedent *karera* ‘they’ is preposed to the sentence-initial position by scrambling, as shown in (6).

- (6) $?[_{TP} \text{Karera-o}_i [_{otagai} \text{ -no sensei}] \text{-ga } t_i \text{ hihansita}]$ (koto)
 they -ACC each other-GEN teacher-NOM criticized fact

This is not surprising because *karera* c-commands *otagai* in this example. It also shows that scrambling affects interpretation at least in some cases, and is to be distinguished from PF movement.

But (7) indicates that the same kind of improvement is not observed with long scrambling out of a CP. That is, (7b) is ungrammatical despite the fact that *karera* ‘they’ is scrambled to a position that c-commands *otagai* ‘each other’.

- (7) a. $*[_{TP} [_{otagai} \text{ -no sensei}] \text{-ga } [_{CP} [_{TP} \text{Tanaka-ga karera-o} \text{ hihansita}] \text{to}] \text{ itta}]$ (koto)
 each other-GEN teacher-NOM -NOM they -ACC
 criticized that said fact
 ‘Lit. [Each other’s teachers] said that Tanaka criticized them’
- b. $*[_{TP} \text{Karera-o}_i [_{otagai} \text{ -no sensei}] \text{-ga } [_{CP} [_{TP} \text{Tanaka-ga } t_i \text{ hihansita}] \text{to}] \text{ itta}]$ (koto)
 they -ACC each other-GEN teacher-NOM -NOM
 criticized that said fact

Based on a similar distinction in Hindi between clause-internal scrambling and long scrambling, Mahajan (1990) argues that the former can be A-movement while the latter is necessarily A’-movement. Then, if *otagai* is an anaphor and requires A-binding, the contrast between (6) and (7b) readily follows.

I suggested in Saito (2003), however, that this is not the only possible conclusion that can be drawn from the contrast between (6) and (7b), and

that there is a way to maintain a uniform analysis of scrambling in Japanese. Let us first consider how the chain interpretation mechanism briefly introduced in the preceding section applies in the case of successive-cyclic movement.⁴

(8) $[_{CP} Who_i [_{C'} do [_{TP} you think [_{CP} t_i' [_{TP} John saw t_i]]]]]$

The first step of the movement in (8) is illustrated in (9).

(9) $[_{CP} Who \quad [_{TP} John saw who]]$
 $\{\pi, O, \text{arg}\} \quad \quad \quad \{\pi, \Theta, \text{arg}\}$

All features of the wh-phrase are copied at the embedded CP Spec. Further, the deletion of features must apply at this point if cyclic interpretation in the sense of Chomsky (1998) is assumed. Suppose that Transfer Operation sends information to PF and semantics at the completion of each phrase. The TP is the complete unit subject to this transfer in the case of (9) because the edge of the CP participates in operations in the higher phase: the C head satisfies the selectional requirement of the higher V and the wh-phrase in CP Spec undergoes further movement. Then, the TP must be in a form accessible to PF and semantics upon the completion of the derivation of the CP phase in (9). This requires the deletion of the phonetic features and the operator feature in the object position. Otherwise, the wh-phrase would be pronounced there and the object would have to be interpreted as an operator.

As the matrix CP is constructed, the wh-phrase moves on to the matrix CP Spec as in (10).

(10) $[_{CP} Who [_{C'} do [_{TP} you think [_{CP} who [_{TP} \dots]]]]]]$
 $\{\pi, O\} \quad \quad \quad \{\pi, \Theta\}$

The phonetic features and the operator feature are copied at the matrix CP Spec and then, are deleted at the embedded CP Spec in accordance with (3). The deletion of the features at the embedded CP Spec is equivalent to the deletion of the intermediate trace in an operator-variable chain.

Let us suppose that scrambling chains are interpreted in roughly the same way. The clause-internal scrambling in (6) takes place as in (11).

(11) $[_{TP} Karera-o [\dots otagai \dots karera-o \dots]]$
 $\{\pi, \text{arg}\} \quad \quad \quad \{\pi, \text{arg}\}$

On the other hand, the derivation of (7b) is more involved. First, the following chain is formed in the embedded CP:

- (12) [_{CP} Karera-o [_{TP} ... karera-o ...]]
 {π, arg} {π, arg}

Then, the matrix clause is constructed as in (13).

- (13) [_{TP} Karera-o [... otagai ... [_{CP} karera-o [_{TP} ...]]]]
 {π} {π}

Note that there is a clear difference between (11) and (13). In the latter, the movement that places *karera* ‘they’ in a position c-commanding *otagai* ‘each other’ carries only the phonetic features, and is literally PF-movement. Hence, the arg-feature of *karera* never c-commands *otagai* in this derivation. On the other hand, the arg-feature of *karera* is in a position c-commanding *otagai* prior to the application of deletion in the case of (11). Thus, if the licensing condition on *otagai* is an anywhere condition, the contrast between (6) and (7b) is accounted for.

It has been controversial whether *otagai* is an anaphor and hence is subject to Condition (A), or contains a hidden pronoun that is subject to the licensing condition on bound pronouns.⁵ But it has been argued that both of these conditions are anywhere conditions. (See, for example, Belletti and Rizzi 1988, Lebeaux 1988, Epstein, et al. 1998, and Sabel 2002.) Presenting further arguments for this hypothesis, I argued for the copy and deletion analysis just illustrated of the contrast between (6) and (7b) in Saito (2003). According to this analysis, there are no A- and A’- scramblings as proposed in Mahajan (1990) and argued for in many subsequent works including Saito (1992, 1994). The landing site of scrambling is uniformly a position from where the licensing of *otagai* ‘each other’ is possible, i.e., an A-position in traditional terminology. Long scrambling fails to license this element because it only copies phonetic features at the landing site.

This analysis of (6) and (7b) straightforwardly extends to the similar contrast between (14b) and (15b), also discussed by Tada (1993) and Nemoto (1993).

- (14) a. ?* [_{TP} [Sono_i tyosya]-ga dono hon -ni-mo_i keti-o tuketa]
 its author -NOM which book-to-also gave-criticism
 ‘Lit. Its_i author criticized every book_i’

- b. $[_{TP} \text{Dono hon -ni-mo}_i \text{ } [[\text{sono}_i \text{ tyosya}]\text{-ga } t_i \text{ keti-o tuketa}]]$
 which book-to-also its author -NOM gave-criticism
- (15) a. $*[_{TP} [\text{Sono}_i \text{ tyosya}]\text{-ga } [_{CP} [_{TP} \text{Hanako-ga } \text{ dono hon -ni-mo}_i \text{ keti-o tuketa}]] \text{ to}] \text{ itta}]]$
 its author -NOM -NOM which book-to-also
 gave-criticism that said
 ‘Lit. Its_i author said that Hanako criticized every book_i’
- b. $?*[_{TP} \text{Dono hon -ni-mo}_i \text{ } [[\text{sono}_i \text{ tyosya}]\text{-ga } [_{CP} [_{TP} \text{Hanako-ga } t_i \text{ keti-o tuketa}]] \text{ to}] \text{ itta}]]]$
 which book-to-also its author -NOM -NOM
 gave-criticism that said

(14a) is a typical example of weak crossover. As shown in (14b), clause-internal scrambling of the quantified phrase remedies the violation. (15b), in contrast, indicates that this effect is not observed with long scrambling.

The derivation of (14b) is illustrated in (16).

- (16) $[_{TP} \text{Dono hon-ni-mo } [[\text{sono tyosya}]\text{-ga } \text{ dono hon-ni-mo keti-o tuketa}]]$
 $\{\pi, \text{arg}\} \qquad \{\text{arg}\}$

Since the arg-feature of the quantified phrase appears at a position c-commanding *sono* ‘its’ at one point of the derivation, the latter is licensed as a bound pronoun. (15b), on the other hand, is derived as in (17).

- (17) a. $[_{CP} \text{Dono hon-ni-mo } [_{TP} \text{Hanako-ga } \text{ dono hon-ni-mo keti-o tuketa}]] \text{ to}]$
 $\{\pi, \text{arg}\} \qquad \{\text{arg}\}$
- b. $[_{TP} \text{Dono hon-ni-mo } [[\text{sono tyosya}]\text{-ga } [_{CP} \text{dono hon-ni-mo } [_{TP} \dots] \text{ to}] \text{ itta}]]]$
 $\{\pi\} \qquad \{\text{arg}\}$

Dono hon-ni-mo ‘to every book’ first moves to the edge of the embedded CP phase as shown in (17a). Chain interpretation applies at this point and the arg-feature is deleted from the landing site. The quantified phrase, then, moves on to the initial position of the matrix clause as in (17b), but only the phonetic features are copied at the landing site. Hence, the arg-feature of the quantified phrase is never in a position c-commanding the pronoun *sono* ‘its’, and the ungrammaticality of (15b) is correctly accounted for.

One consequence of the analysis illustrated above is that Condition (C) is an “LF condition” or more precisely, that it applies after chains are inter-

preted by deletion of features. It has been known that examples of clause-internal scrambling such as (18a–b) are grammatical.

- (18) a. [_{TP} *Zibunzisin-o_i* [_{Taroo-ga} *t_i semeta*]] (*koto*)
 self -ACC -NOM blamed fact
 ‘Taroo blamed himself’
- b. [_{TP} *Otagai -o_i* [_{Taroo-to Hanako-ga} *t_i semeta*]] (*koto*)
 each other-ACC -and -NOM blamed fact
 ‘Taroo and Hanako blamed each other’

(18a), for example, is derived as in (19).

- (19) [_{TP} *Zibunzisin-o* [_{Taroo-ga} *zibunzisin-o semeta*]]
 { π , ~~arg~~} { π , arg}

If Condition (C) is an everywhere condition, as argued, for example, in Lebeaux (1998), (19) would violate this condition because the arg-feature of *zibunzisin* ‘self’ c-commands *Taroo* at the point the scrambled phrase is copied at the landing site. This problem does not arise if the condition applies after the arg-feature is deleted from this position. I will come back to the status of Condition (C) in Section 5, where I briefly discuss the general picture of the way syntax sends information to semantics.

3. Scrambling and the scope of quantified phrases

The formal/semantic features discussed in the preceding section, the operator feature and the arg-feature, are selected and licensed at specific positions by the appropriate heads. But there are features that do not have this property. In this section, I will discuss one clear case, that is, the quantificational feature (q-feature) of quantified phrases. I will suggest that it is licensed by virtue of binding a variable within its chain, and hence, can be retained in a position that establishes this binding relation. In Section 3.1, I will discuss the scope rigidity phenomenon observed in Japanese and at the same time, lay out the preliminary assumptions that are adopted in this paper for the analysis of quantifier scope. Then, in Section 3.2, I will examine the effects of scrambling on scope interaction.

3.1. Scope rigidity and preliminary assumptions on quantifier raising

Japanese is considered one of the typical languages with scope rigidity. Thus, the existential *dareka* ‘someone’ takes scope over the universal *daremo* ‘everyone’ in (20).

- (20) *Dareka -ga daremo -o aisite iru*
 someone-NOM everyone-ACC love
 ‘Someone loves everyone’ ($\exists > \forall$)

It is not clear whether this scope rigidity should be considered an absolute condition or even a property that is parameterized for a language. First, it specifies the strongly preferred reading but only the strongly preferred reading for speakers like me. Thus, the wide scope interpretation of *daremo* ‘everyone’ is much less preferred but is still possible in (20), and it is easier in this example than in (21), where the two quantified NPs are separated by a CP boundary.

- (21) *Dareka -ga [_{CP}daremo -ga Taroo-o aisite iru to] omotte iru*
 someone-NOM everyone-NOM -ACC love that think
 ‘Someone thinks that everyone loves Taroo’ ($\exists > \forall$)

Further, the condition is clearly relaxed when an indefinite NP is substituted for the existential quantifier. Responding to a claim in Lasnik and Saito (1992) that scope rigidity obtains in English as well, Chierchia (1992) presents examples such as the following as uncontroversial cases where the condition fails:

- (22) a. *A soldier was standing in front of every entrance*
 b. *An expert has inspected every plane*

In (22a), for example, the inverse reading is not only possible but is the normal interpretation of the sentence. However, when the subject position is occupied by an indefinite NP and the VP-internal universal quantifier is a complex expression as in (22), rigidity is not observed in Japanese either as (23) shows.⁶

- (23) a. *Heetai-ga dono mon-no mae-ni-mo tatte ita*
 soldier-NOM which gate -GEN front-at-also standing was
 ‘A soldier was standing in front of every gate’

- b. *Gisi -ga dono hikooki-mo tenkensita*
 mechanic-NOM which plane -also inspected
 ‘A mechanic inspected every plane’

The normal interpretation of (23a), for example, is the one with the distributive reading of ‘every gate’, and not the one that says there was a soldier who was standing in front of every gate.

Nevertheless, it remains a fact that the strongly preferred reading for examples like (20) is the one that observes scope rigidity. Hence, I will assume the generalization and confine the discussion to the scope interaction of *dareka* ‘someone’ and *daremo* ‘everyone’. I will assume further that scope rigidity is explained by a constraint on the application or output of quantifier raising (QR), as suggested in Huang (1982), Hoji (1985), and Lasnik and Saito (1992). But before a concrete mechanism for scope rigidity is presented, some remarks on the status of QR are in order.

In classical works on QR, such as May (1977), the movement is assumed to apply in the mapping from S-structure to LF. The derivation of (24) is, then, as in (25).

(24) *John wonders who_i t_i saw everyone*

- (25) D-structure: $[_{TP} \text{John wonders } [_{CP} \Delta [_{TP} \text{who saw everyone}]]]$
 S-structure: $[_{TP} \text{John wonders } [_{CP} \text{who}_i [_{TP} t_i \text{ saw everyone}]]]$
 (by wh-movement)
 LF: $[_{TP} \text{John wonders } [_{CP} \text{who}_i [_{TP} \text{everyone}_j [_{TP} t_i \text{ saw } t_j]]]]]$
 (by QR)

Here, QR adjoins the quantified NP *everyone* to TP (or alternatively to $\nu P/VP$) in the LF component. However, once cyclic interpretation is assumed, there cannot be an independent component for covert movement. Let us consider the embedded CP phase of (24) to illustrate the point.

- (26) $[_{CP} \text{who } [_{TP} \text{who } \text{saw } \text{everyone}]]]$
 $\{\pi, O, \text{arg}\} \quad \{\pi, \Theta, \text{arg}\} \quad \{\pi, q, \text{arg}\}$

When the CP is constructed as in (26), the shaded TP is transferred to semantics. But this implies that QR must have applied to the quantified NP *everyone* by then. In other words, QR must raise *everyone* as the embedded CP is constructed, before the derivation moves on to the matrix clause. The

application of covert movement, then, must be interwoven with that of overt movement.

This interwoven application of overt and covert movements has been suggested in the literature together with concrete mechanisms to make it technically possible. For example, Bobaljik (1995), among others, suggests that there is no distinction between overt and covert movements except that the phonetic features are retained at the initial site in the case of the latter. Then, the derivation of the embedded CP in (24) proceeds as in (27) with overt wh-movement and covert QR applying in a single cycle.

(27) $[_{CP} \textit{who} \quad [_{TP} \textit{everyone} \quad [_{TP} \textit{who} \quad \textit{saw everyone}]]]$
 $\{\pi, O, \text{arg}\} \quad \{\pi, q, \text{arg}\} \quad \{\pi, \Theta, \text{arg}\} \quad \{\pi, \text{q}, \text{arg}\}$

Another possibility proposed in Nissenbaum (2000) is that covert movement applies within each phase after Spell-Out but before information is sent to semantics. This theory states in essence that there are overt and covert “components” within each phase. I will adopt Bobaljik’s analysis here, but at the same time, will assume for ease of exposition that QR is feature movement in the sense of Chomsky (1995) and raises only the q-feature. The derivation of the embedded CP in (24) is then as in (28).^{7,8}

(28) $[_{CP} \textit{who} \quad [_{TP} \textit{everyone} \quad [_{TP} \textit{who} \quad \textit{saw everyone}]]]$
 $\{\pi, O, \text{arg}\} \quad \{q\} \quad \{\pi, \Theta, \text{arg}\} \quad \{\pi, \text{q}, \text{arg}\}$

Let us now return to the rigidity effects. The relevant example (20) is repeated below in (29).

(29) *Dareka -ga daremo -o aisite iru*
 someone-NOM everyone-ACC love
 ‘Someone loves everyone’ ($\exists > \forall$)

I will assume tentatively that scope rigidity results from the following minimality constraint on the application of QR:

(30) QR does not raise a q-feature across another q-feature.

This allows the two derivations in (31) for (29).

- (31) a. $[_{TP} \text{Dareka-ga } [_{TP} \text{daremo-o } [_{TP} \text{dareka-ga } [_{vP} \text{daremo-o aisite iru}]]]]$
 {q} {q} { π , \mathfrak{q} , arg} { π , \mathfrak{q} , arg}
- b. $[_{TP} \text{Dareka-ga } [_{TP} \text{dareka-ga } [_{vP} \text{daremo-o } [_{vP} \text{daremo-o aisite iru}]]]]$
 {q} { π , \mathfrak{q} , arg} {q} { π , \mathfrak{q} , arg}

(31a) is allowed if “tucking-in” in the sense of Richards (2001) is possible. The q-feature of *dareka* ‘someone’ can be raised first with the deletion of the feature in the subject position. Then, QR can raise the q-feature of *daremo* ‘everyone’ beneath that of *dareka*. (31b) is more straightforward. QR adjoins the q-features of *dareka* and *daremo* to TP and vP respectively. Neither application of QR is in violation of (30). What (30) excludes is the derivation in (32), which yields the wide scope interpretation of *daremo*.

- (32) $[_{TP} \text{Daremo-o } [_{TP} \text{dareka-ga } [_{TP} \text{dareka-o } [_{vP} \text{daremo-o aisiteiru}]]]]$
 {q} {q} { π , \mathfrak{q} , arg} { π , \mathfrak{q} , arg}

Thus, (30) successfully describes scope rigidity.

3.2. The effects of scrambling on quantifier scope

With the preliminary assumptions introduced in the preceding section, I will now examine the effects of scrambling on quantifier scope and their implications for the interpretation of scrambling chains. It was shown above that Japanese exhibits scope rigidity. However, as originally pointed out by Kuroda (1971), the application of scrambling yields counter-examples to this generalization.^{9,10} Thus, the distributive reading of *daremo* ‘everyone’ is readily available in both (33a) and (33b).

- (33) a. *Daremo -o_i dareka -ga t_i aisite iru*
 everyone-ACC someone-NOM love
 ‘Someone loves everyone’ ($\forall > \exists$, $\exists > \forall$)
- b. *Dareka -o_i daremo -ga t_i aisite iru*
 someone-ACC everyone-NOM love
 ‘Everyone loves someone’ ($\forall > \exists$, $\exists > \forall$)

This shows that scrambling can affect quantifier scope and its application yields scope ambiguity.

On the other hand, it has been pointed out by Oka (1990), Tada (1993), and Abe (1993), among others, that only clause-internal scrambling induces the scope ambiguity just described. (34), which is derived by long scrambling, is unambiguous and does not allow the wide scope construal of *daremo*, in distinction with (33a).¹¹

- (34) *Daremo* -*o*_i *dareka* -*ga* [_{CP}[_{TP}*Taroo-ga* *t_i aisiteiru*] *to*] *itta* (*koto*)
 everyone-ACC someone-NOM -NOM love that said fact
 ‘Someone said that Taroo loves everyone’ (∃ > ∀)

The semantic effect of scrambling in (33) as well as its absence in (34) call for an explanation.

Let us first consider the examples in (33). The ambiguity of these examples indicates that the q-feature of the scrambled phrase can be retained either at the landing site or at the initial position, as illustrated in (35).

- (35) a. [_{TP} *NP₁* [_{NP₂} ... [_{VP} ... *NP₁* ...]]]
 {π, q, ~~arg~~} {π, q, arg} {κ, κ, arg}
 b. [_{TP} *NP₁* [_{NP₂} ... [_{VP} ... *NP₁* ...]]]
 {π, κ, ~~arg~~} {π, q, arg} {κ, q, arg}

If the purpose of QR is to assign scope to a quantified phrase and to establish a quantifier-variable relation, this is already achieved with scrambling in the case of *NP₁* in (35a). The q-feature of this NP takes sentential scope and binds the arg-feature in the object position. Let us then say that QR applies only to *NP₂* in this example to yield (36).

- (36) [_{TP} *NP₁* [_{NP₂} [_{NP₂} ... [_{VP} ... *NP₁* ...]]]]
 {π, q, ~~arg~~} {q} {π, κ, arg} {κ, κ, arg}

This is the only form that can be derived from (35a) by QR because (30) prohibits QR from raising a q-feature across another q-feature. The interpretation obtained is the one in which *NP₁* takes wide scope over *NP₂*.

The fact that (33) allows the narrow scope construal of the scrambled object seems to indicate that the scrambling chain can be interpreted as in (35b) as well. However, (35b) is a little strange to say the least. If deletion of features applies to create a proper chain for interpretation, the q-feature must be retained at a position where it can take scope. This, in turn, implies that the q-feature of *NP₁* should be retained at the landing site and not at the

object position. But provided that covert movement need not follow overt movement, (35b) can be revised slightly to avoid this problem. That is, QR can apply to both NP₁ and NP₂ before NP₁ is scrambled to the sentence-initial position, as illustrated in (37).

- (37) a. $[_{TP} NP_2 [_{TP} NP_2 \dots [_{vP} NP_1 [_{vP} \dots NP_1 \dots]]]]$
 {q} {π, q, arg} {q} {π, q, arg} (by QR)
- b. $[_{TP} NP_1 [NP_2 [_{TP} NP_2 \dots [_{vP} NP_1 [_{vP} \dots NP_1 \dots]]]]]]$
 {π, ~~arg~~} {q} {π, arg} {q} {π, arg} (by scrambling)

In (37a), both NP₁ and NP₂ are raised by QR in a way consistent with the rigidity condition in (30).¹² Then, in (37b), NP₁ in the object position, which now lacks the q-feature, is scrambled to the sentence-initial position. This derivation yields the narrow scope reading of NP₁ and hence, the ambiguity in (33) is correctly predicted.

The account for (33) presented above would predicts ambiguity in (34) as well. This is so because scrambling can carry the q-feature of the embedded object to the initial position of the matrix clause as in (38).

- (38) a. $[_{CP} Daremo-o [_{TP} \dots daremo-o \dots]]$
 {π, q, ~~arg~~} {π, q, arg}
- b. $[_{TP} Daremo-o [dareka-ga [dareka-ga \dots [_{CP} daremo-o [_{TP} \dots]]]]]]$
 {π, q} {q} {π, q, arg} {π, q}

Daremo-o ‘everyone-ACC’ is first moved to the edge of the embedded CP phase as in (38a). The embedded TP is transferred to semantics at this point. In the matrix clause shown in (38b), the quantified NP moves on to the sentence-initial position by scrambling and the q-feature of the matrix subject is raised by QR to take scope. As the information of the shaded part is sent to semantics, *daremo-o* is assigned scope over *dareka-ga* ‘someone-NOM’. This derivation must be blocked somehow because (34) does not allow the wide scope reading of the scrambled embedded object.

Here, a comparison between the scrambling of quantified NPs and wh-movement seems useful. With wh-movement, a wh-phrase can move out of a CP and take scope at the landing site.

- (39) $[_{CP} Who_i does [_{TP} John think [_{CP} that [_{TP} Mary saw t_i]]]]]$

What (34) shows is that scrambling does not allow a q-feature to take scope at the landing site in a similar situation. Another difference between the wh-movement in (39) and the scrambling in (34) is that the Operator-feature of the wh-phrase is selected and licensed by the C head at the landing site while the q-feature is not licensed by any specific head. Then, it is reasonable to assume that the q-feature must be licensed in some other way. Suppose then that a q-feature is licensed as a quantifier by virtue of binding a variable within its chain. The idea is that a phrase that is not licensed by a head either as an argument or as an operator will be construed as a modifier, e.g., as an adverbial phrase in this case, unless it binds a variable. And suppose further that when syntax transfers information to semantics, every element within the information unit must be properly licensed. The proposal is summarized in (40).

- (40) a. When the derivation of a phase HP is completed, syntax transfers the complement of H to semantics. The transfer applies cyclically and in a non-redundant way: the information that was already transferred to semantics in previous cycles is excluded from the present transfer operation.
- b. Every element in the structure that is transferred to semantics must be properly licensed within that structure. An arg-feature is licensed by a θ -role assigning (or agreement inducing) head, an Operator-feature is licensed by an operator-selecting C head, and a q-feature is licensed by virtue of binding a variable within its chain.

(40b) amounts to saying that Full Interpretation (FI) in the sense of Chomsky 1986 applies to each information unit that syntax sends to semantics.

The proposal above blocks the derivation in (38) as desired. When the derivation of the matrix clause is completed as in (38b), the shaded part is transferred to semantics. The q-feature of *dareka-ga* ‘someone-NOM’ is properly licensed as it binds the arg-feature in the subject position. However, that of *daremo-o* ‘everyone-ACC’ does not bind any arg-feature and hence, violates (40b). Note that (40) correctly allows the narrow scope reading of *daremo-o*. More specifically, the following derivation is possible:

- (41) a. $[_{CP} \text{Daremo-o } [_{TP} \text{daremo-o } [_{TP} \dots \text{daremo-o } \dots]]]$
 $\{ \pi, \text{arg} \} \quad \{ q \} \quad \{ \# , \text{q}, \text{arg} \}$
- b. $[_{TP} \text{Daremo-o } [\text{dareka-ga } [\text{dareka-ga } \dots [_{CP} \text{daremo-o } [_{TP} \dots]]]]]$
 $\{ \pi \} \quad \{ q \} \quad \{ \pi, \text{q}, \text{arg} \} \quad \{ \# \}$

In the embedded CP, the q-feature of *daremo-o* ‘everyone-ACC’ is raised by QR and its remaining features are scrambled to the edge of the phase. The embedded TP is sent to semantics with the q-feature properly binding an arg-feature.¹³ In the matrix CP, the q-feature of *dareka-ga* ‘someone-NOM’ is raised by QR and the phonetic features of *daremo-o* are scrambled to the sentence-initial position. All features are properly licensed in this phase as well. Thus, (34) is successfully derived with *daremo-o* taking embedded scope.

Before concluding this section, I will briefly discuss two implications of the analysis proposed above. First, QR, as conceived here, may tie some loose ends in the analysis of the examples with anaphors and bound pronouns discussed in Section 2. Let us consider again (5b) and (6), repeated below as (42a–b).

- (42) a. $?*[_{TP}[Otagai \text{ -no } sensei]\text{-ga } karera\text{-o } hihansita](koto)$
 each other-GEN teacher-NOM they -ACC criticized fact
 ‘Lit. Each other’s teachers criticized them’
- b. $?[_{TP}Karera\text{-o}_i [[otagai \text{ -no } sensei]\text{-ga } t_i hihansita]](koto)$
 they -ACC each other-GEN teacher-NOM criticized fact

The derivations of (42a–b) are shown in (43a–b) respectively.

- (43) a. $[_{TP}[Otagai\text{-no } sensei]\text{-ga } karera\text{-o } hihansita]$
 $\{\pi, \text{arg}\}$
- b. $[_{TP}Karera\text{-o} [[otagai\text{-no } sensei]\text{-ga } karera\text{-o } hihansita]]$
 $\{\pi, \text{arg}\} \quad \{\pi, \text{arg}\}$

The grammaticality of (42b) was attributed to the fact that the arg-feature of *karera* ‘they’ c-commands *otagai* ‘each other’ at one point of the derivation, as indicated in (43b).

But if the analysis ends here, then *otagai* is not bound in the structure transferred to semantics. This seems undesirable because reciprocal interpretation involves some sort of variable binding. The interpretation of (44a), for example, is as in (44b).

- (44) a. *John and Mary praised each other*
 b. $[\forall x: x \in \{John, Mary\}][\forall y: y \in \{John, Mary\} \& y \neq x] x \text{ praised } y$

violation of (40b) can be avoided if the q-feature is raised by QR within the embedded TP and retained there, as shown in (48).

- (48) [_{CP} Karera-o [_{TP} karera-o [_{TP} Tanaka-ga karera-o hihansita] to]
 { π , ~~arg~~} {q} { π , σ , arg}

But then it will fail to bind *otagai* in the matrix clause.

The second implication that I would like to mention is that (40b) derives the clause-boundedness of QR in the majority of relevant cases. It is generally assumed that *everyone* can take scope over *someone* in (49a) but not in (49b).

- (49) a. *Someone loves everyone*
 b. *Someone thinks that John loves everyone*

It seems then that a quantified NP in an embedded clause cannot have scope over elements in the matrix.

The same phenomenon is observed in Japanese. As mentioned earlier in this section, the wide scope reading of *dareka* ‘someone’ is strongly preferred in (50a), due to scope rigidity.

- (50) a. *Dareka -ga daremo -o aisite iru*
 someone-NOM everyone-ACC love
 ‘Someone loves everyone’
 b. *Dareka -ga [_{CP} Taroo-ga daremo -o aissiteiru to]*
 someone-NOM -NOM everyone-ACC love that
omotte iru (koto)
 think fact
 ‘Someone thinks that Taroo loves everyone’

However, there is still a distinction between (50a) and (50b). The wide scope reading of *daremo* ‘everyone’ is simply impossible in (50b). This suggests that there is a condition, independent of rigidity, that prevents *daremo* from taking matrix scope. The point comes out more clearly in (51).

- (51) a. *Heetai-ga dono mon-no mae -ni-mo tatte ita*
 soldier-NOM which gate-GEN front-at-also standing was
 ‘A soldier was standing in front of every gate’

- b. *Heetai-ga* [_{CP} *Taroo-ga dono mon-no mae -ni-mo tatte*
 soldier-NOM -NOM which gate-GEN front-at-also standing
iru to] *itta (koto)*
 is that said fact
 ‘A soldier said that Taroo was standing in front of every gate’

As noted above, (51a), which has an indefinite subject, is ambiguous. But (51b), in clear contrast, does not have the ambiguity. It can only mean that a soldier said something absurd, and cannot mean that ‘for every gate, there was a soldier who said that Taroo was standing in front of it’.

These facts follow from (40b) straightforwardly. If *everyone* is to have wide scope in (49b), the example would have to have the following derivation:

- (52) a. [_{CP} *everyone* that [_{TP} *John loves everyone*]]
 {q} {π, q, arg}
- b. [_{TP} *everyone* [_{TP} *someone* [_{TP} *someone* thinks [_{CP} *everyone* that [_{TP}...]]]]]
 {q} {q} {π, q, arg} {q}

In (52a), the q-feature of *everyone* is moved to the edge of the embedded CP and the embedded TP is transferred to semantics. Then, in (52b), QR adjoins both *everyone* and *someone* to the matrix TP. This would yield the wide scope interpretation of *everyone*, but (52b) is in violation of (40b). The q-feature of *everyone* does not bind any arg-feature in the structure sent to semantics and hence, is not properly licensed. This feature must be raised to the embedded TP by QR as in (53) in order to satisfy (40b).

- (53) [_{CP} that [_{TP} *everyone* [_{TP} *John loves everyone*]]
 {q} {π, q, arg}

But then, it must take embedded scope.

In this section, I have proposed an analysis for the effects of scrambling on quantifier scope. The main fact to be accounted for was that clause-internal scrambling, but not long scrambling, allows a preposed quantified phrase to take scope at the landing site. In order to explain this fact, I suggested that a q-feature is licensed by virtue of binding a variable within its chain, and that every feature that participates in compositional semantics must be licensed internal to the structure syntax transfers to semantics. This subsumes a large part of the initial hypothesis on chain interpretation presented

in (3). Operator-features and arg-features are retained at positions where they are selected, because these are positions where they are licensed and can satisfy Full Interpretation. Suppose, for example, that an Operator-feature is deleted at CP Spec as in (54).

- (54) [_{CP} Who did [_{TP} John see who]]
 { π , Θ , arg } { # , O , arg }

Then, when the TP is sent to semantics, the Operator-feature in the object position can neither be licensed nor be interpreted.

I have argued further that the proposals made in this section enable us to refine the analysis of the A/A' properties of scrambling and to explain the clause-boundedness of QR in the representative cases. I will apply the account for the clause-boundedness of QR to negative polarity items in Japanese in the following section, where it will be shown that they exhibit basically the same distribution as quantified NPs.

4. Negative polarity licensing

I will now turn to negative polarity items in Japanese and discuss their distribution as well as their radical reconstruction patterns. The analysis of those negative polarity items is quite controversial and the judgments of the relevant examples are often unclear, as will be seen in the following pages.¹⁵ But I will present a tentative analysis for them and explore its consequences because they provide important hints for the investigation of the precise nature of radical reconstruction and covert movement.

The particular negative polarity item that will be examined has the form *XP-sika*. Examples are provided in (55) and (56).¹⁶

- (55) a. *Taroo-sika soko-ni ik-ana-katta*
 -SIKA there-to go-not -past
 'Only Taroo went there'
- b. *Taroo-ga soko-ni-sika ik-ana-katta (koto)*
 -NOM there-to-SIKA go-not -past fact
 'Taroo only went there' (It is only there that Taroo went)
- (56) a. *Sono nimotu -sika Tookyoo-kara todok-ana-katta*
 that luggage-SIKA -from arrive-not -past
 'Only that luggage arrived from Tokyo'

- b. *Nimotu -ga Tookyoo-kara-sika todok-ana-katta*
 luggage-NOM -from-SIKA arrive-not-past
 ‘Luggage arrived only from Tokyo’ (It is only from Tokyo that luggage arrived)

XP-sika, combined with sentential negation, yields the interpretation ‘only XP’, as illustrated in these examples. Thus, (55 a), for example, means that only Taroo went there or that no one but Taroo went there.

XP-sika is considered a negative polarity item because it can only appear in a negative sentence. (55 a–b), for example, are totally ungrammatical without the negation morpheme, as shown in (57).¹⁷

- (57) a. **Taroo-sika soko-ni it -ta*
 -SIKA there-to go-past
 b. **Taroo-ga soko -ni-sika it -ta (koto)*
 -NOM there-to-SIKA go-past fact

In the following subsection, I will go over the basic distribution of *XP-sika* in sentences with and without scrambling, and suggest an analysis. Then, in Section 4.2, I will discuss the blocking effect that negative polarity items have on *wh*-construal, a phenomenon discussed in detail in Takahashi (1990), Kim (1991) and Beck and Kim (1997). It will be shown that the analysis predicts the presence/absence of the blocking effect correctly, confirming the approach to radical reconstruction proposed in this paper. Among the consequences of the analysis are that covert movement, as opposed to overt movement, is not subject to the extension condition, and that the requirement that *wh*-phrases must be licensed by a [+Q] comp is an anywhere condition exactly like the licensing conditions on anaphors and bound pronouns.

4.1. The distribution of *XP-sika*

Although *XP-sika* has been treated as a negative polarity item, it has been known that its distribution is different from the English negative polarity *any*. For example, *XP-sika* can appear in the subject position of a negative sentence as shown in (55a) and (56a), but this is impossible with *any*.

- (58) a. *John did not see anyone*
 b. **Anyone did not see John*

Further, *XP-sika* must be clause-mates with the licensing negation, as shown in (59) and (60).

- (59) a. *Hanako-ga* [_{CP} *Taroo-ga soko -ni-sika ik-ana-katta to*]
 -NOM -NOM there-to-SIKA go-not -past that
 Ziroo-ni itta (koto)
 -to said fact
 ‘Hanako said to Ziroo that it was only there that Taroo went’
- b. *?*Hanako-ga* [_{CP} *Taroo-ga soko -ni-sika it -ta to*] *Ziroo-ni*
 -NOM -NOM there-to-SIKA go-past that -to
 iw -ana-katta (koto)
 say-not-past fact
 ‘It is only there that Hanako said to Ziroo that Taroo went’
- (60) a. *Hanako-ga* [_{CP} *nimotu -ga Tookyoo-kara-sika todok-ana-katta*
 -NOM luggage-NOM -from-SIKA arrive-not -past
 to] *Ziroo-ni it -ta (koto)*
 that -to say-past fact
 ‘Hanako said to Ziroo that it was only from Tokyo that luggage
 arrived’
- b. *?*Hanako-ga* [_{CP} *nimotu -ga Tookyoo-kara -sika todoi -ta to*]
 -NOM luggage-NOM -from-SIKA arrive-past that
 Ziroo-ni iw -ana-katta (koto)
 -to say-not-past fact
 ‘It is only from Tokyo that Hanako said to Ziroo that luggage
 arrived’

In the ungrammatical (59b) and (60b), *XP-sika* is contained in the embedded CP while negation appears in the matrix. This clause-mate condition is not observed with *any*, as (61) shows.

- (61) *John did not say that Mary saw anyone*

(62a–b) show that the examples are even worse when negation is within the embedded CP and *XP-sika* is a matrix constituent.

- (62) a. **Hanako-sika* [_{CP} *Taroo-ga soko-ni ik-ana-katta to*] *Ziroo-ni*
 -SIKA -NOM there-to go-not-past that -to
it -ta (koto)
 say-past fact
- b. **Hanako-sika* [_{CP} *nimotu-ga Tookyoo-kara todok-ana-katta*
 -SIKA luggage-NOM -from arrive-not-past
to] *Ziroo-ni it -ta (koto)*
 that -to say-past fact

Thus, what is imposed on the relation between *XP-sika* and negation is literally a clause-mate condition.

The examples presented above clearly indicate that *XP-sika* can be interpreted only with negation. Putting aside the investigation of the precise structural relation required of *XP-sika* and Neg, I will assume that the former must be raised by QR and satisfy the following condition in order to receive proper interpretation:

- (63) The NPI-feature of *XP-sika* must have a negative sentence as its scope.

Then, (55b), repeated in (64), is derived as in (65).

- (64) *Taroo-ga soko-ni-sika ik-ana-katta (koto)*
 -NOM there-to-SIKA go-not-past fact
 ‘Taroo only went there’ (It is only there that Taroo went)
- (65) [_{TP} *sono-ni-sika* [_{TP} *Taroo-ga soko-ni-sika ik-ana-katta*]]
 {NPI} {π, ~~NPI~~, r}

The ungrammaticality of (62a–b) follows straightforwardly because the NPI-feature must be lowered to the embedded TP in order to satisfy (63) in those example.

The remaining cases to be accounted for are (59b) and (60b), where *XP-sika* is in the embedded clause and Neg is in the matrix. The derivation of (59b) is shown in (66).

- (66) a. [_{CP} *soko-ni-sika* [_{TP} *Taroo-ga soko-ni-sika it-ta to*]]
 {NPI} {π, ~~NPI~~, arg}
- b. [_{TP} *soko-ni-sika* [_{TP} *Hanako-ga* [_{CP} *soko-ni-sika* [_{TP} ...] *to*] *Ziroo-ni*
 {NPI} {~~NPI~~}
iw-ana-katta]]

The NPI-feature is first raised to the edge of the embedded CP as in (66a), and the embedded TP is transferred to semantics. Then, the feature is raised in the matrix clause so that it takes a negative sentence as its scope. Here, if an NPI-feature needs to bind a variable just like a q-feature, in addition to taking a negative sentence as its scope, then (66b) is excluded in exactly the same way as (52b). That is, when the shaded part of (66b) is transferred to semantics, the NPI-feature violates Full Interpretation since it is not fully licensed. Thus, the clause-mate condition on *XP-sika* is accounted for as an instance of the clause-boundedness of QR.

The unified treatment of *XP-sika* and quantified phrases receives support from the fact that the former exhibits radical reconstruction effects precisely as the latter. As discussed in detail in Tanaka (1997), examples like (67a–b), which apparently violate the clause-mate condition, are grammatical.

- (67) a. [_{TP} *Soko-ni-sika*_i [_{Hanako-ga} [_{CP} *Taroo-ga* *t_i ik-ana-katta to*]
 there-to-SIKA -NOM -NOM go-not-past that
 Ziroo-ni it -ta]] (*koto*)
 -to say-past fact
 ‘Hanako said to Ziroo that it was only there that Taroo went’
- b. [_{TP} *Tookyoo-kara-sika*_i [_{Hanako-ga} [_{CP} *nimotu -ga t_i*
 -from-SIKA -NOM luggage-NOM
 todok-ana-katta to] *Ziroo-ni it -ta*]] (*koto*)
 arrive-not -past that -to say-past fact
 ‘Hanako said to Ziroo that it was only from Tokyo that luggage
 arrived’

These examples can be analyzed in the same way as those with long scrambling of quantified phrases. Let us take (67a) to illustrate the point. In the embedded CP, the NPI-feature of *soko-ni-sika* can be raised covertly to TP and its remaining features can be copied at CP Spec, as shown in (68a). Or alternatively, *soko-ni-sika* can first scramble to TP and then to CP Spec as in (68a’).

- (68) a. [_{CP} *Soko-ni-sika* [_{TP} *soko-ni-sika* [_{TP} *Taroo-ga sono-ni-sika ik-ana-katta*]] *to*]
 { π , **arg**} {NPI} { π , NPI, **arg**}
- a’. [_{CP} *Soko-ni-sika* [_{TP} *soko-ni-sika* [_{TP} *Taroo-ga sono-ni-sika ik-ana-katta*]] *to*]
 { π , NPI, **arg**} { π , NPI, **arg**} { π , NPI, **arg**}

- b. $[_{TP} \text{Soko-ni-sika} [_{Hanako-ga} [_{CP} \text{soko-ni-sika} [_{TP} \dots] \text{to}] \text{Ziroo-ni it-ta}]]$
 $\{\pi\}$ $\{\#\}$

Either way, chain interpretation yields the same distribution of the features: the phonetic features are in CP Spec, the NPI-feature takes the negative TP as its scope, and the arg-feature remains in the object position. At this point, the embedded TP is ready to be transferred to semantics. In particular, the NPI-feature is in a position that satisfies (63) as well as Full Interpretation. Then, the phonetic features of the scrambled phrase move on to the matrix TP as in (68b) and the derivation is completed.

I argued above that *XP-sika* is to be analyzed in exactly the same way as quantified phrases and that the only difference between the two is that the former must satisfy (63) in addition so that it can be interpreted properly. Before I conclude this subsection, I would like to briefly discuss one pattern that is potentially problematic for the analysis just presented and suggest that the problem is only apparent.

It has been claimed in some works, such as Tanaka (1977), that the clause-mate condition on *XP-sika* and negation can be satisfied as a result of long scrambling. Thus, (69a–b) are indeed far better than their counterparts without scrambling, i.e., (59b) and (60b).

- (69) a. ? $[_{TP} \text{Soko-ni-sika}_i [_{Hanako-ga} [_{CP} \text{Taroo-ga } t_i \text{ it-ta to}] \text{Ziroo-ni iw-ana-katta}]]$ (koto)
 there -to-SIKA -NOM -NOM go-past that
 -to say-not-past fact
 ‘It is only there that Hanako said to Ziroo that Taroo went’
- b. ?? $[_{TP} \text{Tookyoo-kara-sika}_i [_{Hanako-ga} [_{CP} \text{nimotu-ga } t_i \text{ todoi-ta to}] \text{Ziroo-ni iw-ana-katta}]]$ (koto)
 -from-SIKA -NOM luggage-NOM
 arrive-past that -to say-not-past fact
 ‘It is only from Tokyo that Hanako said to Ziroo that luggage arrived’

This is totally unexpected under the analysis just presented. The NPI-feature must take matrix scope in these examples, and consequently, the derivation of (69a), for example, must proceed as in (70).

- (70) a. [_{CP} *Soko-ni-sika* [_{TP} *Taroo-ga sono-ni-sika it-ta*] *to*]
 { π , NPI, ~~arg~~} { π , NPI, arg}
- b. [_{TP} *Soko-ni-sika* [*Hanako-ga* [_{CP} *soko-ni-sika* [_{TP} ...] *to*] *Zi-roo-ni*
 { π , NPI} { π , NPI}
iw-ana-katta]]

Soko-ni-sika first moves to the embedded CP Spec as shown in (70a). The NPI-feature is retained at the landing site so that it can move further to take the matrix negative TP as its scope as in (70b). But then, the NPI-feature does not bind a variable within the information unit transferred to semantics. Thus, it violates Full Interpretation and the example is predicted to be as ungrammatical as (59b), repeated below as (71).

- (71) ?**Hanako-ga* [_{CP} *Taroo-ga soko-ni-sika it-ta to*] *Zi-roo-ni*
 -NOM -NOM there-to-SIKA go-past that -to
iw-ana-katta (*koto*)
 say-not-past fact
 'It is only there that Hanako said to Zi-roo that Taroo went'

But there is evidence that the problem posed by examples like (69) may only be apparent. That is, examples such as (72) suggest that phrases of the form *XP-sika* can marginally be "base-generated" in a position adjoined to a negative sentence, at least in some cases.

- (72) ??*Yuukon-kara-sika_i Taroo-ga* [_{NP} [_{TP} *e_i okur-arete ki-ta*]
 UConn-from-SIKA -NOM send-passive come-past
hakaseronbun]-o yom-ana-i (*koto*)
 dissertation -ACC read-not-pres. fact
 'Taroo reads only those dissertations that were sent from UConn'

In this example, the sentence-initial *XP-sika* is associated with a position within a relative clause. It is then tempting to attribute the marginality of the example to Subjacency. However, as far as I can tell, the example is better than its counterpart without *-sika* shown in (73).

- (73) ?**Yuukon-kara_i Taroo-ga* [_{NP} [_{TP} *t_i okur-arete ki-ta*]
 UConn -from -NOM send-passive come-past
hakaseronbun]-o yom-ana-i (*koto*)
 dissertation -ACC read-not-pres. fact
 'Taroo does not read those dissertations that were sent from UConn'

(73) is a clear case of a Subjacency violation. Hence, if the contrast between (72) and (73) is real, it suggests that the former need not be derived by scrambling. It seems then that *XP-sika* can be merged directly with a negative sentence, although with some marginality. And if this is the case, the option should be available for (69 a–b) as well.

Examples like (72) are abundant. Thus, (74) is also better than expected.

- (74) ??(*Ahurika-no kuni -de-wa*) *Eziputo-ni-sika_i Taroo-wa* [_{NP} [_{TP} *e_i*
Africa -GEN country-in -TOP -to-SIKA -TOP
it -ta koto-ga ar -u] *hito*] -ni at -ta koto-ga
go-past fact -NOM have-pres. person-to meet-past fact -NOM
na -i
not-pres.
‘*Lit.* (Among the African countries,) Egypt is the only place that
Taroo has met someone who has been to’

I will hence tentatively conclude that cases like (69), where long scrambling appears to save a clause-mate condition violation, involves direct merger of *XP-sika* with a negative TP.¹⁸

4.2. Blocking effects on wh-construal

In this subsection, I will discuss the blocking effect that *XP-sika* has on wh-construal.¹⁹ The purpose of the discussion is two-fold. First, the relevant phenomenon will provide a good testing ground for the account of *XP-sika* proposed above. Secondly, examples of this blocking effect have sometimes been cited as evidence against the radical reconstruction of scrambling. It is therefore desirable to examine whether they are consistent with the analysis of scrambling proposed in this paper.

Typical examples of the blocking effect are shown in (75) and (76).

- (75) a. *Nani-ga Tookyoo-kara-sika todok-ana-katta no*
what-NOM -from-SIKA arrive-not -past Q
‘What arrived only from Tokyo’
b. ?**Hon -sika doko -kara todok-ana-katta no*
book-SIKA where-from arrive-not -past Q
‘Where did only books arrived from’

- (76) a. *Dare-ga Taroo-ni-sika purezento-o okur-ana-katta no*
 who -NOM -to-SIKA gift -ACC send-not -past Q
 ‘Who sent gifts only to Taroo’
- b. *?*Taroo-sika dare-ni purezento-o okur-ana-katta no*
 -SIKA who-to gift -ACC send-not -past Q
 ‘Who did only Taroo send gifts to’

As can be seen in these examples, when *XP-sika* and a wh-phrase cooccur, the former cannot precede the latter, as schematized in (77).

- (77) **[CP [TP ... XP-sika ... [...wh ...] ... NEG ...] Q]*

I will assume here that in these cases the intervening NPI-feature of *XP-sika* blocks the association between the Q-morpheme in the [+wh] C and the wh-phrase.²⁰

The general consensus in the literature is that whether the blocking effect obtains or not depends on the surface positions of the relevant items. Thus, (75b) and (76b) become grammatical when the wh-phrase is scrambled to a position preceding *XP-sika*, as shown in (78).

- (78) a. *Doko -kara_i hon -sika t_i todok-ana-katta no*
 where-from book-SIKA arrive-not -past Q
- b. *Dare-ni_i Taroo-sika t_i purezento-o okur-ana-katta no*
 who -to -SIKA gift -ACC send-not -past Q

Similarly, (75a) and (76a) become degraded when *XP-sika* is scrambled to the sentence-initial position.²¹

- (79) a. *??Tookyoo-kara -sika_i nani-ga t_i todok-ana-katta no*
 -from-SIKA what-NOM arrive-not -past Q
- b. *??Taroo-ni-sika_i dare-ga t_i purezento-o okur-ana-katta no*
 -to-SIKA who-NOM gift -ACC send-not -past Q

As pointed out by Beck and Kim (1997) and others, examples like (79) pose a problem for the hypothesis that scrambling can be “undone” in LF. If scrambled phrases can be placed back in their initial positions at LF, these examples are indistinguishable from the perfectly grammatical (75a) and (76a) at that level. On the other hand, the analysis of scrambling and

radical reconstruction presented in this paper correctly predicts the blocking effect in these examples. The derivation of (79 a) is shown in (80).

- (80) [_{CP} [_{TP} *Tookyoo-kara-sika* [_{nani-ga} *Tookyoo-kara-sika todok-ana-katta*] *no*]
 { π , NPI, ~~arg~~} { π , ~~NPI~~, arg}

Tookyoo-kara-sika is scrambled to the initial position as the TP is constructed. The NPI-feature is retained at the landing site because it is the position that allows the feature to take a negative sentence as its scope. After C merges with the TP, the Q-morpheme in C is associated with the wh-phrase *nani-ga* ‘what-NOM’. But the association is blocked by the intervening NPI-feature. Hence, scrambling causes the blocking effect in this case.

Given the analysis of *XP-sika* presented in this paper, the grammatical examples in (75 a), (76 a) and (78) have more interesting consequences. The derivation of (75 a) is illustrated in (81).

- (81) [_{CP} [_{TP} *Tookyoo-kara-sika* [_{TP} *nani-ga Tookyoo-kara-sika todok-ana-katta*] *no*]
 {NPI} { π , ~~NPI~~, arg}

In this case, the NPI-feature of *Tookyoo-kara-sika* is raised covertly to TP by QR so that it takes a negative sentence as its scope. The resulting configuration is similar to (80) with an NPI-feature intervening between the Q-morpheme and the wh-phrase. At the same time, there is one important difference between (80) and (81). That is, the NPI-feature is raised to TP overtly in (80) but covertly in (81). Let us consider (80) first. Since overt movement is subject to the extension condition, the NPI-feature already intervenes between the Q-morpheme and the wh-phrase when C and TP are merged. On the other hand, this is not necessarily the case in (81). If covert movement is not subject to the extension requirement, as seems reasonable, the NPI-feature can be raised by QR after the TP-C merger takes place. Then, there can be a point in the derivation when the Q-wh association is possible without an intervener. Hence, the grammaticality of (75a) suggests (82a) as well as (82b).

- (82) a. Q-wh association can take place in the course of the derivation.
 b. Covert movement, in distinction with overt movement, is not subject to the extension requirement.

(82a), in turn, suggests that the relation of a wh-phrase to the associated Q-morpheme is similar to that of an anaphor/bound pronoun to its antecedent. It was argued in Section 2 that Condition (A), for example, is an anywhere condition. (82a) makes sense if wh-phrases, like anaphors, are “antecedent seeking” elements and are licensed by binding (Q-wh binding). Licensing of this kind is to be distinguished from that of quantified phrases and *XP-sika* discussed above. The latter two are “binders” and their failure to bind a variable results in vacuous quantification. In addition, they must bind a variable within the information unit transferred to semantics in order to satisfy Full Interpretation. On the other hand, although anaphors, bound pronouns and wh-phrases are to be interpreted as bound variables, the required binding can take place across phase boundaries, as shown in (83).²²

- (83) a. [_{TP} *Karera-ga* [_{CP} [_{TP} *otagai -ga itiban yuusuu-da*] *to*]
 they -NOM each other-NOM best smart -is that
 omotte i -ru] (*koto*)
 thinking be-pres. fact
 ‘Lit. They think that each other are the smartest’
- b. [_{TP} *Dono kaisya -mo*_i [_{CP} [_{TP} *soko -ga*_i *itiban-da*] *to*] *itte*
 which company-also there-NOM best -is that saying
 i -ru] (*koto*)
 be-pres. fact
 ‘Every company is saying that it is the best’
- c. *Taroo-wa* [_{CP} [_{TP} *Hanako-ga nani-o katta*] *to*] *it -ta no*
 -TOP -NOM what-ACC bought that say-past Q
 ‘What did Taroo say that Hanako bought’

This shows that they can satisfy Full Interpretation by virtue of being licensed as arguments and can be transferred to semantics as interpretable objects without being bound. Hence, their licensing requirements must be independent of Full Interpretation.

The hypothesis that variables need not be bound to satisfy Full Interpretation is necessary even for a simple case of wh-movement like (84).

- (84) *What did John say Mary bought*

When the embedded CP is completed, the embedded TP is transferred to semantics as shown in (85).

- (85) [_{CP} *what* [_{TP} *Mary bought what*]]
 { π , O, **arg**} { π , Θ , **arg**}

The *arg*-feature of *what* in the object position is interpreted as a variable but is not bound within the TP. I will come back briefly to this issue in the following section.

Returning to the blocking effect, it was shown above that the analysis of scrambling and NPI-licensing proposed in this paper predicts that the radical reconstruction does not evade the effect in examples like (79). However, this is not the prediction for all cases. The analysis in fact predicts that there are cases where the blocking effect is evaded. Let us consider the concrete examples in (86).

- (86) a. [_{TP} *Soko-ni-sika_i [dare-ga [_{CP} *Taroo-ga t_i ik-ana-katta to*]
 there-to-SIKA who-NOM -NOM go-not-past that
Ziroo-ni it -ta]] no
 -to say-past Q
 ‘Who said to Ziroo that it was only there that Taroo went’*
- b. [_{TP} *Tookyoo-kara-sika_i [dare-ga [_{CP} *nimotu -ga t_i*
 -from-SIKA who-NOM luggage-NOM
todok-ana-katta to] Ziroo-ni it -ta]] no
 arrive-not-past that -to say-past Q
 ‘Who said to Ziroo that it was only from Tokyo that luggage arrived’*

In these examples, *XP-sika* is scrambled out of an embedded negative TP across a *wh*-phrase in the matrix clause. On the surface, *XP-sika* intervenes between the matrix Q-morpheme and the *wh*-phrase and hence, the configuration for the blocking effect obtains. Yet, the examples are far better than (87a–b), where negation is placed in the matrix TP.

- (87) a. ?*[_{TP} *Soko-ni-sika_i [dare-ga [_{CP} *Taroo-ga e_i it -ta to*]
 there-to-SIKA who-NOM -NOM go-past that
Ziroo-ni iw -ana-katta]] no
 -to say-not-past Q*
- b. ?*[_{TP} *Tookyoo-kara-sika_i [dare-ga [_{CP} *nimotu -ga e_i todoi -ta*
 -from-SIKA who-NOM luggage-NOM arrive-past
to] Ziroo-ni iw -ana-katta]] no
 that -to say-not-past Q*

This is exactly what is predicted by the analysis proposed in this paper. The derivation of (86a) is shown in (88).

- (88) a. [_{CP} Soko-ni-sika [_{TP} soko-ni-sika [_{TP} Taroo-ga soko-ni-sika ik-ana-katta]] to]
 { π , arg } {NPI} { K , NPI, arg }
- a'. [_{CP} Soko-ni-sika [_{TP} soko-ni-sika [_{TP} Taroo-ga soko-ni-sika ik-ana-katta]] to]
 { π , NPI, arg } { K , NPI, arg } { K , NPI, arg }
- b. [_{CP} [_{TP} Soko-ni-sika [dare-ga [_{CP} soko-ni-sika [_{TP} ...] to] Ziroo-ni it -ta]] no]
 { π } { K }

In the embedded CP phase, the NPI-feature of *XP-sika* can be raised to TP by QR and the rest of the features can scramble to CP Spec, as in (88a). Or alternatively, *XP-sika* can first scramble to TP and then to CP Spec, as in (88a'). Either way, the NPI-feature is retained at the position where it takes the negative TP as its scope and only the phonetic features appear in CP Spec. These phonetic features are further scrambled in the matrix clause across the wh-phrase *dare-ga* 'who-NOM', as shown in (88b). Since there is no NPI-feature that intervenes between the matrix Q and the wh-phrase in (88b), the example in (86a) should not exhibit the blocking effect despite the fact that it has the surface configuration in (77).²³

(87a–b), on the other hand, should show the blocking effect, since the NPI-feature must be at the matrix TP in those examples. According to the analysis suggested above, *XP-sika* is directly merged with the matrix negative TP, as in (89).

- (89) [_{CP} [_{TP} XP-sika [... wh ... Neg]] Q]

Hence, the NPI clearly intervenes between the Q-morpheme and the wh-phrase, and the examples constitute straightforward instances of the blocking effect, like (75b) and (76b).

In this section, I first assumed that Japanese NPIs must take a negative TP as its scope in order to be properly interpreted. This can be achieved by QR or by scrambling. Then, I argued that the distribution of the NPIs follows if they are subject to the same licensing condition as quantified phrases. That is, they must satisfy Full Interpretation within the information unit transferred to semantics by virtue of binding a variable in its chain. In particular, the clause-mate condition on an NPI and negation is explained in exactly the same way as the clause-boundedness of QR. I argued further that the proposed chain interpretation mechanism predicts correctly when a

scrambled NPI exhibits the blocking effect on the association of a Q-morpheme and a wh-phrase. This analysis also explains away those examples that are problematic for the simple-minded “undoing” conception of radical reconstruction.

5. Conclusion

The hypothesis entertained in this paper, (40), is repeated below as (90), with a slight modification to include the NPI-feature.

- (90) a. When the derivation of a phase HP is completed, syntax transfers the complement of H to semantics. The transfer applies cyclically and in a non-redundant way: the information that was already transferred to semantics in previous cycles is excluded from the present transfer operation.
- b. Every element in a structure transferred to semantics must be properly licensed within that structure. An arg-feature is licensed by a θ -role assigning (or agreement inducing) head, an Operator-feature is licensed by an operator-selecting C head, and a q-feature and an NPI-feature are licensed by virtue of binding a variable within its chain.

The most important proposal is the part of (90b) that states that q-features and NPI-features are licensed by virtue of binding a variable within its chain. It should be emphasized here that this is not an interpretive mechanism but a licensing condition. The basic idea is that the precise compositional role of each element must be explicitly specified when a syntactic structure is transferred to semantics. Thus, arguments and operators must be licensed by the selecting heads, and quantifiers must be identified as such by virtue of variable binding. In this sense, the proposal is intended to be a cyclic version of Full Interpretation, which requires every element to be interpretable at the interface.

The conditions that concern the actual references of NPs, for example, those that dictate the anaphoric relations of NPs, are not part of (90). Thus, the embedded object of (91) is transferred to semantics as part of the embedded TP, being licensed as an argument.

- (91) [_{CP} What do [_{TP} you think [_{CP} what [_{TP} John bought what]]]]
 { π , O} {arg}

Since it is interpreted as a variable, it must be bound and be provided with a range. But the required binding takes place across a phase boundary and the whole structure must be taken into consideration in order to check whether the required binding obtains. Similarly, the anaphor *himself* in (92) is transferred to semantics as part of the embedded TP, being licensed as an argument.

(92) [_{TP} John thought [_{CP} that [_{TP} pictures of himself would be on sale]]]

But its reference is fixed in a larger structure that contains it and its antecedent *John*.

Although anaphors and bound pronouns need not be bound within the information unit determined by phase, they must still be licensed by their antecedents. And this licensing requirement can be satisfied in the course of the derivation. Thus, (6), repeated below as (93), can be derived as in (94).

(93) ?[_{TP} *Karera-o_i* [[*otagai -no sensei*]-*ga t_i hihansita*]] (*koto*)
 they -ACC each other-GEN teacher-NOM criticized fact
 ‘Lit. Each other’s teachers criticized them’

(94) [_{TP} *Karera-o* [[*otagai-no sensei*]-*ga karera-o hihansita*]]
 { π , q , arg } { π , q , arg }

As argued in Section 2, the example is grammatical because *otagai* ‘each other’ is bound by the arg-feature of *karera* ‘they’ at one point of the derivation.

It was also argued in Section 2 that Condition (C), which is another condition on the referential relations among NPs, applies to the “output” of the derivation. The crucial example (18) is repeated in (95), together with its derivation in (96).

(95) [_{TP} *Zibunzisin-o_i* [*Taroo-ga t_i semeta*]] (*koto*)
 self -ACC -NOM blamed fact
 ‘Taroo blamed himself’

(96) [_{TP} *Zibunzisin-o* [*Taroo-ga zibunzisin-o semeta*]]
 { π , arg } { π , arg }

Condition (C) would exclude this example if it were an everywhere condition applying throughout the derivation.

The overall picture that emerges from this discussion, then, is as follows:

- (97) a. Upon the completion of each phase, information on its complement is transferred to semantics. The information concerns the compositional semantic role of each element contained within the unit. Thus, each element must be licensed and identified within the information unit as an argument, a predicate, a modifier, an operator, or a quantifier.
- b. Information on the antecedent/binder of an anaphoric element is sent to semantics at any point of the derivation. Anaphoric elements include anaphors, bound pronouns, variables, and wh-phrases in situ.
- c. Information on disjoint reference is sent to semantics upon the termination of the derivation.

(97 a), as repeatedly noted, is a cyclic restatement of Full Interpretation, and (97 b–c) concern anaphoric relations among NPs. The model is consistent with the proposal in Epstein, et al. (1998) and Chomsky (1998) that syntax transfers information to semantics throughout the derivation and that there is no LF representation. It simply states that different kinds of information are sent to semantics in different ways. The empirical claim of this paper is that this model enables us to provide a more refined analysis of the A/A' properties of scrambling, the effects of scrambling on quantifier scope, and the distribution of NPIs in Japanese.

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Notes

1. *Koto* ‘the fact that’ is added at the end of some examples to avoid the unnaturalness resulting from the lack of topic in a matrix declarative sentence.
2. See also Lee (1994) and Kawamura (2001), which pursue similar ideas.
3. I assume that in the case of a *wh*-phrase, its *arg*-feature yields the interpretation of its trace as a variable. In Saito (2003), the name ‘D-feature’ was used instead of ‘*arg*-feature’. This was misleading because categorial features are plausibly represented at every position of a chain.
4. I put aside the *v**P phase here for ease of exposition. In the case of scrambling, the initial movement to the edge of *v**P is known to have properties quite distinct from the subsequent steps, and is considered an operation similar to object shift. (See Tada 1993, Nemoto 1993 and Saito 2003, for example.) I will simply assume in this paper that scrambling starts from the edge of *v**P in the relevant cases.
5. See, for example, Yang (1983), Nakamura (1996) and Hoji (1997) for discussion.
6. Universal quantifiers in Japanese are constructed from a *wh*-expression and the particle *mo* ‘also’. Thus, *daremo* ‘everyone’ in (20) is *dare* ‘who’ + *mo*.
7. There is evidence for the feature movement hypothesis if the landing site of QR is identical to that of scrambling. Suppose that QR copies every feature at the landing site. Then, (14a), repeated below as (i), would be derived as in (ii).
 - (i) *?*_{TP}[Sono_i tyosya]-ga dono hon -ni-mo_i keti-o tuketa]*
 its author -NOM which book-to-also gave-criticism
 ‘Lit. Its_i author criticized every book_i’
 - (ii) $[_{TP} \text{dono-hon-ni-mo } [_{TP} \text{Sono tyosya}]-ga \text{ dono hon-ni-mo keti-o tuketa}]$
 { π , q, arg } { π , q, arg }
 As can be seen in (ii), the *arg*-feature of the quantified phrase *c*-commands the pronoun *sono* ‘its’ at one point of the derivation, and hence, it is predicted incorrectly that the example is grammatical exactly like (14b). This problem does not arise if QR only raises the *q*-feature and does not copy the *arg*-feature at the landing site. This argument is not affected even if the relevant landing site of QR is *v*P/*VP* because examples like (iii), as opposed to those like (iv), exhibit weak crossover effects as well, as pointed out in Hoji (1985).
 - (iii) *?*Taroo-ga [_{vP}[sono_i tyosya]-ni dono hon -mo_i okuri kaesita] (koto)*
 -NOM its author -to which book-also sent-back fact
 ‘Taro sent back every book to its author’
 - (iv) *Taroo-ga [_{vP}dono hon -mo_i [_{vP}[sono_i tyosya]-ni t_i okuri kaesita]] (koto)*
 -NOM which book-also its author -to sent-back fact
8. It is not clear to me whether feature movement should be treated as a kind of head-movement as proposed in Chomsky (1995). The issue, as far as I can see, is related to the analysis of categorial features and their status in covert move-

ment. I will simply assume that it need not be because the issue is orthogonal to the concerns here.

9. Or more precisely, counter-examples to rigidity if the condition states that the scope relation of two quantified phrases reflects their surface c-command relation. It will be shown below that the relevant examples are consistent with rigidity as formulated in (30).
10. Kuroda (1971) actually discusses the interpretation of scope bearing elements with particles such as *-mo* ‘also’, *-sae* ‘even’, and *-dake* ‘only’, and argues against scope rigidity stated in terms of linear precedence, which was widely assumed to be a universal principle at the time.
11. Here, it is important that the preposed quantified phrase contains a Case marker or a postposition. Bare NPs with particles such as the topic marker *-wa* and those mentioned in the preceding footnote can apparently be “base-generated” at the sentence-initial position and hence, can easily take wide scope. Compare, for example, (i) and (ii).

- (i) *Dono sensisya -mo_i Taroo-wa [e_iatta koto-ga aru hito] -ni*
 which war-victim-also -TOP met fact -NOM have person-to
intabyuu -o sita
 interview-ACC did
 ‘For every war victim, Taroo interviewed a person who had met her/him’
- (ii) ??*Dono sensisya -ni -mo_i Taroo-wa [t_iatta koto-ga aru hito] -ni*
 which war-victim-to-also -TOP met fact -NOM have person-to
intabyuu -o sita
 interview-ACC did
 ‘Taroo interviewed a person who had met every war victim’

The only surface difference between (i) and (ii) is whether or not the quantificational phrase in the sentence-initial position contains the postposition *-ni* ‘to’. But (i) is grammatical despite the fact that the phrase binds a gap within a relative clause. This already suggests that (i) need not be derived by scrambling. Further, the example allows the distributive reading of the quantified phrase: the person that Taroo interviewed can vary depending on the war victim. On the other hand, the only possible interpretation of (ii) is that Taroo interviewed someone who has met all the war victims. This shows that the scope of the quantified phrase is confined to the relative clause in this example. Thus, (ii) is consistent with the generalization that long scrambling does not affect quantifier scope. See Saito (1985) for a detailed discussion on a similar pattern observed with the topic marker *-wa*.

12. It makes no difference if the q-feature of NP₁ is adjoined instead to TP beneath the q-feature of NP₂.
13. Alternatively, the scrambling to the edge of the CP can take place successive-cyclically, as in (i), instead of the prior application of QR.

- (i) [_{CP} Daremo-o [_{TP} daremo-o [... daremo-o ...]]]
 {π, ϕ, aff} {π, ϕ, aff} {π, ϕ, arg}

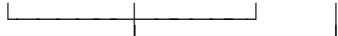
Since nothing seems to prevent it, I assume that this derivation is also possible.

14. Reinhart, accordingly, renames QR ‘constituent raising’.
 15. See, for example, Oyakawa (1975), Muraki (1978), Takahashi (1990), Kato (1994), Aoyagi and Ishii (1994), Tanaka (1997), and Watanabe (2004) for discussions on negative polarity items in Japanese. Lee (1994) and Sohn (1994) contain illuminating discussions on their Korean counterparts.
 16. The predicates in the examples will be glossed morpheme by morpheme in this section because the precise position of negation is important for the discussion.
 17. Watanabe (2004) argues that what has been called ‘negative polarity phenomenon’ in Japanese should be analyzed as negative concord instead. As far as I can see, the choice does not affect the discussion in this paper.
 18. Recall from Footnote 11 that phrases of the form ‘NP-particle’ can be “base-generated” at the sentence-initial position rather freely. The peculiarity of *XP-sika* is that this is marginally allowed even with PPs. I do not have an account at this point for this exceptional property of *XP-sika*. Aoyagi and Ishii (1994) point out that *XP-sika* behaves as an adverb rather than an argument. Thus, it can co-occur with an argument as shown in (i) and (ii).

- (i) *Taroo-wa ringo-sika kudamono-o tabe-na -katta*
 -TOP apple-SIKA fruit -ACC eat -not-past
 ‘Taroo ate no fruits other than apples’
 (ii) *Taroo-wa Eziputo-ni-sika Ahurika-no kuni -ni it -ta koto-ga*
 -TOP Egypt -to-SIKA Africa -GEN country-to go-past fact -NOM
na -i
 not-pres.
 ‘Taroo has not been to any African country other than Egypt’

This adverbial nature of *XP-sika* may be related to its peculiarity in distribution.

19. This blocking effect is induced by quantified phrases and other negative polarity items as well, although it seems to come out most clearly with *XP-sika*. There are diverse accounts suggested for the effect in the literature. The representative ones can be found in Hoji (1985), Takahashi (1990), Tanaka (1997), Beck and Kim (1997), Ko (2003), and Tomioka (2004).
 20. Discussing quantifiers and negative polarity items in Korean, Beck and Kim (1997) hypothesize that they block LF wh-movement. This paper basically follows their formulation of the relevant constraint. On the other hand, Tanaka (1997) argues that (77) is excluded by a linear crossing constraint imposed on the association lines of wh-Q and NPI-Neg as in (i).

- (i) * [_{CP} [_{TP} ... *XP-sika* ... [... wh ...] ... Neg ...] Q]


I will briefly comment on this analysis in Footnote 23.

21. Aoyagi and Ishii (1994) note that examples of this kind are not as bad as typical cases of blocking. I agree with their judgment but will abstract away from this difference.
22. Japanese and Korean lack NIC effects. See Yang (1983) and Nakamura (1996) for discussion.
23. Tanaka (1997) discusses the following example, which has the same configuration as (86a–b) in relevant respects, and marks it ungrammatical.

(i) *LGB-sika_i dare -ga* [_{CP}*Hanako-ga t_i yom-ana-i to*] *it -ta no*
 -SIKA who -NOM -NOM read-not-pres. that say-past Q
 ‘Who said that Hanako reads only LGB’

Based on this judgment, he goes on to argue that the example constitutes evidence for the account of the blocking effect in terms of the surface linear crossing constraint, mentioned in Footnote 20. Examples like (i) and (86a–b) are indeed complex, but to my ear (i) sounds far better than (ii), where negation appears in the matrix TP.

(ii) ?**LGB-sika_i dare -ga* [_{CP}*Hanako-ga t_i yom-u to*] *iw -ana-katta no*
 -SIKA who-NOM -NOM read-pres. that say-not-past Q

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