

Scrambling in German and Japanese

from a Minimalist Point of View *

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ABSTRACT

Since the Minimalist Program (MP) assumes only obligatory movement operations that are triggered by checking of uninterpretable features, the optionality of scrambling does not fall under the MP framework as it is. However, Chomsky (1998) suggests that for at least some cases, a scrambling feature induces pied-piping even after Case-assignment. In this paper, I focus on local scrambling in German and Japanese, and claim that (1) flexible word order of VP-internal arguments is base-generated by first Merge, (2) the short scrambling that shows A'-properties is motivated by a PF rule, which moves a constituent into the edge of TP like the TH/EX rule, and (3) the scrambling with A-properties is derived through the cyclic movement triggered by an EPP-feature of v^* and T that is associated with a semantic effect ('specificity'). It follows from this that only arguments can scramble. Since the Spec- v^* position is not available as a viable landing site in VO languages like English which lack object shift, it is expected that they don't have scrambling. If we limit the range of scrambling to argument movements in this line, scrambling can be analyzed in the narrow syntax.

Scrambling in German and Japanese from a Minimalist Point of View*

0. Introduction

In Generative Grammar, scrambling has been a cover term which refers to an optional movement of constituents to a non-operator A'-position (Saito [34,35], Fukui [12], Müller and Sternefeld [30], Haider and Rosengren [17] among others). According to this approach, scrambling has no output effect at LF and can be freely undone. Other works (Mahajan [27], Saito [36], Webelhuth [43] etc.) demonstrated that short scrambling also shows A-properties such that it changes binding relations though the status of its optionality remained unchallenged. Since the Minimalist Program (MP) developed by Chomsky [5,6,7] assumes only obligatory movement operations that are triggered by checking of uninterpretable features, the optionality of scrambling does not fall under the MP framework. It is clear from economy considerations that if there are two converging derivations, only the one involving the fewest movement steps is legitimate. Alternatively, some linguists claim that flexible word order is base-generated without involving movement operations (cf. Miyagawa [28], Fanselow [9]). In any case, scrambling cannot be regarded as a core case of the dislocation property that UG imposes on human languages.

Chomsky [5:324] suggests that scrambling in Japanese is external to the major syntactic structure, associated with an internal position that determines the semantic interpretation. He points out further (Chomsky [5:325]): “they may not really belong to the system we are discussing here (...), the one that is concerned with Last Resort movement driven by feature checking within the $N \rightarrow \lambda$ computation.” Moreover, Chomsky [6:21] states that ‘stylistic’ operations might fall within the PF because they are not feature-driven. In this view, scrambling is just a PF phenomenon which does not interact with LF output, similar to ‘stylistic’ rules proposed by Ross [33]. On the other hand, Chomsky [6:38] notes: “Among the problems that arise is the status of scrambling. The logic would suggest that for at least some cases, a scrambling feature induces pied-piping even after Case-assignment, with the pied-piped element ‘attracted’ by a higher probe, while other cases fall into a category distinct from feature-driven movement.” Despite of this suggestion, we still have a confused picture as to scrambling. More specifically, the following questions arise: is scrambling in different languages (e.g. German and Japanese) the same phenomena at all? Is every free constituent order derived by movement from base Merge positions? Are there cases in which scrambling is

feature-driven, and if it is the case, what kind of feature is responsible for the scrambling? In which case can scrambling be characterized as a PF rule as Chomsky suggests?

In this paper, I will focus mainly on local scrambling in German and Japanese and claim that (i) free word order within VP can be base-generated by Merge, (ii) scrambling across the subject is in general triggered by semantic features ('specificity'), and (iii) only a small number of movements that have no semantic effect are triggered by a PF dislocation rule like the EX (=extraposition)/TH (=thematization) rule, which is a language-specific option (cf. Chomsky [7:17]). Thus, I propose a more elaborate explanation of scrambling by differentiating subparts of word order variation (base-generation within VP-internal positions and feature-driven movement of arguments across the subject).

This paper is organized as follows: In section 1, I outline some relevant properties of German and Japanese scrambling. In section 2, the VP-internal scrambling is analyzed as a base-generation of different argument orders. Section 3 deals with the scrambling of the object across the subject, and it is divided into two cases: A-movement targeting Spec-T through the Spec- v^* position and PF movement without semantic effects.

The analysis is based on the MP framework developed by Chomsky [6,7]. Syntactic derivations are spelled out at the strong phase level, v^* P involving a transitive verb construction and CP, and the economy of derivation is evaluated at the next higher phase. Since there is no post-cyclic feature movement at LF, Case-agreement between T and the subject must be checked under the operation AGREE or MOVE: T seeks a goal in its domain and agrees with the subject, so that the uninterpretable ϕ -set of T is deleted. If T has an uninterpretable EPP-feature, then T attracts the subject as its goal. For German and Japanese, I assume the following head final structure though the head of CP is initial in German and final in Japanese:

$$(1) (C^0) [_{TP} DP_{SUB} [_{T'} [_{v^*P} (DP_{SUB}) [_{v^*} [_{VP} DP_{OBJ} V^0] v^{*0}] T^0] (C^0)$$

VP is head final in both two languages, contrary to the LCA-approach of Kayne [21].¹ The external argument of a transitive verb is merged in the Spec- v^* position and moves to Spec-T to delete the EPP-feature of T. However, the subject can remain in the Spec- v position in certain contexts.² For example, the unmarked order in passive constructions with double objects is dative - nominative:

$$(2) [C^0 \text{ dass}] [_{TP} [_{vP} \text{ gestern einem Kind [ein Bild] gezeigt wurde}] T^0]$$

that yesterday a child-DAT a picture-NOM shown was

(='that a picture was shown to a child yesterday')

(3) [_{TP} [_{VP} kinoo sono-gakusei-ni [tegami-ga] okur-are-ta]T⁰]

yesterday that-student-DAT letter-NOM send-Passive-Past

(='A letter was sent to the student yesterday')

AGREE holds between T and the nominative-marked DP within VP as illustrated in (2) and (3). Hence, the EPP-feature of T is optional in German and Japanese. On the other hand, assuming that the functional T- and v*-head can bear EPP- or some uninterpretable features, MOVE applies to a DP, hence targeting the outer Spec-v* or the Spec-T position. This is a possible configuration for a scrambling movement:

(4) [_{TP} (DP_i) (SUB)_T [_{VP} (DP_i) [_v (SUB) [_v [_{VP} ...t_i... V⁰] v⁰] T⁰]

1. Scrambling Properties in German and Japanese

First, let us observe some relevant properties of German and Japanese scrambling:

(I) Only selected arguments can scramble. Fanselow [9:2f.] argues that non-arguments like predicative phrases or secondary predicates may not scramble as shown in (5). On the other hand, adjuncts like temporal and local adverbs can be arranged freely as exemplified by (6). Adverbial positions in Japanese are not fixed, either (=7)):

(5) a. [_{CP} dass [_{TP} Fritz leider *dumm* geblieben ist]] (Fanselow [9:2])

that Fritz-NOM unfortunately stupid remained is

(='that Fritz unfortunately remained stupid')

b. *[_{CP} dass [_{TP} *dumm*_i [_{TP} Fritz leider t_i geblieben ist]]]

(6) a. [_{CP} dass [_{TP} niemand [_{VP} das Buch *morgen* liest]]] (Fanselow [9:3])

that nobody-NOM the book-ACC tomorrow reads

(='that nobody will read the book tomorrow')

b. [_{CP} dass [_{TP} (*morgen*) niemand [_{VP} (*morgen*) das Buch liest]]]

(7) (Asu) Taroo-ga (asu) sono-hon-o (asu) kau-daroo.

tomorrow Taro-NOM the-book-ACC buy will

(='Taro will buy the book tomorrow')

(8) a. [Tomoko-ga [Taroo-ga asu sono-hon-o kau-to] itta]

Tomoko-NOM Taro-NOM tomorrow the-book-ACC buy that said

(='Tomoko said that Taro will buy the book tomorrow')

b. *??Asu_i [Tomoko-ga [Taroo-ga t_i sono-hon-o kau-to] itta]

Although Japanese allows long-distance scrambling, the temporal adverb “asu” (=‘tomorrow’) cannot move out of the embedded clause to the edge of the matrix sentence as shown in (8b). This suggests that ‘scrambling’ of the adverb does not leave a trace so that it cannot be reconstructed. Rather, adverbial phrases can be merged in any position within the V- or T-projection in head final OV-languages. Different argument-adjunct orders are hence base-generated freely. If so, then optional movement in terms of scrambling is only applied to arguments. Since A'-movements like wh-movement or topicalization are not limited to arguments (e.g. VP-topicalization), it follows from this fact that if scrambling is a movement operation, it should be an A'-movement.³

(II) It has been often argued that short scrambling can be an A- as well as an A'-movement. At first glance, binding data demonstrate that the scrambled element can be a binder of an anaphor (=A-property) and that the scrambled anaphor should be reconstructed in its trace position (=A'-property):

- (9) a. *[otagai_i-no sensei]-ga [Hanako-to Mary]_i-o hihansita.
 each other's teachers-NOM Hanako-and-Mary-ACC criticized
 (=‘Hanako and Mary, each other's teachers criticized’)
- b. [Hanako-to Mary]_i-o_j [otagai_i-no sensei]-ga t_j hihansita.
- (10) Jibunjisin-o_i Taro-ga t_i hihansita.
 himself-ACC Taro-NOM criticized
 (=‘Taro criticized himself’)

In (9a), the subject including the reciprocal anaphor “otagai” is not c-commanded by its antecedent, violating Binding Principle A. On the other hand, if the object antecedent is scrambled to the left of the reciprocal as shown in (9b), the scrambled object A-binds the reciprocal, suggesting that the scrambled DP moves to an A-position. In contrast, a reflexive anaphor can precede its subject antecedent as exemplified by (10). It follows that in this case scrambling is an A'-movement because the scrambled anaphor must move back into its trace position to meet Principle A. We can observe the reconstruction effect in German, too:

- (11) a. dass [sich_i [jeder t_i wiedererkannte]] (Fanselow [9:16])
 that REFL-ACC everybody-NOM recognized
 (=‘that everybody recognized himself’)

- b. dass ich den Hans_i sich_i im Spiegel zeigte
 that I the-Hans-ACC REFL-DAT in the mirror showed
 (=‘that I showed Hans to himself in the mirror’)
- c. *dass ich sich_i den Hans_i (t_i) im Spiegel zeigte
 d. *dass sich_i ich den Hans_i (t_i) im Spiegel zeigte
- (12) a. dass jeder_i seine_i Eltern_i liebt
 that everybody-NOM his parents-ACC loves (=‘that everybody loves his parents’)
- b. dass seine_i Eltern jeder_i t_i liebt
 c. *dass seine_i Eltern jeden_i lieben (=‘that his parents love everybody’)
 that his parents-NOM everybody-ACC love
- (13) a. Wir wollen jedem Professor_i seine_i Sekretärin vorstellen.
 we will each Professor-DAT his secretary-ACC introduce
 (=‘We will introduce to each professor his secretary’)
- b. *Wir wollen seine_i Sekretärin jedem Professor_i t_i vorstellen.

In (11a), the reflexive anaphor “sich” is scrambled to the left of the subject, which must be reconstructed at its base-position. Similarly, the bound pronoun contained in the accusative DP precedes the subject QP in (12b), which does not show weak crossover effect (=WCO). The subject QP serves as the binder of the pronoun though the former does not c-command the latter. However, if the QP itself is an object, it must c-command the bound pronoun as indicated in (12c) (cf. Frey [10]). Thus, in (12b), either the scrambled object must be reconstructed or the subject QP can bind the object at LF.

Let us now consider the relative order of internal arguments. It is well known that in German, the positions of the dative object and the accusative object can be freely permuted. Scrambling in such a case has been analyzed as a VP-adjunction of the accusative object (cf. Stechow and Sternefeld [39], Müller and Sternefeld [30]). However, Fanselow [9] shows that the dative anaphor cannot appear in front of the accusative antecedent as shown in (11c, d). If the reflexive “sich” is adjoined to VP in (11c), it should be possible that the anaphor is reconstructed in its trace position at LF and bound by its antecedent. Furthermore, Bayer and Kornfilt [1] demonstrate that the scrambling of the accusative object across the dative QP does not allow the binding of a bound pronoun by the QP as exemplified by (13b). The A'-movement analysis of short scrambling wrongly predicts that these sentences are all grammatical.⁴ Therefore, it seems that the A'-property of short scrambling is rather linked to the phonological component, because the scrambled element does not have any operator status, and the target position of the

scrambling is restricted to the edge position (e.g. the edge of T). I will later go back to this issue (Section 3.4).

Miyagawa [28] claims that the VP-internal word order permutation (DAT-ACC and ACC-DAT) cannot be regarded as a VP-adjunction. Consider the following sentence, where the accusative antecedent precedes the dative-marked reciprocal:

- (14) John-ga [Hanako-to Mary]_i-o otagai_i-ni (t_i) syookaisita.
 John-NOM [Hanako-and Mary]_i-ACC each other_i-DAT (t_i) introduced
 (= ‘John introduced Hanako and Mary to each other’) (Miyagawa [28:5])

If the accusative DP were scrambled to a VP adjoined A'-position and would leave a trace, the reciprocal should bind the trace and violate Chain Condition (Rizzi [32]). Thus, the antecedent in the A'-position could not A-bind the reciprocal. Consequently, both dative-accusative and accusative-dative order can be base-generated in VP.

(III) Scrambling can induce quantifier scope ambiguity. In (15a), where two QPs appear with a normal order (nominative-accusative) and the subject c-commands the object, scope interpretation is unambiguous. On the other hand, we observe scope ambiguity in (15b), where the object QP is scrambled across the subject QP. German scrambling exhibits the same scope ambiguity (cf. (16a) vs. (16b)):

- (15) a. Dareka-ga daremo-o hometa.
 someone-NOM everyone-ACC admired
 (=‘Someone admired everyone’) $\exists > \forall$; * $\forall > \exists$
 b. Dareka-o_i daremo-ga t_i hometa.
 someone-ACC everyone-NOM admired
 (=‘Someone, everyone admired’) $\exists > \forall$; $\forall > \exists$
- (16) a. dass man fast jedem Experten mindestens ein Bild zeigte $\forall > \exists$; * $\exists > \forall$
 that one almost every expert-DAT at least one picture showed
 (=‘that at least one picture was shown to almost every expert’)
 b. dass man [mindestens ein Bild]_i fast jedem Experten t_i zeigte $\exists > \forall$; $\forall > \exists$

Haider and Rosengren [17:14f.] argue that in German the dative-accusative order is base-generated for the ‘give’ class verbs, and this unmarked order has only the scope interpretation in which the dative quantifier takes wide scope over the accusative one, while the reverse order induces scope ambiguity (=16b)). Since in (16a) the universal QP

c-commands the existential QP at the base position, only the wide scope reading of the former obtains. They claim that the scope interpretation refers to chain-links in which a quantifier Q gets wide scope with respect to a phrase E if and only if Q c-commands at least one member of the chain of E (cf. Frey [10]). Because in (16b) the scrambled existential QP c-commands the universal QP and the universal QP in turn c-commands the trace of universal QP, (16b) gives rise to scope ambiguity. Scope ambiguity caused by scrambling is then viewed as evidence of the A'-movement analysis: the scrambled quantifier takes wider scope in the surface configuration or moves back to its trace position which is c-commanded by another QP. However, Fanselow [9] demonstrates that the surface relative order of QPs is crucial for their scope interpretation:

(17) dass jedem Kind mindestens ein Buch nur Hans vorlas (Fanselow [9:18])

that each child-DAT at least one book-ACC only Hans-NOM read $\forall > \exists$; $*\exists > \forall$

(='that only Hans read at least one book to every child')

(18) [QP₁ [QP₂ [Subject ... t₁ ... t₂ ...]]]

Since in (17) two QPs are scrambled over the subject and each QP c-commands the trace of the other QP according to the movement analysis as given in (18), scope ambiguity should be expected. However, it does not hold. Therefore, the analysis of Haider and Rosengren [17] fails to explain the scope interpretation in (17). Note that in Japanese, we get scope ambiguity even if QPs are merged in VP with the 'unmarked' dative-accusative order as Miyagawa [28:12] points out:

(19) Hanako-ga dareka-ni daremo-o syookaisita.

Hanako-NOM someone-DAT everyone-ACC introduced

(='Hanako introduced everyone to someone') $\exists > \forall$; $\forall > \exists$

These data lead us to conclude that the A'-movement analysis is not conclusive, at least for VP-internal scrambling. It follows that we must account for the scope ambiguity in the case of the scrambling of a QP to the left of the subject. (cf. 3.3)

(IV) Sauerland [38] claims that scrambling in Japanese is semantically vacuous, while German scrambling induces semantic effects such as a generic interpretation. Sauerland points out that Japanese scrambling does not have the same effect on interpretation as German scrambling of object indefinites. According to the Mapping Hypothesis proposed by Kratzer [23] and Diesing [8], indefinite DPs have an existential as well as a generic

interpretation in the VP domain, while they have only a generic interpretation if they are scrambled out of the VP domain. The unscrambled indefinite in (20a) allows both generic and existential interpretations, whereas the scrambled indefinite DP in (20b) induces only a generic interpretation:

(20) a. weil die Susi Professoren mag (generic, existential) (Sauerland [38])

because the Susi-NOM professors-ACC likes

(='Because Susi likes professors')

b. weil Professoren_i die Susi t_i mag (generic, *existential)

(21) a. Kazuko-ga sensei-o sukida . (generic, existential)

Kazuko-NOM teacher-ACC likes (=‘Kazuko likes teachers’)

b. Sensei-o_i Kazuko-ga t_i sukida. (generic, existential)

Sauerland maintains that Japanese scrambling doesn't affect whether the existential reading for the indefinite DP is possible, because the unscrambled object in (21a) as well as the scrambled one in (21b) allows both generic and existential interpretations. It must be noted, however, that in (21b) the existential reading in which there are teachers such that Kazuko likes them is not available. Although the judgment is subtle, the sentence (21b) means rather that Kazuko likes teachers in general or a specific individual teacher in a given context. This is so because the scrambling of an object DP across the subject affects focus or specificity effect in Japanese.

(V) It has been established that scrambling is clause-bound in German while Japanese has both short and long scrambling. In (22), the object DP is extracted out of the finite embedded clause, which gives rise to ungrammaticality. By contrast, long-distance scrambling is possible in Japanese as demonstrated in (23):

(22) *dass niemand [die Lösung]_i geglaubt hat, dass er t_i gefunden hätte

that no one-NOM the solution-ACC believed has that he-NOM found has

(='that no one believed that he has found the solution')

(23) [Sono-kaiketu-o]_i daremo [kare-ga t_i mituketa-to] omowa-nak-atta

the solution-ACC no one-NOM he-NOM found that think-NEG-PAST

(='no one believed that he has found the solution')

However, German exhibits so-called T (=topic)-scrambling that is not clause-bound as Haider and Rosengren [17:83-85] point out:

(24) dass [SO viel Geld]_i man nicht glaubt [dass IR~~Y~~gendjemand t_i
unterschlagen kann]
 that so much money-ACC one-NOM not believes that anyone-NOM embezzle can
 (= “that it is not possible to believe that anyone can embezzle so much money”)

In (24), the scrambled element receives the rise accent, and the fall accent is accompanied with the constituent preceding the trace position. The target position of T-scrambling is restricted to a C⁰-adjacent position, which suggests that the operation takes place in the phonological component (cf. Chomsky [7]). The phrase moved by long-distance T-scrambling is obligatorily reconstructed at LF, so that it is interpreted at the trace position. Note that in Japanese too, reconstruction is obligatory in the case of long-distance A'-scrambling. In (25), a wh-phrase is scrambled out of the embedded clause whose head has an interrogative Q-feature. Thus, it must be reconstructed at LF:

(25) Dare-o_i [Taroo-ga [CP Tomoko-ga t_i aisiteiru-ka] sitteiru]
 who-ACC Taro-NOM Tomoko-NOM loves-Q knows
 (= 'Taro knows who Tomoko loves')

Because T-scrambling affects the information structure like focus or contrast, it is used when one wants to emphasize one of the constituents. I cannot explore T-scrambling in German here in detail, but notice that this kind of focal reading can be observed for long-distance scrambling in Japanese, too.⁵ Although Japanese does not have a rise-fall contour like T-scrambling in German, long-distance scrambling in Japanese seems to have a focus interpretation. Thus, idiom chunks that are inherently non-referential and unable to focus cannot undergo long-distance A'-scrambling (cf. Miyagawa [28]):

(26) a. Kosi-o_i Tomoko-ga t_i orosita. (short-scrambling)
 hip-ACC Tomoko-NOM lowered (= 'Tomoko sat down')

b. *Kosi-o_i [Taroo-ga [Tomoko-ga t_i orosita-to] itta] (long scrambling)
 hip-ACC Taro-NOM Tomoko-NOM lowered that said
 (= 'Taro said that Tomoko sat down') (Miyagawa [28:13])

I demonstrated above that there are some similarities with respect to scrambling between German and Japanese. Since all the argument DPs are Case-checked without movement,

scrambling is never Case-driven. However, short scrambling resembles A-movement in that it can change binding relations and quantifier scope. The task is then to show how to derive the A-properties in terms of feature-driven movement.

2. VP-internal Scrambling as Base Generation

In this section, I argue that the VP-internal ‘scrambling’ does not exist. Specifically, I will propose the following, in accordance with Miyagawa [28]:

(27) Internal arguments of a lexical head (e.g. V or A) can be freely merged in its projection irrespective of its argument structure as long as the head finality holds.

As pointed out above, relative order of VP-internal objects in German and Japanese is not restricted. I assume that arguments of a three-place predicate in Japanese and German is merged within VP- and v^* -projection according to the following structure:

(28) $[_{TP} [_{v^*P} SUB [_{VP} DP DP [_{V'} PP V^0]] v^{*0}] T^0]$

If a verb selects a PP argument, the argument associated with it is merged within the lowest V-projection. The theme argument is then merged as the specifier of V. Thus, the selected goal PP cannot precede the theme argument as exemplified by (29b):

- (29) a. dass Peter ein Buch $[_{PP}$ auf den Tisch] gelegt hat.
 that Peter-NOM a book-ACC on the table put has
 (=‘that Peter put a book on the table’)
- b. *dass Peter $[_{VP}$ $[_{PP}$ auf den Tisch] $_i$ ein Buch t_i gelegt] hat

However, the unmarked word order of ditransitive constructions that involve two internal objects varies as Vogel and Steinbach [42] point out. The dative argument can either precede or follow the accusative argument as the following examples (30)-(31) show:

- (30) a. dass der Mann einem Mädchen einen Jungen vorstellte
 that the man-NOM a girl-DAT a boy-ACC introduced
 (=‘that the man introduced a boy to a girl’)
- b. a. dass der Mann einen Jungen einem Mädchen vorstellte

- (31) a. dass der Mann dem Kind das Buch gegeben hat
 that the Mann-NOM the child-DAT the book-ACC given has
 (=‘that the man gave the child the book’)
 b. dass der Mann das Buch dem Kind gegeben hat

Haider and Rosengren [17] argue that scrambling is a specific chain formation between a constituent and its trace within a head-final lexical projection, e.g. VP. In this view, German and Japanese have scrambling properties in VP because the verbal head occupies the final position. Furthermore, base word order of arguments of a verb is generated in accord with its argument hierarchy that strictly reflects semantic argument structure in the lexicon as advocated by Lexical Decomposition Semantics (Bierwisch [2] or Wunderlich [44]). Thus, a ‘give’ type ditransitive verb projects the agent-goal-theme order as a basic constituent order: ⁶

- (32) geben (=‘give’): (x [NOM] CAUSE (BECOME (HAVE (y [DAT], z [ACC])))

Word order permutation occurs when arguments are adjoined to some verbal projection:

- (33) [VP [V' (DP_{i<ACC>}) [V' SUB [V' (DP_{i<ACC>}) [V' DP<DAT> [V' t_i V⁰]]]]]]]

However, it is dubious that head finality plays a crucial role for scrambling. Since Japanese is a strict head final language, scrambling in any lexical projection should be possible according to their theory. In fact, we can observe a free constituent order of arguments within a nominal projection, too. Permutation of goal-theme argument order is possible in a nominal projection, at least in Japanese:

- (34) a. Taroo-e-no sono-ronbun-no hasso (=‘sending of the article to Taro’)
 Taro-to-GEN the-article-GEN sending
 b. sono-ronbun-no Taroo-e-no hasso
- (35) a. sono-sensei-no gakkoo-e-no kifu
 the teacher-GEN school-to-GEN donation
 b. gakkoo-e-no sono-sensei-no kifu (=‘donation to the school by the teacher’)
- (36) a. sono-sensei-no jibunjisin-no syookai
 the teacher-GEN self-GEN introduction (=‘the self-introduction of the teacher’)
 b. *jibunjisin-no sono-sensei-no syookai

(37) a. Sono-sensei-ga jibunjisin-o syookaisita.

the teacher-NOM self-ACC introduced

b. Jibunjisin-o sono-sensei-ga syookaisita (=‘The teacher introduced himself’)

Although ‘scrambling’ of DPs or PPs is possible within an NP, an anaphor cannot appear in front of the antecedent in NP as (36b) shows. In contrast, scrambling of the anaphor over the subject antecedent in a clause does not give rise to a violation of Principle A as demonstrated in (37b). This illustrates the fact that the anaphor leaves no trace in (36b), and the relative order of arguments is instead base-generated in the nominal projection. Note that the external argument of a noun is not required from θ -theoretic considerations, and the subject of NP is viewed as the argument-adjunct in the sense of Grimshaw [15]. Thus, the analysis that regards scrambling as a movement within a lexical projection cannot be maintained. Rather, free argument order of a head final N-projection is considered to be base-generated. As for the VP-internal word order permutation, there is no reason for assuming that the accusative DP leaves a trace when it precedes the dative DP. I admit that the dative-accusative order is an unmarked word order for a ditransitive verb, which reflects the ‘canonical’ argument structure to a certain extent. However, the reverse order becomes more natural when the animacy hierarchy (animate > inanimate) is not relevant as shown in (38):⁷

(38) a. Sensei-ga e-o bijutukan-ni ageta.

teacher-NOM picture-ACC museum-DAT gave

(=‘The teacher gave a picture to the museum’)

b. Sensei-ga bijutukan-ni e-o ageta

Therefore, I conclude that different word orders of VP internal-arguments are in principle base-generated.⁸ No trace is hence involved in the ACC-DAT order. It follows then that the absence of binding relations in (11c) and (13b) is explained straightforwardly. Furthermore, we can read off the scope interpretation of the two QPs sketched in Section 1 either from their surface c-command relation or from an LF representation that reflects the ‘canonical’ argument order, i.e. DAT-ACC.

3. Object Fronting over the Subject

3.1. Against Base Generation Analysis of Object-Subject Order

structural Case must be strictly distinguished. I assume that the morphological Case, if overt in a language, is checked in the PF component where the actual morphological Case and structural Case are checked, given that an uninterpretable Case-feature is still visible before Spell-Out. If they are not matched, then the derivation crashes or has an odd interpretation. Thirdly, since feature movement at LF is not subject to the extension condition, abstract ϕ -feature movement is theoretically undesirable. Chomsky [7] suggests that head movement like V-raising should be treated as a PF rule because V-raising has no semantic effect. It should be concluded, from what has been said above, that scrambling of the object across the subject cannot be base-generated but derived through a movement operation.

3.2. Spec- ν^* as Target of Scrambling

Miyagawa [29] claims that A-scrambling is triggered by an optional EPP feature on T. In his analysis, A-scrambling of an object is derived as follows:

(42) $[_{TP} \text{ sono-hon-}o_i [_{\nu^*P} \text{ Taroo-ga } [_{VP} \text{ } t_i \text{ katta } \nu^{*0}] T^0]_{[EPP]}$

Miyagawa argues that the subject and the object are equidistant from T after V-to-T raising. However, since at the first phase level ν^*P the object remains in the VP, i.e. in the domain of ν^* and not at its edge, the object is not accessible from T. Therefore, the object must move at first to the outer Spec- ν^* position as an intermediate landing site. Consider the derivations that correspond to a simple transitive sentence in German and Japanese:

(43) a. $[_{TP} \text{ SUB}_i [_T [_{\nu^*P} \text{ } t_i [_{\nu'} [_{VP} \text{ OBJ } V^0] \nu^{*0}] T^0]$
 b. $[_{TP} [_T [_{\nu^*P} \text{ SUB } [_{\nu'} [_{VP} \text{ OBJ } V^0] \nu^{*0}] T^0]$

In (43b), the subject in Spec- ν^* need not move to Spec-T if T has no EPP-feature. If T has an EPP-feature, the subject must move to the Spec-T position because it is the closest goal for T at the point of the projection of TP as illustrated in (43a). In this respect, Chomsky [7:29] proposes the following principles (44), where (44A) and (44B) are invariant principles, and (44C) is the parameter that distinguishes between the languages with an Object Shift (=OS) and those without OS:

- (44) (A) ν^* is assigned an EPP-feature only if that has an effect on outcome.
 (B) The EPP position of ν^* is assigned INT (=‘interpretative complex’).

(C) At the phonological border of v^*P , XP is assigned INT' .

The interpretation INT is associated with something like specificity, definiteness, focus or topic, while INT' is related to an existential interpretation. If $V-v^*$ raises to T in a language with OS , then (44C) applies, and the object that is at the phonological border is assigned INT' .¹⁰ If the object is, for example, a definite pronoun and resists INT' , it should move to $Spec-v^*$ due to (44B):

(45) $[_{TP} SUB \quad V [_{v^*P} (OBJ) \quad t_{SUB} \quad [_{VP} \quad t_v \quad (OBJ)]]] \quad (=OS)$
 $INT \quad | \quad \underline{\hspace{10em}} \quad | \quad INT'$

Thus, OS is contingent on V -to- T raising, and it is necessary that the subject moves to the $Spec-T$ position. On the other hand, object scrambling in German and Japanese has nothing to do with V -raising. However, if the subject moves to $Spec-T$ as in (43a), the object automatically stays at the phonological border in an OV -language. The object can then move to the outer $Spec-v^*$ if (44A) and (44B) hold. The contrast in (46) suggests that the object with a contrastive focus cannot stay in VP and moves to the $Spec-v^*$ position:

(46) a. $??[_{TP} \text{John-ga isoide hon-wa katta}]$. (Miyagawa [28:10])
 John-_{NOM} quickly book-_{CONTRAST} bought
 (= 'John quickly bought A BOOK')
 b. $[_{TP} \text{John-ga}_j [_{v^*P} \text{hon-wa}_i t_j [_{VP} \text{isoide} \quad t_i \quad \text{katta}]]]$

Although the position of the adverb is not fixed, the focal object must move from its original VP -internal position because it receives the interpretation INT' at the base-position, which is incompatible with its intended interpretation. We find the same contrast in German, too (cf. Diesing [8]):

(47) a. $\text{dass Otto immer } [_{VP} \text{Bücher über Wombats liest}]$
 that Otto-_{NOM} always books-_{ACC} about wombats reads (existential)
 (= 'that Otto always reads books about wombats')
 b. $\text{dass Otto } [_{v^*P} \text{Bücher über Wombats}_i \quad \text{immer } [_{VP} t_i \text{ liest}]]$ (generic)

The indefinite in (47a) receives an existential reading while the scrambled indefinite in (47b) gets a generic interpretation. The target of scrambling must be the outer $Spec-v^*$

position. Thus, both in German and Japanese, v^* is optionally assigned an EPP feature which attracts an object.¹¹

The next question is what derives the movement of an object to the outer Spec- v^* position if the subject remains in Spec- v^* as in (43b). Empirical data suggest that such a movement exists. Given that German modal particles like “ja” or “doch” mark the left border of v^*P , the word order in which the object precedes the subject but follows the modal particle involves the movement of the object to the outer Spec- v^* position:

- (48) a. dass ja doch [v^*P Hans Primaballerinas bewundert].
 that PRT PRT Hans-NOM prima ballerinas-ACC admires
 (=‘that Hans admires prima ballerinas’)
 b. dass ja doch [v^*P Primaballerinas_i [v^* Hans t_i bewundert]]

In (48a), the indefinite object “Primaballerinas” has a generic as well as an existential interpretation, while in (48b) the scrambled object has only a generic reading. Note that the subject “Hans” remains in the Spec- v^* position since it follows the modal particle “ja doch”. Next, consider Japanese causative constructions in which the embedded subject is merged in the Spec- v^* position:

- (49) a. ??Mary-ga [v^*P Taro-ni [VP isoide sono-hon-wa yom]]-ase-ta.
 Mary-NOM Taro-DAT quickly the book-CONT read-CAUS-PAST
 (=‘Mary made Taro read the book quickly’)
 b. Mary-ga [v^*P sono-hon-wa_i [v^* Taro-ni [VP isoide t_i yom]]]-ase-ta.

The external subject of the embedded clause is within v^*P and Case-marked with dative by the causative verb “(s)-ase” which belongs to the matrix v^* . Scrambling of the accusative object between the matrix subject and the embedded dative-subject is a clear case in which it targets the outer Spec- v^* position of the embedded v^*P . Although it is not clear what semantic effect derives the movement of the object in (49b), something like specificity seems to be involved. Note that the target position Spec- v^* is an A-position as the following contrast shows. (50b) is ruled out because the reflexive anaphor scrambled to Spec- v^* cannot be reconstructed, violating Binding Principle A:

- (50) a. Mary-ga [v^*P Taro-ni [VP jibun-jisin_j-o hihan]-s]-ase-ta.
 Mary-NOM Taro-DAT himself-ACC criticize-CAUS-PAST

- (='Mary had Taro criticize himself')
- b. *Mary-ga [_{v*P} jibun-jisin^j-o_j [Taro^j-ni [_{VP} t_j hihan-s]]]-ase-ta.

Why can the object then cross over the subject at Spec-*v** and move to the outer Spec-*v**? In the case of (43b), T agrees with the subject in Spec-*v** without attracting it:

(51) [_{TP} [_{T'} [_{v*P} OBJ_i [_{v'} SUB [_{VP} (OBJ_i) V⁰] v*⁰ [_{+EPP}]]] T⁰]

Although the object in VP is not at the phonological border of *v*P* in (51), it can be considered to move to the outer Spec-*v** position to get an unambiguous interpretation in the sense of the ‘‘earliness principle’’ of Pesetsky [31]. If we assume that the distinction between INT and INT' is nearly equivalent to the Mapping Hypothesis of Diesing [8], then the additional EPP feature of *v** is associated with specificity.¹² In German, definite and generic DPs can scramble, but the indefinite DPs that are interpreted as variables bound by existential quantifiers remain within the VP domain. Although it is not exactly clear what driving force is involved in Japanese scrambling, some kind of referential specificity is at work. Note further that *v** bears the ϕ -set which is associated with the structural accusative Case, and if *v** optionally has an EPP-feature, the object should move to its specifier. Otherwise, the sentential subject would be assigned accusative Case when it moves to the outer Spec-*v**. Even if the object moves to the outer edge of *v*P*, the subject as well as the object is equidistant from T. Therefore, T can select the subject as its goal. In other words, if a language such as English has no object shift and its T has an EPP-feature, which requires AGREE and deletes an uninterpretable Case-feature under MOVE, then it has no scrambling. The peculiar stipulation that the subject may not scramble (cf. Saito [34]) follows from this economical derivation.

Given that the derivation proceeds cyclically at every strong phase level, at which Spell-Out is applied and the optimal derivation is evaluated, the movement of the object to the outer Spec-position of *v** is a necessary step for its movement to Spec-T. The outer Spec-position of *v** is viewed as equivalent to the OS position in Scandinavian languages. Thus, we can regard the scrambling of the object to the left of the subject in these two languages in the same light as the OS-movement, a desirable consequence.¹³

3.3. Scrambling to the Spec-T Position

Now, let us turn to the Spec-T position as a possible landing site of scrambling. There are two possibilities in this case:

- (52) (i) A-movement of an object to the Spec-T position through the Spec-*v** position. This possibility is further divided into two cases: The subject remains in situ and the object instead raises to Spec-T. Alternatively, the subject moves to Spec-T, and the object then moves to the outer Spec-T position.
- (ii) A'-movement of an object to the Spec-T position. Since the EPP feature on T is optional for German and Japanese, it is possible that Spec-T functions as A'-position, given that some PF-feature is involved. The reconstruction effect for scrambling is hence reduced to a PF movement.

Let us begin by examining the first possibility (52i). It is well known that in Japanese a QP takes scope over the negation “na-i” or ”na-katta” when the QP is a subject, while the inverse scope reading arises when the QP is an object. If a QP is within the domain of the VP c-commanded by a NEG-head, the negation has wide scope over the QP. On the other hand, the subject QP has wide scope over the NEG-element, suggesting that the subject has moved to the Spec-T position. Miyagawa [29] claims that the subject A-moves from Spec-*v* to Spec-T because T optionally bears an EPP-feature. Since the QP in Spec-T c-commands the negation, the QP takes wide scope over negation as exemplified by (53).

(53) [_{TP} Zen'in-ga_i [_{*v**P} t_i sono tesuto-o uke]-nakat-ta]T](koto)

all-NOM that test-ACC take-NEG-PAST that
 (= 'All did not take that test') all > not, (# not > all)

(54) a. [_{TP} Taro-ga [_{VP} zen'in-o home]-nakat-ta] koto.

Taro-NOM all-ACC praise-NEG-PAST that
 (= 'that Taro didn't praise all') not > all, (# all > not)

b. Zen'in-o_i Taro-ga [_{VP} t_i home]-nakat-ta koto.

all-ACC Taro-NOM praise-NEG-PAST that all > not (#not > all)

(Miyagawa [29])

A preferred reading of (54a) is that negation takes scope over the object QP which is c-commanded by the negation.¹⁴ According to Miyagawa, V moves to NEG and V-NEG complex raises to T. Now, if the object QP is scrambled to the left of the subject as shown in (54b), the QP can take scope over the negation. This interpretation is obtained if the object QP moves to the Spec-T position which c-commands the negation:

(55) [_{TP} Zein'in-o_i [_{v*P} Taroo-ga [_{VP} t_i home]-nakat-ta]] koto. (all > not, not > all)

If this analysis is on the right track, we can argue that the EPP feature on T motivates the scrambling of the object over the subject, which affects the binding relation and the scope interpretation between them.

What happens when the subject moves to Spec-T? Suppose that the subject of an individual-level predicate obligatorily moves to the Spec-T position in the sense of Kratzer [23]. In the following sentence (56) with an individual-level adjective, the subject should move to Spec-T:

(56) a. [_{TP} Taroo-ga zein'in-ni yasasiku-nai] koto. (not > all)

Taro-NOM all-DAT kind-NEG that
(='Taro is not kind to all people')

b. [_{TP} Zein'in-ni_i [_{TP} Taroo-ga t_i yasasiku-nai] koto. (all > not, not >all)

In (56a), negation takes scope over the object QP in situ while in (56b) the scrambled QP can take wide scope. This fact suggests that the object can target the outer Spec-T even if the subject moves to the inner Spec-T position. The same argument holds for German scrambling where the object precedes the subject DP:

(57) weil [_{TP} Professoren_i die Susi t_i mag] (=20b)

because professors-ACC the Susi-NOM likes

The object moves to the Spec-T position to get a generic interpretation regardless of whether the subject “die Susi” remains in Spec-*v** or moves to the inner Spec-T position. Since T can agree in principle with the subject DP without attracting it, the movement of the subject to Spec-T is optional. The EPP-feature which attracts the object has semantic output effect that is related to the interpretation INT. Furthermore, we can explain the scope ambiguity caused by scrambling without recourse to reconstruction at the trace position. Suppose that the subject QP in Spec-*v** has a QU-feature (=quantifier) which is attracted by T or determined by the AGREE relation. If the subject QP moves to Spec-T and the object QP moves to the outer Spec-T position, their surface c-command relation determines the scope interpretation (=58a). If the subject QP remains in Spec-*v** and agrees with T, the QU-feature of the subject can take scope over the object QP (=58b):

- (58)a. [_{TP} dareka-o_i daremo-ga_j [_{v*P} t_j t_i hometa]] $\exists > \forall$ (=15b)
 someone-_{ACC} everyone-_{NOM} admired
- b. [_{TP} ___ dareka-o_i [_{v*P} daremo-ga_j t_i hometa] T] $\forall > \exists$ (=15a)
 QU \uparrow _____ | AGREE

Thus, the present analysis dispenses with the reconstruction to explain the scope ambiguity of the object QP scrambled across the subject QP. Bayer and Kornfilt [1:18-21] show that the bound pronoun can be bound by a quantified NP even if the pronoun to be bound precedes the subject, while it is not the case when the subject is a referential DP:

- (59) a. dass [_{TP} seine_i Eltern_i [_{v*P} jeder_i t_i sehr liebt] T]
 that his parents-_{ACC} everybody-_{NOM} very loves
 (=‘that everybody loves his parents very much’)
- b. *dass [_{TP} seine_i Eltern der Hans_j [_{v*P} t_j t_i sehr liebt] T]
 that his parents-_{ACC} the Hans-_{NOM} very loves
 (=‘that Hans loves his parents very much’)

They claim that this is evidence for base-generation of (59). However, if we assume that in (59a) only the object DP undergoes the A-movement to Spec-T and the QP remains within *v*P*, the intended interpretation is possible: T agrees with the subject QP, and the [QU]-feature is mapped onto TP under the AGREE-relation, so that the subject QP binds the pronoun at LF. On the other hand, the subject in (59b) is a referential DP that has no [QU]-feature. Therefore, it cannot bind the fronted pronoun, even if T agrees with it. Thus, (59b) is correctly ruled out.

3.4. PF Movement without Semantic Effect

Last, I define the scrambling with an A'-property that must be reconstructed as a PF movement. All the scrambling phenomena in Japanese where the object precedes the subject but causes no semantic effect involve a focal stress.¹⁵ Thus, the relevant feature driving the movement is a [+F] feature (=‘focus’) hosted in T. Consider once again the relevant configuration (=60). The referential strong anaphor “jibun-jisin” (=‘himself’) can precede the subject, whereas the inherent weak reflexive “ware” (=‘self’) may not (=61):

- (60) a. Jibunjisin-o_i [_{TP} Taro-ga t_i syookaisita].
 himself-_{ACC} Taro-_{NOM} introduced (=‘Taro introduced himself’)

- b. [_{TP} Jibunjisin-o_i[+F] [_{TP} Taroo-ga (jibun-jisin-o_i) syookaisita] T⁰].
copy [+F]

- (61) a. [_{TP} Taroo-ga huto ware-ni t_i kaetta]
 Taroo-NOM suddenly himself-DAT came back
 (=‘Taro suddenly came back to himself’)
 b. *??[_{TP} Ware-ni_i [_{TP} Taroo-ga huto t_i kaetta]]

In (61b), the unstressed inherent reflexive resists scrambling because it is not compatible with the focus feature [+F]. In (60b), T has an uninterpretable [+F]-feature as an EPP feature, and the object anaphor bears the same F-feature. T agrees with the object DP and attracts it to the Spec-T position to delete the F-feature. Although the F-feature is interpretable in PF and at the discourse pragmatic level, it has nothing to do with the semantic output at LF. Once MOVE applies and the uninterpretable feature is deleted, it is spelt out to the PF component and the head of the movement chain is deleted. Consequently, the anaphor is interpreted in its copy position at LF. As a result, we get the reconstruction effect: the anaphor is bound by the subject at LF.

In German, on the other hand, the edge position of T is instead reserved for non-focused elements like weak pronouns or phonologically ‘light’ DPs. Let us call the relevant phonological feature [+P] (=pronominal). If a sentence contains non-referential nominative pronouns like “es” (=‘it’) or “man” (=‘one’), they must move to the edge position of T (cf. Haider [16]):

- (62) a. weil [_{TP} man_i ja heute t_i nicht in die Kirche geht]
 because one-NOM PRT today not into the church goes
 (=‘because people don’t go to the church today’)

- b. *weil [_{TP} ja heute man nicht in die Kirche geht]

- (63) a. weil [_{TP} es_i ja doch gestern t_i geregnet hat]
 because it-NOM PRT PRT yesterday rained has
 (=‘Because it was raining yesterday’)

- b. *weil [_{TP} ja doch gestern es geregnet hat]

Other definite pronouns can occupy several positions as shown in (64): ¹⁶

- (64) a. [_C weil] [_{TP} ja wahrscheinlich [_v*P ein Mann es ihr gegeben] hat]
 because PRT maybe a man-NOM it-ACC her-DAT given has

- (='because a man perhaps gave it to her')
- b. [C weil] [TP *es_i ihr_j ja* wahrscheinlich [v^*P ein Mann t_j t_i gegeben] hat]
- c. *??[C weil] [TP ein Mann_i ja wahrscheinlich [v^*P t_i *es ihr* gegeben] hat]
- d. [C weil] [TP *er_k es_i ihr_j ja* wahrscheinlich [v^*P t_k t_j t_i gegeben] hat]
 because he_{-NOM} it_{-ACC} her_{-DAT} PRT perhaps given has
 (= 'Because he perhaps gave it to her')
- e. *[C weil] [TP *es_i ihr_j ja* wahrscheinlich [v^*P *er* t_j t_i gegeben] hat]
 because it_{-ACC} her_{-DAT} PRT perhaps he_{-NOM} given has
- f. *[C weil] [TP *ja* wahrscheinlich [v^*P *er es ihr* gegeben] hat]
 because PRT perhaps he_{-NOM} it_{-ACC} her_{-DAT} given has

In (64a), all DPs remain within v^*P , suggesting that no [+P] feature is involved. In (64b), where definite pronouns precede the modal particle “ja”, [+P] feature on T attracts the pronouns while the indefinite subject remains in v^*P . The sentence (64c) is unacceptable, because the indefinite subject that has no [+P]-feature moves to the Spec-T position while the definite pronouns with [+P] remain in situ. On the other hand, if the subject is a definite pronoun as shown in (64d)-(64f), it must obligatorily move to Spec-T. Thus, the subject weak pronoun cannot remain in the Spec- v^* position (cf. (64e) and (64f)). This fact is reminiscent of the MLC effect. Note that the [+P]-feature is interpretable in a DP while it is not in T. If T has a [+P]-feature optionally, it seeks a goal that matches with the [+P]-feature and attracts the matched DP. Since the pronominal subject with [+P] is at the edge position of v^*P , it cannot remain in situ and moves further to the Spec-T position to delete the uninterpretable [+P]-feature on T. T can attract pronominal objects with [+P] across an intervening indefinite subject, because the indefinite does not have a matching [+P]-feature (cf. (64b)). Suppose that T has no [+P]-feature. If a pronominal DP is instead embedded in the domain of v^*P whose edge is occupied by an indefinite subject without [+P], the pronominal objects need not move to Spec-T:

- (65) a. [v^*P DP<sub><Pronoun>[+P]] [v^* DP_{<Pronoun>} [VP DP V⁰] v^{*0}] T⁰_[+P]
 b. [v^*P NP_{<indefinite>} [v^* DP_{<Pronoun>} [VP DP V⁰] v^{*0}] T⁰</sub>

If the edge of v^*P is an indefinite NP subject, other pronominal objects can remain in situ. Because only the edge and the head of v^* is accessible from the higher probe T, this fact is explained straightforwardly.

Scrambling the anaphor across the subject in (11a), repeated here as (66), falls under the

A'-movement to the Spec-T position:

- (66) dass [_{TP} sich_i [_{v*P} jeder_i (sich_i) wiedererkannte]_T]
 that REFL-_{ACC} everybody-_{NOM} recognized
 (=‘that everybody recognized himself’)

In (66), the reflexive pronoun ‘sich’ that bears a [+P]-feature moves to the Spec-T position while it moves back to the base-position at LF. Alternatively, T (or AGR) may be a possible binder of the anaphor in (66) because the scrambled anaphor always takes the nominative DP as its antecedent (cf. Frey [10]). Thus, scrambling the anaphor across the object antecedent in (11d), repeated here as (67), is unacceptable:

- (67)(=11d) *dass [_{TP} sich_i ich_j [_{v*P} t_j den Hans_i t_i im Spiegel zeigte]]
 that REFL-_{DAT} I-_{NOM} the-Hans-_{ACC} in the mirror showed
 (=‘that I showed Hans to himself in the mirror’)

However, it should be noted that reconstruction of the anaphor at LF is obligatory as the following contrast (68) demonstrates:

- (68) a. dass sich_i [_{v*P} Hans_i nie t_i rasiert]_T (=‘that Hans never shaves himself’)
 that REFL-_{ACC} Peter-_{NOM} never shaves
 b. *dass sich_i er_i [_{v*P} t-_{sub} nie t_i rasiert]_T (=‘that he never shaves himself’)
 that REFL-_{ACC} he-_{NOM} never shaves

If T serves as the binder of the scrambled anaphor, (68b) would be grammatical. The contrast between (68a) and (68b) shows that in (68a) the anaphor ‘sich’ is reconstructed and bound by the subject ‘Hans’ at LF, while in (68b) the subject pronoun has A'-moved to Spec-T due to the [+P]-feature and fails to bind the anaphor. The referential pronoun ‘er’ is instead bound by the anaphor, hence ruled out as a violation of Principle (C).

Unlike Japanese, a heavy element does not undergo this kind of PF movement. The reciprocal pronoun ‘einander’ (=‘each other’) that is a phonologically heavy element cannot scramble to the left of the subject as Bayer and Kornfilt [1] point out:

- (69) *dass einander_i [_{die} Familienmitglieder_i (einander_i) nicht mögen]
 that each other-_{ACC} the family-members-_{NOM} not like

(='that the members of the family dislike each other.')

Since “einander” bears no [+P]-feature and does not A'-move to Spec-T in (69), it cannot be reconstructed in its object position.

According to the Mapping Hypothesis developed by Diesing [8], VP (or v^*P) corresponds to the existential domain where every indefinite NP is interpreted existentially. However, since the definite pronouns have nothing to do with the operator status or existential reading, the Mapping Hypothesis cannot account for the pronoun movement in German above (cf. (64a)-(64f)). The Mapping Hypothesis wrongly predicts that all the pronouns move out of the VP-domain or remain in situ. The present approach correctly captures the empirical data in which pronominal DPs optionally A'-scramble to Spec-T.

I would like to stress that A'-movement in PF and A-scrambling can never be combined together: a DP either A-moves to Spec-T via Spec- v^* or A'-moves to Spec-T. It should be also kept in mind that only pronominal light elements bear the PF relevant [+P]-feature, which triggers a PF movement to the edge of T. Since indefinites and QPs cannot bear a [+P]-feature, they do not undergo an A'-movement in PF. Therefore, scrambling of these elements discussed in 3.3 is unambiguously an A-movement, so that the present approach clearly distinguishes between A- and A'-movement with respect to scrambling.¹⁷ One may argue that the scrambling of a DP containing a bound pronoun over the subject QP does not affect LF output (cf. (12a) vs. (12b)). However, the following contrast reveals that the scrambling of the bound pronoun across the QPs affects LF output:

(70) a. Gestern hat jeder Professor_i jedem Studenten_j seine_{i,j} Dissertation gegeben.

yesterday has every professor-NOM every student-DAT his dissertation given

(='Yesterday, every professor gave every student his dissertation')

b. Gestern hat [seine_i Dissertation]_k [jeder Professor_i jedem Studenten_j t_k gegeben]

(Lee and Santorini [25:286])

In the sentence (70a), where no scrambling takes place, the pronoun “seine”(=his) can be bound by the object QP as well as by the subject QP. In (70b), the object with the bound pronoun is scrambled across the subject. In this case, the pronoun can be bound by the subject QP, but not by the object QP. Lee and Santorini [25:285ff.] argue that the scrambled phrase is reconstructed ‘minimally’, i.e. it moves back to an intervening landing site, but not to its base-position in (70b). However, we don't have to take recourse to reconstruction. The scrambled DP in (70b) has A-moved to Spec-T through (outer)

Spec- v^* while the subject QP remains in Spec- v^* . The subject QP, then, agrees with T, which attracts the [QU]-feature at LF. Therefore, the subject QP still binds the pronoun in (70b). Suppose that in (70b) the [QU]-feature of the dative QP is interpreted at the v^*P . Consequently, it cannot bind the pronoun “seine”. Thus, (70b) is evidence that the scrambling of the bound pronoun affects the LF output effect.

There is a distinction of semantically vacuous PF scrambling between German and Japanese: In German, definite and topic-like elements tend to precede indefinite and focal ones, whereas in Japanese focal or heavy elements tend to move to the initial position of a sentence. However, this difference is reduced to language-specific PF phenomena. If all the A'-properties of scrambling are attributed to the PF movement to the edge of T, we can conclude that other orders in which the object precedes the subject are triggered by an EPP feature, hence an A-movement. Therefore, scrambling in this case is not optional but motivated by LF output effect. In the present analysis, the Spec-T position is considered to be A- as well as A'-positions. Since OV languages like German and Japanese do not have an obligatory EPP feature on T, this multiple functionality of Spec-T causes no theoretical problem.

4. Conclusion

I have shown that the phenomena related to scrambling are heterogeneous: (i) flexible word order of VP-internal arguments is base-generated by first Merge, (ii) the short scrambling with A'-properties is motivated by the PF operation that moves a constituent into the edge of TP like the TH/EX rule, which Chomsky [7] formulates specially for English, (iii) the scrambled structures that display A-properties are derived through the cyclic movement that is triggered by the EPP-feature of v^* and T. It follows from this that only arguments can scramble. Since the Spec- v^* position is not available as a viable landing site in VO languages like English and French which lack object shift, it is expected that they don't have scrambling.¹⁸ If we limit the range of scrambling to argument movements in this line, scrambling phenomena must be analyzed in the narrow syntax.

Notes

* I would like to thank two anonymous reviewers for helpful suggestions and Peter M. Skaer for checking my English.

1 Fukui and Takano [13] argue that the head-last order in OV-languages reflects the base order involving no movement, whereas the head-initial order in VO-languages is derived by movement, contrary to Kayne's LCA approach.

2 Fukui [11] assumes that Japanese lacks the functional category I and the subject stays within VP under the VP-internal subject hypothesis. Kuroda [24] takes the same line, but suggests that scrambling can target the Spec-I position. In German, the subject does not raise to Spec-T in ergative constructions (=i). In so-called impersonal passives (=ii), the subject position is not filled for which an expletive pronoun *pro* is assumed (cf. Cardinaletti [4], Grewendorf [14]):

- (i) dass [_{TP} *pro* [*der Oma* *das Laufen schwerfällt*]]
that the grandmother-DAT the walking hard-become
(='that the walking is hard for the grandmother')
- (ii) dass [_{TP} *pro* [*gestern getanzt wurde*]]
that yesterday dance was
(='that there was dancing yesterday')

3 In German, VP topicalization in a verb second (=V2) construction is possible whereas VP scrambling within TP is unacceptable:

- (i) [_{CP} [_{VP} *Autos repariert*]_i hat [_{TP} *Peter noch nie t_i*]]
cars fixed has Peter-NOM yet never
(='Peter has never fixed cars')
- (ii) * [_{CP} dass [_{TP} [_{VP} *Autos repariert*]_i *Peter noch nie t_i hat*]]

4 Bayer and Kornfilt [1] argue that if scrambling were a movement to an A'-position, the following example should exhibit a WCO-effect, which is absent:

- (i) dass [_{TP} *jeden_i* *seine_i Eltern t_i lieben*]
that everybody-ACC his parents-NOM loves
(='that everyone is loved by his parents')

5 Ueyama [40] points out that long distance scrambling is impossible when the matrix verb is a factive verb (=i), whereas it is possible if the NP moved over a clause boundary is interpreted as a focus (=ii):

- (i) *Sono hon-o_i John-ga [Mary-ga t_i katta no-o] wasureta.
that book-ACC John-NOM Mary-NOM bought COMP forgot
(='That book, John forgot that Mary bought')
- (ii) ?SONO HON-o_i John-wa [Mary-ga t_i katta no-o] wasureta

that book-ACC John-NOM Mary-NOM bought COMP forgot
 (=‘It is that book that John forgot that Mary bought’)

Although the sentence (ii) is not perfect, (i) is much worse than (ii). This contrast supports the view that long distance scrambling in Japanese involves a focus phrase.

6 The argument structure of the verb “geben”(=‘give’) can be represented in another way, even if we admit that the order of objects reflects the argument structure:

“geben”: (x [NOM] CAUSE (BECOME (BE (z [ACC], AT (y [DAT])))

Miyagawa [28] points out that in Japanese, the dative DP is Case-marked in the dative-accusative order while the dative DP in the accusative-dative order is a PP.

7 It is sometimes suggested that the unmarked word order of the objects in German can be determined by the animacy of the nouns such that animate arguments precede inanimate arguments in the unmarked order (cf. Hoberg [19]). Thus, there are two unmarked orders of the objects when they are both animate (cf. Vogel and Steinbach [42: 69]):

(i) Es hat ein Freund einem Mädchen einen Jungen vorgestellt. (=unmarked)

It has a friend-NOM a girl-DAT a boy-ACC introduced

(=‘A friend introduced a boy to a girl’)

(ii) Es hat ein Freund einen Jungen einem Mädchen vorgestellt.(=unmarked)

It has a friend-NOM boy-ACC a girl-DAT introduced

8 Ura [41] claims that the accusative-dative order in Japanese ditransitive clauses is derived by the feature checking of V_{mid} , similar to OS in Scandinavian languages. However, his account cannot explain the motivation of the object movement because the checking feature of V_{mid} is in principle weak and hence, the object shift must be optional in Japanese.

9 Bošković and Takahashi [3] also assume that θ -role assignment is checked at LF.

10 OS is possible in Scandinavian languages only if the head of VP moves out of VP as demonstrated in (ii)(c). An indefinite object which receives an existential reading cannot be shifted across the negation (= (i)(a) vs. (i)(b)), whereas OS is allowed if the object is a definite DP which receives a specific reading (= (ii)(b)). Furthermore, the shifting of definite pronominal objects is obligatory as indicated in (iii). (cf. Holmberg, A. and C. Platzack [20]):

(i) a. Jón las ekki bækur. b. ?*Jón las bækur_i ekki t_i. (Icelandic)

John read not books John read books not

(ii) a. Jón las ekki bækurnar. b. Jón las bækurnar_i ekki t_i.

John read not book-the John read book-the not

c. *Jón hefur bækurnar_i ekki lesið t_i. (=no V-raising)

John has books-the not read

(iii) a. *Jón las ekki þær. b. Jón las þær_i ekki t_i.

John read not them John read them not

11 Kikuchi, Oishi and Yusa [22] assume that a scrambled phrase is marked with the feature [+SC(rambled)] and it has to be checked against a head which also has [+SC]. However, the [+SC] feature is just a restatement of the scrambling phenomena since they claim that the [+SC] feature is semantically vacuous. Haeberli [18] argues that the crucial factor determining movement in OS is not a semantic notion like specificity but rather the categorial status of nominal arguments. The fact that in OS only objects with a specific interpretation move out of the VP can then be captured under the assumption that the [+specific] feature is related to D, whereas the object (indefinite) NPs remain in the VP-internal base position.

12 Chomsky [7] rejects the analysis in which the movement is motivated by discourse factors such as topic or definiteness. Although the movement phenomena cannot be described in terms of teleological notions, the concept of specificity seems to play a semantic role at LF.

13 However, scrambling in German and Japanese differs from OS in Scandinavian languages in that the former involves the movement of the object across the subject, i.e. to the Spec-T position, which OS in Scandinavian languages does not cover.

14 Note that the wide scope of the universal quantifier is due to the group reading of “zen’in”(=all) as Miyagawa [29] points out.

15 One might think that the scrambled element in Japanese is a topic. However, unlike German, unstressed pronouns resist moving to the initial position in Japanese:

- (i) a. ??Kare-o₁ kinoo Naomi-ga t₁ hometa (yo).
him-ACC yesterday Naomi-NOM admired PRT
(=‘Yesterday, Naomi admired him’)
- b. ??Sore-o₁ kinoo Naomi-ga t₁ katta (yo).
that-ACC yesterday Naomi-NOM bought
(=‘Yesterday, Naomi bought it’)

The sentences (i) are only suitable in a context in which the pronominal elements are emphasized:

- (ii)A: Naomi-wa daremo home-nakatta-to omou yo.
Naomi-TOP no one-ACC admire-NOT-COMP think
(=‘I think Naomi admired no one’)

- B: Iya, KARE-o₁ [+F] kinoo Naomi-wa t₁ hometa yo.
No HIM-ACC yesterday Naomi-TOP admired PRT
(=‘No, HIM, Naomi admired’)

The fronted pronouns must be interpreted as emphatic focus elements. Notice further that in Japanese, long or heavy constituents tend to be fronted to the initial position rather than short

elements:

(iii) [Sensei-ga kinoo susumeta hon-o]_i Taroo-ga t_i yonda.

teacher-NOM yesterday recommended book-ACC Taro-NOM read

(='Taro read the book which the teacher recommended yesterday')

This phenomenon contrasts with German scrambling which has a reverse tendency: in German, short or phonologically light constituents are fronted. This might be determined by pragmatic or discourse conditions at the performance level or as parsing problems, thus outside the narrow syntax. However, if it is just a pragmatic condition, simple functional factors should be operating like "topic elements appear on the left while focus (rheme) on the right side". Because Japanese does not fall into this generalization, scrambling must be explained in another way.

16 This problem is observed by Lenerz [26]. See also Yoshida [45].

17 An anonymous reviewer pointed out this problem to me. If a DP that has moved to Spec-*v** would successively A'-scramble to Spec-T, it could be reconstructed into its original position. Here, I assume that A'-scrambling to Spec-T applies only for first Merge positions.

18 It has been suggested that the head final parameter is crucial as to whether scrambling is possible (cf. Fukui [12], Haider and Rosengren [17], Saito and Fukui [37]). However, the head parameter is too narrow to capture the fact that some SVO languages like Russian allow scrambling. Although I cannot pursue the issue here, it seems that the necessary condition for scrambling is that the Spec-*v** position is available and Spec-T counts as a possible landing site for object scrambling.

Works Cited

1. Bayer, J. and J. Kornfilt. 1994. Against scrambling as an instance of Move-alpha. In *Studies on Scrambling*, ed. Corver, N. and H. v. Riemsdijk, 17-60. Berlin ; New York: Mouton.
2. Bierwisch, M. 1988. On the grammar of local prepositions. In *Syntax, Semantik und Lexicon*, ed. M. Bierwisch, W. Motsch and I. Zimmermann, 1-65. Berlin: Akademie Verlag.
3. Bošković, Ž. and D. Takahashi. 1998. Scrambling and Last Resort. *Linguistic Inquiry* 29: 347-366.
4. Cardinaletti, A. 1990. Es, pro, and Sentential Arguments in German. *Linguistische Berichte* 126, 135-164.
5. Chomsky, N. 1995. *The Minimalist Program*. Cambridge, Mass.: MIT Press.

6. Chomsky, N. 1998. *Minimalist Inquiries: the Framework*. MIT occasional papers in linguistics 15.
7. Chomsky, N. 1999. *Derivation by Phase*. MIT occasional papers in linguistics 18.
8. Diesing, M. 1992. *Indefinites*. Cambridge, Mass.: MIT Press.
9. Fanselow, G. 2000. *Features, θ -roles, and Free Constituent Order*. Ms. University of Potsdam.
10. Frey, W. 1993. *Syntaktische Bedingungen für die Interpretation*. Berlin: Akademie-Verlag
11. Fukui, N. 1986. *A theory of category projection and its implications*. Doctoral dissertation. MIT, Cambridge, Mass.
12. Fukui, N. 1993. Parameter and optionality in a grammar. *Linguistic Inquiry* 24: 399-420.
13. Fukui, N. and Y. Takano. 1998. Symmetry in Syntax: Merge and Demerge. *Journal of East Asian Linguistics* 7: 27-86.
14. Grewendorf, G. 1989. *Ergativity in German*. Dordrecht: Foris.
15. Grimshaw, 1992. *Argument Structure*. Cambridge, Mass.: MIT Press.
16. Haider, H. 1993. *Deutsche Syntax – generative*. Tübingen: Narr.
17. Haider, H. and I. Rosengren. 1998. Scrambling. *Sprache und Pragmatik* 33, 1-104.
18. Haeberli, E. 2000. Towards Deriving the EPP and Abstract Case. *Generative Grammar in Geneva* 1:105-139.
19. Hoberg, U. 1981. *Die Wortstellung in der geschriebenen deutschen Gegenwartssprache*. München: Hueber.
20. Holmberg, A. and C. Platzack. 1995. *The Role of Inflection in Scandinavian Syntax*. Oxford, New York: Oxford University Press.
21. Kayne, R. 1994. *The antisymmetry of syntax*. Cambridge, Mass.: MIT-Press.
22. Kikuchi, A., M. Oishi and N. Yusa. 1994. Scrambling and Relativized L-Relatedness. In *MIT Working Papers in Linguistics* 24, ed. H. Ura and M. Koizumi, 141-158.
23. Kratzer, A. 1989. Stage and Individual Level Predicates. In *Papers on Quantification*, 147-221. Amherst: GLSA, University of Massachusetts.
24. Kuroda, S.-Y. 1988. Whether we agree or not. In *Papers from the Second International Workshop on Japanese Syntax*, 103-143. Stanford, Calif.: CSLI Publications.
25. Lee, Y-S. and B. Santorini. 1994. Towards resolving Webelhuth's paradox: evidence from German and Korean. In *Studies on Scrambling*, ed. Corver, N. and H. v. Riemsdijk, 257-300. Berlin ; New York: Mouton.
26. Lenerz, J. 1993. Zur Syntax und Semantik deutscher Personalpronomina. In *Wortstellung und Informationsstruktur*, ed. M. Reis, 117-154. Tübingen: Narr.

27. Mahajan, A. 1990. *The A/A-bar distinction and movement theory*. Doctoral dissertation. MIT, Cambridge, Mass.
28. Miyagawa, S. 1997. Against Optional Scrambling. *Linguistic Inquiry* 28: 1-25.
29. Miyagawa, S. 1999. *EPP, Scrambling and WH-in-situ*. MS.
30. Müller, G. and W. Sternefeld. 1993. Improper movement and unambiguous binding. *Linguistic Inquiry* 24: 461-507.
31. Pesetsky, D. 1989. *Language-particular processes and the Earliness Principle*. Ms., MIT.
32. Rizzi, L. 1986. On chain formation. In *Syntax and Semantics 19: The syntax of pronominal clitics*, ed. H. Borer, 65-95. New York: Academic Press.
33. Ross, J. 1967. *Constraints on Variables in Syntax*. Doctoral dissertation, MIT, Cambridge, Mass.
34. Saito, M. 1985. *Some asymmetries in Japanese and their theoretical implications*. Doctoral dissertation. MIT, Cambridge, Mass.
35. Saito, M. 1989. Scrambling as Semantically Vacuous A'-Movement. In *An Alternative Conception to Phrase Structure*, ed. M. Baltin and A. Kroch, 182-200. Chicago: University of Chicago Press.
36. Saito, M. 1992. Long distance scrambling in Japanese. *Journal of East Asian Linguistics* 1: 69-118.
37. Saito, M. and N. Fukui. 1998. Order in phrase structure and movement. *Linguistic Inquiry* 29: 439-474.
38. Sauerland, U. 1998. *Erasability and Interpretation*. Ms. Kanda University of International Studies.
39. Stechow, A.v. and W. Sternefeld. 1988. *Bausteine syntaktischen Wissens*. Wiesbaden: Westdeutscher Verlag.
40. Ueyama, A. 1994. Against the A/A'-movement dichotomy. In *Studies on Scrambling*, ed. Corver, N. and H. v. Riemsdijk, 459-486. Berlin ; New York: Mouton.
41. Ura, H. 2000. *Checking Theory and Grammatical Functions in Universal Grammar*. Oxford: Oxford University Press.
42. Vogel, R. and M. Steinbach. 1998. The Dative – an Oblique Case. *Linguistische Berichte* 173, 65-90.
43. Webelhuth, G. 1989. *Syntactic saturation phenomena and the modern Germanic languages*. Doctoral dissertation, University of Massachusetts, Amherst.
44. Wunderlich, D. 1997. Cause and the Structure of Verbs. *Linguistic Inquiry* 28, 27-68.
45. Yoshida, M. 1999. Zur Bewegung der Personalpronomina im Deutschen. *Studies of Language and Culture* 25, 1-27. Hiroshima University.