

Free Word Order and Minimalism

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In the generative tradition, "Scrambling" is the cover term for the transformation that derives non-canonical word order patterns in free word order languages such as Japanese, Russian, German, Hindi and others. In such languages, constituents appear in a variety of surface orders, without changing the core meaning of the sentence. Typical Japanese examples are given in (1), where (1a) is the unmarked order, and (1b) the "scrambled" order.

- 1) a. Mary-ga sono hon-o yonda (koto)
 Mary-Nom that book-Acc read (fact)
- b. sono hon-o Mary-ga yonda (koto)
 that book-Acc Mary-Nom read (fact)
 'Mary read that book.'

The notion that some orders are derived from others was proposed by Ross (1967) who showed that the process was constrained exactly as other movement processes are (such as WH-movement). Under the assumptions of Government and Binding Theory (GB), scrambling was an important example of Move-Alpha to examine scientifically, because its properties could tell us more about the computational system of the human mind. Within GB, there was general consensus that scrambling was a syntactic movement process, hence an instance of Move- α . The central debates concerning the mechanics of scrambling revolved around the *nature* of the movement involved -- does it pattern with A-movement processes such as Raising and Passive or with A'-movement processes such as WH-movement and Topicalization? There were advocates of both the A'-movement approach and the A-movement approach, though the latter were in the minority. The A vs. A'-movement debate did not die down in the 1990s, but was in a sense superseded by other issues more in the forefront in syntactic theory.

But Minimalist assumptions elevate scrambling to new importance because the attention has shifted to discover the *motivation* of all linguistic processes. Minimalist assumptions force us to consider the possibility that the human language system is constructed in such a way that only *required* transformations occur.

2) Minimalist claims about movement: (Chomsky 1995, 2000)

- a. *Movement is feature-driven*
- b. *Movement is obligatory*
- c. *Languages differ only in feature **strength** (must movement happen?)*
- d. *Landing positions are semantically relevant*

Requirements derive from the combination of language specific facts (morphology) and the necessity to create a syntactic object that can be understood, without interference, by the interpretive component of the mind, a related but independent mental module. For the systems to be able to communicate, the linguistic computational system combines lexical units in particular ways, and only in economical ways -- meaning nothing optional or superfluous happens. Thus French verb raising is obligatory (3a-b), forcing the word order S-V-adv-O and not S-adv-V-O, as in English (4):

- 3) a. Le président voit souvent Marie. (French)
 the president sees often Mary
- b. *Le président souvent voit Marie.
 the president often sees Mary
- 4) a. The President often sees Mary (English)
 b. *The President sees often Mary.

5) **V-raising parameter:** (*main*) verbs either (a) raise to Tense or (b) don't (Pollock 1989)

French, Italian: (a) English: (b)

With such processes, the motivation for the transformation (Verb raising) is clear -- a tensed phrase must get together with the verb, and if this is achieved by verb raising, as in French, then this process is obligatory. Scrambling appears to be very different: Questions have included the technical nature of the movement involved, the semantic effects induced (or not induced) by this process, and the issue of its apparent complete optionality in those languages that allow it at all -- a curious distinction from many other known movement processes.

6) Generative approaches to free word order

- Approach 1: No movement (2 kinds of languages) Fails empirically
- Approach 2: Scrambling (2 kinds of languages) The early generative approach
- Approach 3: Typological (no special processes for such languages)

Two related questions surrounding scrambling exist, and are now of central theoretical significance, which I will call the "feature (or agreement) problem" and the "optionality and motivation problem".

The "optionality and motivation problem" is as follows: Scrambling appears to always be optional. Clearly, this is a significant difference from overt WH-movement or verb-raising in those languages that have it. Given that there appears to be no semantic motivation for the movement, and indeed it behaves inertly with respect to most semantic properties (although not all, see the section on anti-cross-over above), in an economical system, scrambling should not exist. And yet it is very common. This leads to an economy issue -- why should it be possible to scramble when there is no **syntactic** reason for such movement, the underlying numerations are presumably the same, and the unscrambled order always takes fewer steps.

The "feature problem" can be schematized as follows: under Minimalist assumptions of economy, everything else being equal, overt phonological material does not move. When it does move (overt WH-movement, overt verb raising, etc.), it does so as the result of an "overtness" requirement on an *already existent feature-movement (or agreement) process* (such as the movement of the WH [+Q] feature into the relevant domain.) In WH-movement, [+Q] moves into the CP domain to eliminate a [+Q] feature in that domain (or is "attracted" by that domain's featural requirements), and the only language variation involves how much overt material is pied-piped along with the features that move. In this sense, overt movement is parasitic on feature-movement (or agreement), which is the true driving force. In the case of WH-movement, the elements involved have quantificational force, that is, they are necessarily moved to form an appropriate operator-variable chain required for proper (LF) interpretation. In essence, they are driven by LF interface considerations. In the case of scrambling, therefore, the question became, what is the relation involved that brings along overt material in scrambling instances, if any? After all, scrambling does not appear to feed any *unique* Operator-Variable relations. So there appears to be no such motivation, despite the mechanical A'-effects observed and it is not clear why such movement occurs. This is the "feature problem".

First we must address the possibility given in Approach 1: that scrambling does not in fact involve movement at all, in the standard sense, but rather base-generation of the "scrambled" XP, (Haider 1984, Bošković & Takahashi 1998 and Fanselow 2001). These works claim that what differentiates scrambling languages from non-scrambling languages involves not the wider availability of certain movement process but rather the wider availability of base-generation possibilities.

In Bošković & Takahashi (B&T), the proposal is made that languages like Japanese allow base-generated IP-adjunction structures whereas languages like English do not. Thus in the traditional scrambling pair given in (1), the (b) sentence is not derived from the (a) sentence, contra what is usually assumed in standard scrambling literature. Rather, in the (b) sentence the direct object *sono hon-o* can be directly merged into the IP-adjoined position that it occupies in the surface structure. At the level of Logical Form, the account runs, the element in question is lowered into its argument position, a possibility allowed by Japanese but not English (on their account this results from the relative strength of theta-features".) Weak theta-features, in Japanese, allow "late" theta-checking, at LF. This is shown in (7):

- 7) **sono hon-o** John-ga [Mary-ga **e** katta to] ometteiru
 [that book-Acc] John-Nom Mary-Nom bought that thinks
- LF Lowering*
↑

So, in fact, it is a conspiracy of two parameters that allows Japanese sentences like (1b), (i) base-generated IP-adjunction possibilities, and (ii) "late" theta-checking, whereby arguments can receive their theta-roles after LF lowering rather than at (initial) Merge. The analysis accounts nicely for several facts: first, the movement involved is in no way optional; rather, it is obligatory in all cases in order to check theta-features. Second, there is no optionality of scrambling problem remaining, since there is no scrambling. Third, the obligatory reconstruction of scrambled elements now falls out from the obligatory lowering process -- the elements must lower at LF (to get their theta-roles) and therefore they must be interpreted in the lowered position.

However, B&T's argument does not hold up to empirical testing, as shown in Bailyn (2001). There, I identify a set of three predictions to test between the base-generation vs. the movement hypotheses. In all three cases, evidence is provided from Russian or Japanese that supports a movement account. First, the Base-Generation account predicts no syntactic restrictions on the structural relation between the scrambled (base-generated) position and theta position, because it uses lowering, which never occurs in overt movement. But of course such restrictions abound. An example of a Russian Subjacency violations with WH-movement and scrambling are given in (8a) and (8b) respectively (from Bailyn 2001):

- 8) a. *Kogo_i ty pozvonil agentu kotoryj ljubit ?
 Whom-ACC you-NOM phone spy-DAT who loves
 'Whom did you phone a spy who loves?'
- b. *Borisa_i ty pozvonil agentu kotoryj ljubit t_i !
 Boris-ACC you-NOM phone spy-DAT who loves
 'It's BORIS you phoned a spy who loves!'

Second, the base-generation account does not allow for any sensitivity to construction type in terms of the reconstruction property. However, reconstruction of scrambled items for interpretation is not 100%, and a lowering-only approach cannot account for this. It is also not clear how Economy principles will allow a derivation of base-generation and then lowering when there is the option of using theta-position from the start. If the numerations underlying a scrambled and non-scrambled sentence are the same, we would predict no scrambling to be possible, on their account. Thus the Base-Generation plus lowering approach, despite its considerable appeal from a theoretical standpoint, does not hold up in the form presented by B&T.

Next comes the "Scrambling approach" using scrambling features. Of course, solving the feature problem in and of itself is technically simple. There could simply be a

scrambling feature associated with a particular XP (or XPs) in the numeration, that is attracted by the same feature hosted by a high functional category, perhaps T, perhaps C, or perhaps a Focus or Topic head. This is the approach taken by Grewendorf & Sabel (1999), Kawamura (2001) and others. This is a natural continuation of the GB-style Move- α approach, and it clearly moves the optionality question out of the pure syntax, where if the feature is present the movement obtains, and into the lexicon, as well as into the theory of functional categories. The big question under this approach is the nature of the movement involved. Is it A-movement (like Passive) or A-bar Movement (like WH-movement)?

The relevant properties of A and A'-movement are given in (9-13):

9) *A-movement changes binding relations, A'-movement does not*

- 10) a. *It seems to each other_i that the boys_i are intelligent.
 b. The boys_i seem to each other_i [______i to be intelligent] (A-movement)
- 11) a. *[Each other's_i friends] insulted [the boys_i]
 b. The boys_i were insulted ______i by [each other's_i friends] (A-movement)
- 12) a. *[Each other's_i dance partners] criticized the guests_i.
 b. *The guests_i, [each other's dance partners] criticized t. (A'-movement)
- 13) a. John_i told 700,000 stories about himself_i.
 b. [How many stories about himself] did John_i tell? (A'-movement)

Japanese appears to have mixed properties in this regard:

Japanese: (scrambling appears to change binding relations)

- 14) a. * [Otagai_i-no sensei]-ga karera_i-o hihansita]] (koto)
 each other-Gen teacher-Nom they-Acc criticized fact
 'Each other_i's teachers criticized them.'
- b. [**Karera_i-o** [[otagai_i-no sensei]-ga ______i hihansita]] (koto)
 they-Acc each other-Gen teacher-Nom ______i criticized fact
 'Them_i, each other_i's teachers criticized'

(15) summarizes the claims in the literature about the mechanical nature of Scrambling:

15) Descriptive Generalization: (from Grewendorf and Sabel 1998)

Japanese local (IP) scrambling is A-movement.
 German local (IP) scrambling is A'-movement

16) Common Claims about Scrambling (Saito 1992)

- a. Scrambling is optional movement
 b. Some languages have no scrambling at all
 c. Some scrambling is A-movement, some is A'-movement
 d. Scrambling contributes nothing to the meaning of the sentence (!)

These accounts provide the feature but in a sense skirt the optionality question by forcing the movement in those instances exactly when the feature is present. Scrambling itself is not then what is optional -- what is optional is the attachment of the scrambling feature to the particular lexical item. Certain questions come up immediately. Can we apply the scrambling feature freely? Can we apply it more than once in a given Numeration? (we must be able to, or there would be no multiple scrambling, which is attested) If we can,

what constrains it? How many items can carry the feature? Does the movement of each of these XPs not interfere with the derivation? What is the status of these examples with respect to Relativized Minimality. How *do* we account for the radical reconstruction property? What also remains unanswered in these accounts is the motivation of scrambling.

Feature-driven accounts of A'-scrambling run parallel in logic to Miyagawa's EPP account of A-scrambling: the process must be the result of some *independently motivated* agreement process, driven by features that are perhaps associated with discourse factors that have yet to be fully understood. On any analysis, if the two have the same numeration, one of the two derivations should be eliminated as less economical (the scrambled one). Feature-driven accounts, of course, have the advantage that the numerations associated with the scrambled and non-scrambled orders are not identical. One numeration contains the relevant feature driving the scrambling and the other does not. But if these features exist purely to expedite scrambling, we have simply redefined the problem, and moved it, in a sense, into the lexicon or into the process of selecting a numeration. So we must try to independently identify some kind of systematic difference between scrambled and non-scrambled sentences, to find the relevant features driving the movement and can imagine distinct numerations.

Also, purely mechanically, if one allows the movement to be feature driven by a "scrambling" feature, it is not clear why Relativized Minimality is not violated in every instance of multiple scrambling. And under the strongest minimalist assumptions, nothing should be able to motivate movement that does not have relevance to one of the interfaces.

Instead, let us consider the Typological Approach, summarized in (17):

17) The Typological Approach: (Miyagawa 1997, 2000, in press, Bailyn 2001, in press)

- a. There is no unified process such as scrambling.
- b. What is called A-scrambling is an **Inversion** process (Collins 1997)
- c. What is called A'-scrambling is a **Topic/Focus** process (Kidwai 2000)

18) Inversion: Movement of a non-subject into subject position (SpecTP)

- 19) a. Down the hill rolled John (Locative inversion)
- b. "Have a nice day" said the nightwatchman. (Quotative Inversion)

Russian appears to have many such constructions, as shown in (20):

- 20) a. В комнату вошел мальчик.
- b. «Скорее всего нет» ответил представитель президента.
- c. Солдата ранило пулей.
- d. Детьям нравится мороженое.
- e. У него возник вопрос.
- f. Книгу читает Иван.

21) **Overt SpecTP Parameter** ("Extended Projection Principle")

In SpecTP there either (a) must be a subject or (b) another constituent or (c) nothing

English, French:	(a)
Russian, Icelandic, Yiddish	(b)
Italian, Spanish, Welsh:	(c)

This covers the A-scrambling cases. For A'-cases, there must be a distinct motivation. The relation with discourse functions is a good place to start. In Bailyn

(2001), I show that there are consistent discourse effects from scrambling, and propose that organizational requirements of the Functional Form level (also called Information structure, similar to *aktual'noe clenenie predlozenija* forces scrambling to create orders, but the movement is constrained by usual principles. Thus discourse factors are the "motivation" and the optionality problem is addressed, but is it manifested in features?

After all, it is well known that marked orders differ from unmarked ones fairly systematically in terms of discourse status. And there is a large body of work, in both traditional and modern linguistics, devoted to analyzing these differences, that goes back at least to the early Prague School and Mathesius (1939), and runs through the work of the modern Prague school including Adamec (1966), Gundel (1974) and many others. Within the generative tradition, the idea that Topic/Focus structure and the syntax discourse interface is related to the scrambling phenomenon is either assumed or worked out from various perspectives in the following works: É. Kiss (various works, see bibliography), Karimi (in press), Meinunger (1995, 2000), Junghanns & Zybatov (1997), Kidwai (2000), Bailyn (1995, 2001), Erteschik-Shir (1997), Vallduví (1990), and many others.

22) Topic / Focus movement:

- Movement to a left A'-position (like Topicalization)
- Some of those high functional categories are discourse functional
- Movement is driven by movement requirements of the high functional categories

23) **The Topic / Focus movement Parameter:**

T/F relations either (a) are or (b) are not expressed by overt word order

Russian, Japanese, Hindi, Hungarian	(a)	(Zubizarreta 1998, Kiss in press)
English, French, German	(b)	

(24) then summarizes the major claims of the Typological approach:

24) Some language types:

<u>Root</u>	<u>what's in SpecT</u>	<u>V raising</u>	<u>direction</u>	<u>+Top/Foc</u>	<u>Language</u>
IP	subject	--	right	--	English
IP	subject	+	right	--	French
IP	XP	+	right	--	Icelandic
IP	XP	+	right	+	Yiddish
IP	XP	--	right	+	Russian / S-C
IP	XP	+	left	+	Japanese/ Korean
IP	nothing	--	right	--	Span/ Ital
IP	nothing	+	right	--	Celtic / Greek
CP	?	+	right	+	Arabic
CP	?	+	left	+	German
CP	?	+	right	?	Swedish

In conclusion, it appears that the direction of recent scrambling research can be unified in the following way: because of the anomalous optional character of what mechanically has been clearly demonstrated to be a syntactic operation, the process of scrambling must be related to other aspects of the grammar and not, in the final analysis, a core grammatical operation with no further explanation. Its mixed character is most likely the result of linguists previously lumping together two or more processes that ought to be considered separately. Miyagawa's direction in claiming that A-scrambling reduces to the EPP is the strongest and most promising claim in this regard. The A'-cases presumably involve the discourse/informational component in some way; this much is generally agreed upon. What is not agreed upon, however, and what must remain at the forefront of scrambling research, is the proper place of discourse factors in the overall architecture of the grammar -- is there a distinct level devoted to discourse/information structure, as argued by Zubizarreta (1998), Heycock and Kroch (1999), Vallduví (1992) and various others, or is it in some sense part of relevant LF information? If it is LF-related, the question remains of how the optional nature of scrambling is to be reconciled with the obligatory nature of WH-movement and Quantifier Raising (obligatory, that is, at least by LF), and can these differences be explained solely in terms of interface conditions that allow our description of human language to remain economical and explanatory? These appear to be major questions for future scrambling research, and because of their global nature, aspects of the future direction of linguistic research may in part be determined by findings in the area of free word order and movement.

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