A (Purely) Derivational Approach
to Russian Scrambling*

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1. Introduction

Progress in Linguistics is often made by applying results from one area to a different domain of inquiry. In this article, I bring together three distinct ideas, independently proposed in the literature in three distinct domains, and show that when taken together, they shed significant light on the properties of Russian scrambling and on word order freedom in general. By bringing together these three ideas, we can answer the major questions about "scrambling": is it optional and why does it have the properties it does in particular configurations? As background I assume that Russian canonical word order is SVO, and Japanese SOV, and that local reorderings, such as Japanese (1b) and long-distance reordering (such as (2b)), are derived from (1a) and (2a) respectively by a movement transformation.

(1) Japanese

\[
\begin{align*}
&\text{a. } \text{Mary-ga sono hon-o yonda (koto)} \\
&\text{Mary-Nom that book-Acc read (fact)} \\
&\text{b. } \text{sono hon-o Mary-ga t yonda (koto)} \\
&\text{that book-Acc Mary-Nom read (fact)} \\
&\text{'(the fact that) Mary read that book.'}
\end{align*}
\]

(2) Russian

\[
\begin{align*}
&\text{a. Novye znakomye Ivana predstavili} \\
&\text{new friends of Ivan introduced} \\
&\text{Mariju predsedatelju.} \\
&\text{Maria-Acc chairman-Dat} \\
&\text{''Ivan's new friends introduced Maria to the Chairman.'}
\end{align*}
\]

*Ideas in this article were presented at FASL 11 at UMass, Amherst, as well as at the EGG Summer School in Novi Sad, Yugoslavia in 2002. Thanks to all involved for discussion. All mistakes remain my own.
b. Mariju predstavili novye znakomye Ivana
   Maria-Acc introduced new friends of Ivan
   predsedatelju
   chairman-Dat

'Maria was introduced to the chairman by Ivan's new friends'

Here are the three ideas: First, local scrambling always occurs to satisfy the Extended Projection Principle (EPP), in the particular sense of the EPP being an overtness condition on SpecIP. This EPP idea is worked out for Japanese object scrambling by Miyagawa (1997, 2001) as well as for certain word order patterns in Russian by Babyonyshev (1996), Lavine & Freidin (2001) and in more general form as Generalized Inversion (Bailyn forthcoming, a), summarized below.

The second idea: Long-distance scrambling is (always) discourse-driven. This is explicit in Junghanns & Zybatow 1997, Miyagawa 1997, Zubizarreta 1998, Kidwai 2000, Bailyn 2001a,b and tacitly assumed in much other work. It is often assumed to be adjunction to IP, as in Kidwai 2000, but can also be done as movement to the Spec of a high functional category. I will use the adjunction analysis, although nothing crucial hinges on the choice for current purposes.

The third idea is the Epstein et al. notion of a purely derivational system where (all) conditions on linguistic expressions apply derivationally. This framework is laid out in Epstein et al 1998, Kitahara 1997 and developed for Japanese scrambling by Saito (2001) and Kitahara (2002). The subcomponent relevant to our discussion is straightforward -- interpretation happens cyclically, through "multiple spell-out", where partial linguistic expressions are sent off to the interfaces piece by piece, presumably in phases.

I propose allowing for "feature-splitting", in the spirit of Saito 2001, whereby only the formal features attracted by a particular head move (or are retained, under a copy theory), the others remain behind (or are deleted, under a copy theory). Armed with a derivational binding theory and the notion of feature-splitting, we will be able to eliminate the notions of A

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1I will not discuss VP-internal scrambling, although it seems the approach extends easily to those cases as well.
and A’-positions, as well as the need for a distinct process of reconstruction.

2. Are The Two Kinds of Scrambling Related?

That there are scrambling processes with two distinct sets of properties has been claimed in the syntactic literature since at least Webelhuth 1989 and Mahajan 1991 and for various scrambling languages -- Japanese, German, Hindi and others.²

2.1 Long Distance Scrambling as A’-movement

All instances of long-distance scrambling (from an embedded clause to a higher clause), show A’ properties. In particular, they do not change binding relations, as shown by the identical interpretations of (3a) and (3b).³

(3) No binding effects ("radical" or "total" reconstruction)

a. Ja xoču, čtoby studenty, pročitali

[I want that students read

[knigi drug o drugei] books-Acc about each other

'I want the students to read the books about each other.'

² Some authors have attempted to eliminate recourse to two kinds of Scrambling; Kidwai (2000) and Müller & Sternefeld (1993) claim that Scrambling, at least on the IP-level, is always an A’-process. However the evidence for A-properties is strong, see Grewendorf & Sabel 1998 among others. I assume the distinctions are relevant and need to be accounted for.

³ A’-movement includes adjunction to a maximal projection (here IP) or movement into the Specifier of a high functional category -- one which does not bear any directly lexically-related (L-related) features. Thus IP-joined position and SpecCP are A’ positions, being un-L-related, whereas Spec-IP is L-related, since INFL in an extension of V and verbally-related features reside there, whether they have morphological instantiation or not.
Further, A'-scrambling causes weak crossover violations, as in (4b), where the effect of scrambling the object over a coreferent pronoun is the same as instances of Quantifier Raising (4a):

(4) Weak Crossover

a. *Ja xoču, čtoby ee sobaka poljubila I want that [its\textsubscript{i} dog]-NOM loves každuju devočku [every girl]-ACC t\textsubscript{i}
   *'I want her dog to love every girl.'

b. *Každuju devočku ja xoču, čtoby [every girl]-ACC I want that ee sobaka poljubila [its\textsubscript{i} dog]-NOM loves t\textsubscript{i}
   *'I want her dog to love every girl.'

Finally, such constructions parallel WH-movement with respect to constraints like the coordinate structure constraint, subadjacency and so on. Thus in (5) we see that neither WH-movement nor scrambling is possible out of a coordinate structure:

(5) The Coordinate Structure Constraint: (German)

a. *Wen\textsubscript{i} hat jemand [t\textsubscript{i} und Maria] angemeldet whom-Acc has somebody and Maria registered
   *'Who did somebody register and Maria?'

b. * weil Hans\textsubscript{i} jemand because Hans somebody [t\textsubscript{i} und Maria] angemeldet hat and Maria registered has
   *'because Hans somebody has registered and Maria'

Similarly, we see in (6) that both processes are constrained by islands:
(6) **Subjacency**

a. *Kogo_{i} ty pozvonil agentu kotoryj ljubit ?
   Whom-ACC you phone spy-DAT who loves
   'Whom did you phone a spy who loves?'

b. *Boris_{i} ty pozvonil agentu kotoryj ljubit t_{i} !
   Boris-ACC you phone spy-DAT who loves
   'It's BORIS you phoned a spy who loves!'

It is clear, then, that Long Distance scrambling in Russian patterns with its counterpart in Japanese (Saito 1992, Grewendorf & Sabel 1998 among many others) and that it thereby constitutes a movement process of a similar kind.

2.2 **Local (IP-)Scrambling as A-movement**

Local instances of scrambling, on the other hand, show A-properties. Thus in (7) we see Saito’s examples of local scrambling changing binding relations in Japanese (the fronted object in (7b) can bind an anaphor embedded in the subject), and in (8a) Webelhuth’s example of the lack of WCO effects in German local scrambling, as in English raising in (8b), (compared with a standard violation in (8c)):

(7) a. * Otgai-no sensei-ga karera-o_{i} hihansita
   each other-Gen teacher-Nom they-Acc criticized
   *'Each other_{i}'s teachers criticized them_{i}'

b. **Karera-o_{i} [otgai-no sensei]-ga t_{i} hihansita
   they-Acc each other-Gen teacher-Nom criticized
   'Them_{i}, each other_{i}'s teachers criticized'

(8) a. weil **jeden_{i} [seine_{i} Mutter] t_{i} mag
   because each-Acc his mother-Nom likes
   'because each one his mother likes ...'

b. John_{i} seems to his_{i} father [ t_{i} to be intelligent]

c. *Who_{i} does it seem to his_{i} father that Mary likes t_{i}?

So let us take that is established that some instances of scrambling have A' properties and some have A-properties, and
that this correlates with landing site and distance covered.\footnote{Again, I will not discuss VP-internal scrambling in this article, but assume, following Grewendorf & Sabel (1998) and others, that it is related to Object Shift and is also an instance of A-movement.} This allows us to investigate their motivations separately and leads to interesting results.

2.3 Distinguishing the Two Scrambling Types

But why should scrambling be both? Various speculative answers have appeared. Perhaps IP-joined position truly has characteristics of both (a view suggested by Webelhuth 1989 and Chomsky 1995, but without much discussion). A somewhat more articulated answer is given by Mahajan (1991) -- both sets of properties can be found with scrambling because there are two kinds of landing sites for scrambling -- adjunction to IP (producing A' properties) and substitution into an L-related Specifier position, producing A-properties. If so, then mechanically speaking A' scrambling is like (English) topicalization and A-scrambling is like raising to subject. Let us assume this to be descriptively accurate, as appears valid.

Then why are the two even considered one process? Why are they both called "scrambling"? What do they have in common? And conversely, why aren't other processes that share their properties called "scrambling"? Why isn't German topicalization (of the pre-V2 initial element) (usually) not considered A' scrambling? Or Hungarian overt quantifier raising? Or English topicalization? And why isn't passivization or raising to subject called A-scrambling? Or Locative Inversion? Either the processes are defined by their characteristics, their properties, in which case the two kinds should be grouped separately, each with its natural compatriots, or something else unites them.

It seems to me that the reasons A' and A-scrambling have been confounded are the following: first, they both appear to be optional. Second, they involve no morphological changes. So what unites them is that they are not affix-driven movements; they are the exact opposite of the morpholexical processes described in Leonard Babby's work (e.g. Babby forthcoming), whereby a morpho-lexical affixation process changes something about the argument structure of a lexical argument and the syntactic results follow. With scrambling, the case endings and
verbal morphology are the same in the scrambled and non-scrambled order. And thus on most strong lexicalist approaches, the numerations underlying two sentences related by scrambling are the same, and therefore the scrambled derivation appears fully optional, something that has led linguists to consider the process purely stylistic, or purely phonological, or to change their theory of optionality.5

I propose ignoring here the fact that neither kind of scrambling is affix-driven, and treating them separately, one as an instance of EPP-driven substitution into SpecIP and the other as discourse-driven movement to the far-left of the clause. We can then see how the derivational approach allows their interpretive properties to be explained derivationally rather than stipulated by simply labeling one process A'-scrambling and the other A-scrambling.

3. The Syntax of A-Scrambling: IP-Inversion

Let's turn first to Inversion type scrambling. A lot of recent work converges on the idea that local scrambling is feature-driven, in the sense of Chomsky (1995). Thus Miyagawa (1997, 2001) argues that local object scrambling in Japanese is driven by the EPP (see (9)).

(9) Local scrambling as EPP (Miyagawa 1997, 2001):
   a. A-Scrambling is driven by the EPP
   b. Languages that have V-to-T and morphological case marking allow EPP-driven scrambling of the object

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5One approach is the Saito and Fukui (1998) idea that purely optional leftward movement processes (like scrambling) are free for right-headed languages (Japanese) but unavailable for left-headed languages (English) (which fails for Slavic scrambling) and another the Bošković and Takahashi (1998) idea that scrambling is a base-generated option with obligatory LF lowering, in effect eliminating the optionality of the movement involved. However the lowering account requires the controversial assumption that theta-roles are features whose strength is parameterized, allowing "late theta checking" in Japanese-type languages and also requires deletion of the base-generated trace in scrambled position, rendering the movement possible under the Proper Binding Condition but also predicting it to be unrestricted by any movement constraints, which leads to incorrect predictions for the Slavic data, and for Japanese (see Bailyn 2001a). Arguments against the Saito/Fukui approach are presented by Stjepanovic (1999).
At the same time various non-canonical word order constructions have been analyzed as EPP-driven -- Locative Inversion in English by Collins (1997) and in Russian by Babyonyshev (1996), so-called Subject-Object reversal in Kirundi by Ndariragije (1999), as well as Adversity Impersonals in Russian by Lavine & Freidin (2001):

(10) Down the hill rolled John. (Collins 1997 EPP acct of Loc Inv)
(11) (Kirundi) (Ndayiragije (1999) -- EPP acct of "Subj-Obj Reversal")
\[
\text{Amatá y-á-ra-nyôye abâna. O-V-S milk } 3s-PST\text{-drink:PERF children} \\
\text{'CHILDREN drank milk'}
\]
(12) (Russian) Lavine/Freidin (2001)--EPP acct of Adversity Impersonals
\[
\text{Soldata ranilo pulej} \\
\text{soldier-Acc wounded bullet-Instr} \\
\text{'The soldier was wounded by a bullet.'}
\]

In Bailyn (2001b, forthcoming a) I propose extending the EPP analysis to a wide range of Russian constructions and uniting them as instances of "Generalized Inversion". These include the Adversity Impersonals in (14), traditional Locative Inversion, other PP inversion constructions, Dative experiences, other kinds of impersonal sentences and Object Verb Subject sentences. These are illustrated in (12-20).

**Locative Inversion (LI):** (Babyonyshev (1996))

(13) a. V klasse pojavilsja noven’kij PP-V-S \\
in class appeared new (one) \\
'A new boy appeared in class.'
(14) a. U menja est’ vopros. PP-V-S \\
at me is question-Nom \\
'I have a question.'

**PP Inversion**

b. Na posadočnuju posolu prizemlilsja samolet. PP-V-S \\
on the runway landed airplane \\
'An airplane landed on the runway.'

b. U nas rodilas’ dočka PP-V-S \\
at us was born daughter-Nom \\
'A daughter was born to us.'
Dative experiencers

(15) a. Šaše nrajatsja deti
    Sasha-Dat likes-pl children-Nom
    'Sasha likes children.'

b. Soldatam vidna doroga
    soldiers-Dat visible-fem sg road-Nom-f-sg
    'The soldiers can see the road.'

"Bad health" verbs (Preslar 1998)

(16) Menja tošnit ot ryby O-V-PP
    me-Acc nauseates from fish
    'I feel sick from the fish.'

OVS:

(17) Ėtu knigu čitaet Ivan O-V-S
    [this book]-Acc reads Ivan
    'Ivan is reading this book.'

The Generalized Inversion analysis is schematized in (18a):

(18) a. Schema of Generalized Inversion (IP-level):

\[
\begin{align*}
\text{IP} & \quad \text{IP-Inversion} \\
\text{XP}_j & \quad \text{[+EPP]} \\
\text{I'} & \quad \text{[+EPP]} \\
\text{Pr}_j & \quad \text{[+EPP]} \\
\text{V}_k & \quad \text{Pr} \\
\end{align*}
\]

b. Characteristics of IP-Inversion:
    --non-Nominative XP in SpecIP
    --V precedes subject
    --differs from (standard) Topicalization (IP-adjunction)

All the constructions have the properties listed in (18b) and are analyzed as resulting from EPP-driven movement into SpecIP, accompanied by V-raising over the Nominative subject (if there is one), yielding the basic order O-V-S / PP-V-S / Dat-V-Nom.
The EPP account is supported by A-movement (subjecthood) tests, which reveal that all the constructions in question feed new binding relations and do not feed weak crossover violations (see Bailyn forthcoming a for more evidence.)

We can exemplify the lack of changes in binding relations using Principles A and C of the Binding Theory. In the examples (19-23), the (b) sentences all allow binding the inverted constituent to bind an anaphor it did not c-command before the movement. (The effect is reproduced in (19b) by use of the English passive, a typical A-movement process).

i. OVS (Japanese examples from Saito 2001)

(19)  a. *[Otagai-no-i sensei-ga] karera-o i hihansita
    each other's teachers-Nom they-Acc criticized
    *(Each other's teachers criticized them.)'

   b. ?Karera-o i [otagai-no-i sensei]-ga t hihansita
      they-Acc each other's teacher-Nom criticized
      'They were criticized by each other's teachers.'

ii. dative experiencers

(20) a. ???[Svoja-i rabota] nrvitsja Mašej
    [self's work]-Nom pleases Masha-Dat
    'Masha likes her work.'

   b. Mašej nrvitsja svoja-i rabota
      Masha-Dat pleases [self's work]-Nom
      'Masha likes her work.'

iii. possessive-PP inversion

(21) a. ???[Svoj-i dom] byl u Petrovyx-i
    [self's house]-Nom was at the Petrovs
    'The Petrovs had their own house.'

   b. U Petrovyx-i byl [svoj-i dom]
      at the Petrovs was [self's house]-Nom
      'The Petrovs had their own house.'

iv. adversity impersonals (22a-b from Lavine & Freidin (2001))

(22) a. *Puljami prinadležaščimi drug drugu
    bullets-INSTR belonging each other-DAT
    ranilo milicionerov
    wounded the police-ACC
    'Bullets belonging to each other wounded the policemen.'
b. Milicionerov ranilo pujlami
policemen-ACC wounded bullets-INST
prinadležaščimi drug drugu
belonging each other-DAT

'The police were wounded by bullets belonging to each other.'

Similarly, in (23-27), the inverted constituent binds an R-expression it did not previously c-command, triggering a Principle C violation. Both results are only possible, on LF-binding accounts, if the fronted constituent does not reconstruct -- this has often been used as a typical A-movement diagnostic, hence the English passives have the same effect.

i. OVS

(23) a. [Novye znakomye Ivana_i]
new friends of Ivan
predstavili ego_i predsedatel'ju.
introduced him-Acc chairman-Dat

'Ivan's_i new friends introduced him_i to the Chairman.'

b. *Ego_i predstavili [novye znakomye Ivana_i]
him introduced new friends of Ivan
predsedatel'ju
chairman-Dat

'*He_i was introduced to the chairman by Ivan's_i new friends'

(24) a. [Sluxi ob Ivane_i] volnujut ego_i.
rumors-Nom about Ivan worry him-Acc
'Rumors about Ivan_i worry him_i.'

b. *Ego_i volnujut [sluxi ob Ivane_i]
him-Acc worry rumors-Nom about Ivan
'*He_i is worried by the rumors about Ivan_i.'

c. [Ego_i znakomyx] volnujut [sluxi ob Ivane_i]
[his friends]-Acc worry rumors about Ivan
'His_i friends are worried by the rumors about Ivan_i.'

ii. Locative PP inversion

(25) a. [Znakomye Ivana_i] byli u nego_i doma.
friends of Ivan were at him at home
'Friends of Ivan's_i were at his_i house.'
iii. Possessive-PP inversion

(26) a. ?[Igruški Ivana] byli u nego.
   toys-Nom of Ivan were at him
   'Toys of Ivan she had.'

   b. *U nego byli [igruški Ivana].
   at him were toys-Nom of Ivan
   *'He had toys of Ivan's.'

iv. Dative experiencers

(27) a. [Znakomye Ivana] nравятся ему.
   friends-Nom of Ivan like him
   'Friends of Ivan please him.'
   (cf *He likes friends of Ivan.)

   b. *Ему nравятся [znakomye Ivana].
   he like-pl friends-Nom of Ivan
   *'He is liked by friends of Ivan.'

Further, EPP-movement (Inversion) does not cause weak crossover violations, as shown in (28-31).

(28) a. *Ее собака любит каждую девочку.
   [her dog]-NOM loves [every girl]-ACC
   'Her dog loves every girl.'

   b. [Каждую девочку] любит ее собака.
   [every girl]-ACC loves [her dog]-NOM
   'Every girl is loved by her dog.'

ii. locative inversion

(29) a. *[Ее уборщица] вшла в каждую комнату.
   its cleaning lady entered into every room
   'Its cleaning lady entered every room.'

   b. В каждую комнату вшла [ее уборщицу].
   into every room entered its cleaning lady
   'Into every room entered its cleaning lady.'
iii. possessive-PP inversion

(30) a. *[Ee₁ sobaka] byla na rukax u [každoj devočki₁]
       its dog was on arms at every girl
       'Her dog was in every girl's arms.'

   b. ?U [každoj devočki₁] byla na rukax
       at every girl was in arms
       [ee₁ sobaka]
       her dog-NOM

       'Every girl had her dog in her arms.'

iv. dative experiencers

(31) a. ??[Ee₁ sobaka] nuzän [každoj devočke₁]
       her dog-NOM needs every girl-DAT
       'Her dog needs every girl.'

   b. [Každoj devočke₁] nuzän [ee₁ sobaka]
       every girl-DAT needs her dog-NOM
       'Every girl needs her dog.'

Two more things need to be said about Russian IP-Inversion, summarized in (32):

(32) a. The EPP is triggered by a strong [D] feature

   b. Russian IP-inversion is accompanied by V-movement to
       check a T feature

First, I assume, following Collins 1997, Miyagawa 2001 and
Lavine & Freidin 2001 that the relevant triggering feature is a
strong nominal ([+D]) feature on the head of IP, that the EPP is
independent of other checking relations (as shown by Lasnik
2001, and Lavine & Freidin 2001). Second, the inversion in
Russian is always accompanied by V raising to I, for which
there are independent tests, and which I assume to be triggered
by a finiteness feature, satisfied either by the raised verb (in

6The Franks/Yadroff (2001) approach to functional prepositions and binding
allows the PP to be attracted by this strong D feature as well and serve as
binders.
Inversion) or by the raised Nominative subject (in SVO) -- following Pesetsky & Torrego (2001). 7

4. The Syntax of Long-Distance Scrambling

Long-distance scrambling has A'-properties in a range of languages, as we saw in (3-8) for Russian. Examples from Saito 2001 are given in (33).

(33) Japanese (from Saito 2001)

a. *Otagai-no sensei-ga karera-o i hihansita.
   each other-Gen teacher-Nom they-Acc criticized
   *'Each other's teachers criticized them.'

b. ?[Karera-o i [otagai-no sensei]-ga t_i hihansita]].
   they-Acc each other's teacher-Nom criticized
   'They were criticized by each other's teachers.'

c. *Karera-o i [otagai-no sensei]-ga [cp[ip Tanaka-ga t_i.
   they-Acc each other's teachers Tanaka-Nom
   hihansita] to ] itta ]] (koto)
   criticized that said fact
   'Them, each other's teachers said that Tanaka criticized.'

The common view on the motivation for this kind of scrambling is that it is (always) discourse-related (Junghanns & Zybatow 1997, Zubizarreta 1998), and therefore semantically vacuous only with respect to Binding effects, whereas it is directly relevant for discourse interpretation. Discourse effects arguably also constitute an interpretive interface, as claimed in

7 The fact that V-raising appears not to occur in standard SVO transitives, demonstrated in Bailyn (1995), is highly reminiscent of the English I-->C effect in questions, which is central to the Pesetsky & Torrego approach. Apparently, on the IP domain, Russian has a similar distribution: V-movement unless the local Spec is filled with a Nominative element.

The verb raising provides the domain extension required for inversion not to be an economy violation (see also Kitahara 1997), and although that is not its motivation, it does explain why Generalized Inversion is unavailable for English -- where V-raising to I is barred for independent reasons. In Bailyn forthcoming a I extend the analogy to show a typology of languages that is quite promising.

Syntactically, it is well known that different kinds of Focus are related to movement in various languages (Kiss 1998); long-distance scrambling is thus claimed to serve a similar function -- unambiguously associating the moved element with a particular part of the Theme-Rheme division. This can be formalized in various ways, including the tree-splitting approach of Partee (1991) and Diesing (1991), the P(rosodic)-movement approach of Zubizarreta (1998) or the Focus movement approach of Miyagawa (1997) and so on. That it is movement is clear from the constraints observed, which are parallel to WH-movement, hence its usual description as A'-movement.

Let us assume a syntactic version of these approaches -- namely that Russian long-distance scrambling is indeed discourse-driven, and the constituent in question is attracted by a high discourse-related Operator type feature, as is argued for in Kitahara (1997) and Kawamura (2001) for Japanese.

We have reached a point where the two kinds of scrambling are associated with distinct syntactic motivations (the EPP vs. some kind of Operator movement) and different attracting heads (a D-feature of I in the former case and an Operator-like feature of a high functional category or categories in the latter case). If we now bring in the third idea -- a derivational approach to binding and interpretation, we can eliminate reference to A or A'-movement and remove the need for reconstruction.

4. The Derivational Approach

Saito (2001), Kitahara (1997, 2002) and Epstein et al (1998), propose that interpretations are built up derivationally. This involves certain assumptions, stated in (34):

(34) Some assumptions under the derivational approach:

i. Assume Copy Theory of Movement
ii. Assume XP arguments have (at least) these features:

\[
\begin{align*}
[P] & \quad \text{PF-relevant} \\
[D], [OP] & \quad \text{LF-relevant}
\end{align*}
\]
iii. Assume WH-movement and Long-Distance Scrambling are driven by [OP] feature

iv. Assume Inversion (A-scrambling) is driven by D-feature

Suppose, further, that we invoke a strong version of Move F (Chomsky 1995, ch.4), whereby what moves is a feature [F] that must be associated with a higher uninterpretable version of F, and other material is carried along only if needed for convergence. Originally 'other material' was thought of as only referring to phonetic material. Saito (2001) suggests extending the 'move only what is needed approach' to the feature bundle itself. This is the core of the the "feature splitting" approach, although in Saito 2001 it is better termed 'feature retention':

(35) Derivational approach to Scrambling and Binding (Saito 2001)

Let us assume that deletion applies to the features P, O and D so that each of them is retained only at one position. The P-feature must be retained at the head of the chain. For the rest, suppose further that deletion is constrained by selection ..., and that a feature can only appear in a position where it is selected. (Saito 2001: 11)

Thus in WH-movement, the Q feature must always move, and the PF features must also move in English, driven by whatever strength of the C head forces overt movement, but the D feature need not, and therefore, by Economy, does not move. Thus the referential portion of the relevant lexical item is interpreted in the lower position, deriving immediately the reconstruction effect for WH-movement with respect to binding. Notice that this entails an "anywhere" interpretation of Binding Principle A whereby Principle A is simply satisfied if the anaphor is bound by a c-commanding coindexed [D] feature anywhere in the derivation:

(36) Derivational binding theory:

**Principle A:** Satisfied if an anaphor is bound by a c-commanding coindexed [+D] antecedent *at any time in the derivation*

**Principle C:** Violated if an R-expression is bound by a c-commanding [+D] antecedent *at any time in the derivation*

The final version I propose is summarized in (37):
NPs are interpreted and enter into binding relations at any point in the derivation where their D features are active.

Thus in a derivation where movement is triggered by a D feature, the interpretive component interprets the nominal at the highest point where the D feature is active. So EPP-driven movement can satisfy Principle A after movement, since the [D] feature raises (being the trigger for the EPP) whereas Operator type movement, such as WH-movement or discourse-driven movement does not feed new binding relations, since the D feature is not involved, and by Economy, therefore, does not raise. This also allows us to derive differences between reconstruction for scope, related to operator features, and binding, related to referential features, which can resolve a long standing tension between the reconstruction effects for these two distinct but supposedly LF properties. Examples are given in (38a), for an EPP case, and (38b) for a discourse-driven case.

(37) Derivational approach to Scrambling and Binding (final version)

Derivational schema of scrambling behavior:
([D] feature crucial for binding relations)

a. EPP-driven scrambling: (local, A)

\[
{[IP}XPi{[D],[P]}{[I}\ldots{t_i}{[D],[P]}\ldots{]}]
\]

b. Discourse-driven Scrambling: (long, A')

\[
{[IP}XPi{[P],[OP]}{[IP}\ldots{t_i}{[D],[P],[OP]}\ldots{]}]
\]

With respect to Principle C, we can maintain a derivational account there too, assuming that if an R-expression is bound by a c-commanding coreferent D-feature at the end of the derivation of the relevant phase it causes a violation. Thus EPP-movement can cause such a violation, as we have seen, but WH-movement or discourse-driven movement cannot, as observed. In the former case the D feature raises to check the EPP, whereas in the latter cases, the D feature is not involved and therefore never is in a c-commanding position in the derivation with respect to the R-expression, and thus never causes a violation.

If this is on the right track, we can eliminate the need for a poorly understood process of reconstruction, a welcome result (and necessary in a purely derivational theory), and we need not treat A and A'-movement (or positions) as primitives of the
computational system -- rather the effects that distinguish them fall out from feature splitting, the copy theory of movement and the derivational approach to interpretations. Thus the EPP and discourse-driven analyses of the two kinds of scrambling are independently support, as is the derivational approach in general.

5. Conclusions

Conclusion to be drawn from this article are as follows: First, the Extended Projection Principle is a (universal) primitive requiring overtness in the IP zone. Inversion is movement to satisfy the EPP and A-scrambling is non-canonical satisfaction of the EPP. Second, the EPP is not a requirement about subjects. The apparent requirement that it be met by (Nominative) subjects in English is a side effect of the interaction of deeper principles. Third, the [D] feature of the EPP accounts for the A-properties of Inversion, by providing the interpreted position in the chain, from which binding occurs. Fourth, A'-scrambling is discourse-driven and therefore does not involve the movement of D features at all. Therefore reconstruction properties of A' scrambling fall out from the derivational approach: the D feature relevant for binding is inactive at the high adjunction site of A'-scrambling because it is not active there.

References


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