A (Purely) Derivational Approach to Russian Scrambling*

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1. Introduction

Progrsss in Linguistics is often made by applying results from one area to a different domain of inquiry. In this articles, 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*

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

    b.   **sono**   **hon-o**   Mary-ga   **t**   yonda   (koto)
           that   book-Acc   Mary-Nom   read   (fact)
           '(the fact that) Mary read that book.'

(2) *Russian*

    a. Novye   znakomye   Ivana   predstavili
        new   friends   of Ivan   introduced

             Mariju   predsedatelju.
             Maria-Acc   chairman-Dat

     'Ivan's new friends introduced Maria to the Chairman.'

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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.[1] 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 Epstinian 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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[1]I 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)   <u>No binding effects</u> ("radical" or "total" reconstruction)

    a. Ja   xoču,   čtoby studenty$_i$ pročitali
        I   want   that   students   read

        [knigi   drug o   druge$_i$]
        books-Acc   about each   other

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

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[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-adjoined 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.

b. [Knigi   drug o druge$_i$]$_k$ ja xoču,   čtoby
    books   about each other   I   want   that

      studenty$_i$ pročitali   t$_k$
      students   read

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

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$_i$ dog]-NOM loves

         každuju   devočku
         [every   girl]$_i$-ACC   t$_i$

      *'I want her dog to love every girl.'

    b. *Každuju   devočku   ja xoču, čtoby
       [every   girl]$_i$-ACC   I   want that

         ee   sobaka   poljubila
         [its$_i$ dog]-NOM   loves t$_i$

      *'I want her dog to love every girl.'

Finally, such constructions parallel WH-movement with respect to constraints like the coordinate structure constraint, subjacency 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$_i$ hat jemand   [t$_i$ und Maria] angemeldet
      whom-Acc has somebody   and Maria registered
     *'Who did somebody register and Maria?'

    b. * weil   **Hans$_i$**   jemand
      because   Hans   somebody

       [t$_i$ 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.   *__Borisa__$_i$ 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 constitues 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.[4] 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-adjoined 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

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[4]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.

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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[5]One 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")

    Amatá   y-á-ra-nyôye   abâna.   O-V-S
    milk   3s-PST-drink:PERF   children
    'CHILDREN drank milk'

(12) (Russian) Lavine/Freidin (2001)--EPP acct of Adversity Impersonals

   Soldata   ranilo   pulej
   soldier-Acc   wounded   bullet-Instr
   '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).

<u>Locative Inversion</u> (LI): (Babyonyshev (1996))

(13) a. V klasse   pojavilsja   noven'kij   PP-V-S
      in class   appeared   new (one)
      'A new boy appeared in class.'

    b. Na   posadočnuju polosu   prizemlilsja   samolet.
      onto   --------runway----------   landed   airplane
      'An airplane landed on the runway.'

<u>PP Inversion</u>

(14) a. U   menja   est'   vopros.   PP-V-S
      at   me   is   question-Nom
      'I have a question.'

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

Dative experiencers

(15) a. Saše   nravjatsja   deti
         Sasha-Dat   likes-pl   children-Nom
         'Sasha likes children.'

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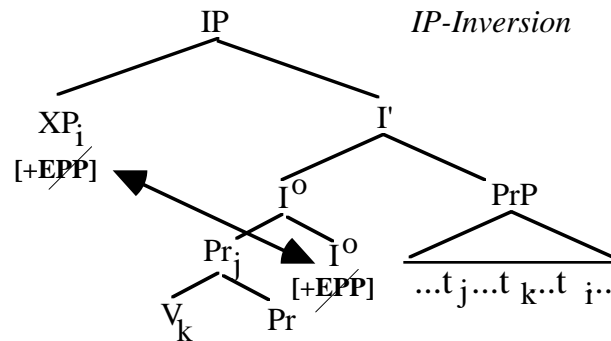   'The soldiers can see the road.'

"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)   Étu   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):

    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 reporoduced in (19b) by use of the English passive, a typical A-movement process).

i. <u>OVS</u> (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$_i$ teachers criticized them$_i$.'

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

ii. <u>dative experiencers</u>

(20) a. ???Svoja$_i$ rabota   nravitsja   Maše$_i$
          [self's   work]-Nom   pleases   Masha-Dat
          'Masha likes her work.'

    b. Maše$_i$ nravitsja   svoja$_i$ rabota
        Masha-Dat   pleases   [self's work]-Nom
        'Masha likes her work.'

iii. <u>possessive-PP inversion</u>

(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. <u>adversity impersonals</u> (22a-b from Lavine & Freidin (2001))

(22)   a. *Puljami   prinadlezaščimi   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-INSTR

    prinadlezaščimi   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. <u>OVS</u>

(23) a.   [Novye   znakomye Ivana$_i$]
      new   friends   of Ivan

      predstavili   ego$_i$ predsedatelju.
      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

      predsedatelju
      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. <u>Locative PP inversion</u>

(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.'

b. *U nego$_i$ doma   byli [znakomye   Ivana$_i$].
    at him   at home   were friends-Nom   of Ivan
    'At his$_i$ house were friends of Ivan's$_i$.'

   iii. <u>Possessive-PP inversion</u>

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

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

   iv. <u>Dative experiencers</u>

(27) a. [Znakomye   Ivana$_i$]   nravjatsja   emu$_i$.
        friends-Nom of Ivana   like   him-Dat
        'Friends of Ivan$_i$ please him$_i$.'
           (cf *'He likes friends of Ivan.')

   b. * Emu$_i$ nravjatsja   [znakomye   Ivana$_i$].
       he-Dat like-pl   friends-Nom   of Ivan
       *'He$_i$ is liked by friends of Ivan$_i$.'

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

(28) a. *Ee$_i$ sobaka   ljubit každuju   devočku$_i$.
        [her   dog]-NOM loves [every   girl]-ACC
         'Her$_i$ dog loves every girl$_i$.'

   b. [Každuju devočku]$_k$ ljubit   ee   sobaka   t$_k$.
    [every   girl]$_i$-ACC   loves   [her$_i$ dog]-NOM
    'Every girl is loved by her dog.'

   ii. <u>locative inversion</u>

(29) a. *[Ee uborščica]   vošla   [v   každuju komnatu].
         its cleaning lady   entered into every   room
         'Its cleaning lady entered every room.'

   b. V každuju   komnatu vošla   [ee   uborščica].
    into every   room   entered its   cleaning lady
    'Into every room entered its cleaning lady.'

iii. <u>possessive-PP inversion</u>

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

   b. ?U   [každoj devočki]$_i$ byla na   rukax
      at   every   girl   was in   arms

      [ee$_i$ sobaka]
      her   dog-NOM
      'Every girl had her dog in her arms.'

iv. <u>dative experiencers</u>

(31) a. ??[Ee   sobaka]   nužna [každoj   devočke]$_i$
         her   dog-NOM needs every   girl-DAT
         'Her$_i$ dog is needed by every girl$_i$.'

   b. [Každoj   devočke]$_i$ nužna [ee   sobaka]
      every   girl-DAT   needs her   dog-NOM
      'Every girl$_i$ needs her$_i$ 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).[6] 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

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[6]The 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$_i$'s teachers criticized them$_i$'

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

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[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.

Bailyn 1995. Similar conclusions were reached in Jackendoff (1973), Rochemont (1986), Vallduví (1992), Lambrecht (1994), Zubizarreta (1998), Erteschik-Shir (1997) and a host of functional and Prague school approaches all proposing an independent level or interface for expression of Topic/Comment relations and their disambiguation.

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:

       [P]   (PF-relevant)

       [D], [OP]   (LF-relevant)

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) <u>Derivational approach to Scrambling and Binding</u> (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*:
    (Grewendorf & Sabel 1998, Epstein et al 1998, Saito 2001, & others)

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

<u>Principle C</u>: 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):

(37) <u>Derivational approach to Scrambling and Binding</u> (final version)

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.

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

   a. <u>EPP-driven scrambling</u>: (local, A)

$$[_{IP}\mathbf{XP_i}_{[\mathbf{D}],[P]} [_{I'}...\mathbf{t_i}_{[Đ],[P]} ...]]$$

   b. <u>Discourse-driven Scrambling</u>: (long, A')

$$[_{IP}\mathbf{XP_i}_{[P],[OP]} [_{IP}...\mathbf{t_i}_{[\mathbf{D}],[P],[ΘP]} ...]]$$

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 his 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 heerfore does not invove 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

Babby, Leonard H. (forthcoming) *Affix-driven syntax* Oxford.

Babyonyshev, Maria. 1996. *Structural conventions in syntax and processing:* Ph.D. Dissertation, MIT.

Bailyn, John Frederick. 1995. *A configurational approach to Russian 'free' word order.* Ph.D. Dissertation, Cornell.

Bailyn, John Frederick. 2001a. On Scrambling: A reply to Bošković & Takahashi. *Linguistic Inquiry* 32(4): 635-658.

Bailyn, John Frederick. 2001b. Inversion, dislocation and optionality in Russian. In Uwe Junghanns & Gerhilde Zybatow (eds) *Formale slavistik 3* University of Leipzig.

Bailyn, John Frederick. Forthcoming a. Generalized inversion. *Natural Language and Linguistic Theory.*

Bailyn, John Frederick. Forthcoming b. Does Russian scrambling exist? In *Word Order and Scrambling*, ed. Simin Karimi. Oxford: Blackwell.

Belleti, Adriana & Luigi Rizzi. 1988. Psych-verbs and theta-theory. *Natural Language and Linguistic Theory*: 291-352.

Bošković, Željko & Daiko Takahashi. 1998. Scrambling and Last Resort. *Linguistic Inquiry* 29: 347-366.

Chomsky, Noam. 1995. *The Minimalist program*. Cambridge, MA: MIT Press.

Collins, Chris. 1997. *Local economy*. Cambridge, MA: MIT Press.

Diesing, Molly. 1991. *Indefinites*. Cambridge, MA: MIT Press.

Epstein, Samuel D. (et al) 1998. *A derivational approach to syntactic relations*. Oxford: Oxford University Press.

Erteschik-Shir, Nomi.   1997. *The dynamics of focus structure*. Cambridge: Cambridge University Press.

Franks, Steven and Michael Yadroff. 2002. The origin of prepositions. In *Current Issues in Formal Slavic Linguistics*, eds. Uwe Junghanns, Luka Szucsich and Gerhilde Zybatow. Frankfurt/Main: Peter Lang.

Grewendorf, Gunter. & Joachim Sabel 1999. Scrambling in German and Japanese: Adjunction versus multiple specifiers. *Natural Language and Linguistic Theory* 17: 1-65.

Huang, James.   1993.   Reconstruction and the VP internal subject hypothesis. *Linguistic Inquiry* 24: 103-138.

Jackendoff, Ray. 1973. *Semantic interpretation in generative grammar*. Cambridge, MA: MIT Press.

Junghanns, Uwe and Gerhilde Zybatow. 1997. Syntax and Information Structure of Russian Clauses. In *FASL 4*, pp. 289-319. Ann Arbor MI: Michigan Slavic Publications.

Kawamura, Tomoko. 2001. A feature-checking analysis of Japanese Scrambling. MA Thesis, Kanzan University.

Kidwai, A. 2000. *XP-adjunction in universal grammar: Scrambling and Binding in Hindi-Urdu.* Oxford: Oxford University Press.

É. Kiss, Katalin. 1998. Identificational Focus vs. Information Focus. *Language* 74: 2, 245-273.

Kitahara, Hisatsugu. 1997. *Elementary Operations and Optimal Derivations*. Cambridge, MA: MIT Press.

Kitahara, Hisatsugu. 2002. Scrambling, case, and interpretability. In *Derication and Explanation in the Minimalist Program*, ed. Samuel David Epstein and T. Daniel Seely, 167-183. Oxford: Blackwell Publishers.

Lambrecht, Knut. 1994. *Information structure and sentence form.* Cambridge, England: Cambridge University Press.

Lasnik, Howard. 2001. A note on the EPP. *Linguistic Inquiry* 32, 356-62.

Lavine, James & Robert Freidin. 2001. The subject of defective tense in Russian. *Journal of Slavic Linguistics*, 9: 1-2, 253-290.

Mahajan, Anoop. 1991. *The A/A' distinction and movement theory*. Ph.D. Dissertation, MIT, Cambridge, Mass.

Miyagawa, Shigeru. 1997. Against optional scrambling. *Linguistic Inquiry* 27:1, 1-26.

Miyagawa, Shigeru. 2001. EPP, scrambling, and wh-in-situ. In *Ken Hale: A Life in Language*, ed. Michael Kenstowicz, 293-338. Cambridge, MA: MIT Press.

Müller, Gereon & Wolfgang Sternefeld. 1993. Improper movement and unambiguous binding. *Linguistic Inquiry* 24: 3, 461-509.

Ndayiragije, Jamal. 1999. Checking economy. *Linguistic Inquiry* 30: 3, 399-444.

Partee, Barbara. 1991. Topic, focus and quantification. In *SALT 1*, eds. Adam Wyner and Stephen Moore, 159-187. Ithaca, NY: Cornell.

Pesetsky, David and Esther Torrego. 2001. T-->C: An account and its consequences. In *Ken Hale: A life in language*, ed. Michael Kenstowicz, 355-426. Cambridge, MA: MIT Press.

Preslar, Mark. 1988. The subject position in Russian impersonal sentences. *Linguistic Analysis* 28: 1-2, 33-66.

Rizzi, Luigi. 1997. The fine structure of the left periphery. In *The New Comparative Syntax*, ed. Liliane Haegemann. London: Longman.

Rochemont, Michael. 1986. *Focus in generative grammar*. Amsterdam: John Benjamins.

Saito, Mamoru. 1992. Long distance scrambling in Japanese. *Journal of East Asian Linguistics* 1, 69-118.

Saito, Mamoru. and Naoki Fukui. 1998. Order in phrase structure and movement. *Linguistic Inquiry* 29: 439-474.

Saito, Mamoru. 2001. A derivational approach to the interpretation of scrambling chains. ms Nanzan University.

Stjepanović, Sandra. 1999. Scrambling: Overt movement or base generation and LF movement? *Journal of Slavic Linguistics* 7:2, 305-24.

Vallduví, Enric. 1992. *The informational component*. New York: Garland.

Webelhuth, Gert. 1989. *Syntactic saturation phenomena and the modern Germanic languages*, Ph.D Dissertation, UMass, Amherst.

Zubizarreta, Maria-Luisa. 1998. *Focus, prosody, and word order*. Cambridge, MA: MIT Press.

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