LINEARIZATION ASYMMETRIES IN RUSSIAN LEFT BRANCH EXTRACTION

Keywords: syntax, linearization, scrambling, extraction, Russian

INTRODUCTION: While Russian word order is generally quite free, in the context of LBE (left branch extraction) from the nominal phrase, puzzling restrictions arise. We argue that these restrictions emerge from the interaction of the Cyclic Linearization (CL) theory of spellout (Fox & Pesetsky 2005a/b, Ko 2014, a.o.), and the Agree-driven nature of movement (Chomsky 2000, 2001, Ko 2014, van Urk 2015).

THE RESTRICTIONS: Russian permits LBE of a wide variety of elements (demonstratives, quantifiers, numerals, adjectives, possessors). Usually, LBE from subjects (1a) and objects (1b) are both possible:

(1) a. \mathbf{Eta}_k včera $[t_k \mathbf{devočka}]$ pogladila kota b. \mathbf{Etogo}_k devočka pogladila $[t_k \mathbf{kota}]$ **this** yesterday **girl** stroked cat **this** girl stroked **cat** 'This girl stroked the cat yesterday.' 'The girl stroked this cat.'

Russian permits scrambling of objects over subjects (2a). Since LBE from subjects is typically allowed (1a), we would expect it to be able to occur together with object scrambling. However, this is not the case—as (2b) shows, when the object scrambles over the subject, LBE from the subject cannot also occur:

(2) a. **Kota**_k eta devočka pogladila t_k b. ***Eta**_j kota_k [t_j **devočka**] pogladila t_k cat this girl stroked 'This girl stroked the cat.'

This finding is true for LBE of demonstratives, quantifiers, numbers, and some possessors. However, LBE of adjectives and some other possessors can form word orders like (2b), and we address these shortly.

Central puzzle: Why should scrambling the object over the subject prevent LBE from the subject?

Solution preview: We argue that if vP is a phase in Russian, as has been argued for other languages, CL and the Agree-driven movement theory predict constraints on extraction from subjects (specifically external arguments) that rule out word orders like (2b). Further, these concepts correctly predict that other elements originating in vP (adverbs, datives, PPs) behave just like objects in their interaction with LBE from subjects. **THEORY**: Here we summarize the two concepts that derive the desired restrictions.

- **#1 Cyclic Linearization:** CL posits that the order-preserving nature of spellout, which linearizes entire phasal phrases (not just their complement), requires the relative linear position of elements within a given phase to be preserved in the next phase as well. Otherwise, the linear order established in the earlier phase would contradict that of the later one, resulting in an unpronounceable derivation, which crashes at PF.
- **#2 Agree-driven movement:** Many works argue that movement to the specifier of a head requires an Agree relation with a probing feature on that head, and the goal to be moved (Chomsky 1995, 2001, Ko 2007, 2014, van Urk 2015). Ko (2007, 2014) points out that if a probing head can only Agree with goals in its c-command domain, the fact that heads don't c-command their specifiers means that a head cannot probe and move something from one of its specifiers to another. Ko argues that this theory interacts with CL to predict various scrambling asymmetries in Japanese/Korean, and we argue that the same holds for Russian. **SOLVING THE BASIC RESTRICTION:** Chomsky (2000, 2001, 2008, a.o.) argues that vP and CP are phases, which are the constituents subject to spellout. If vP is typically a phase in Russian just as has been claimed for other languages, the two concepts introduced above correctly ban forming word orders like (2b).

To see why, consider that derivations like (2b) would involve scrambling the object over the subject, followed by LBE from the subject, as schematized in (3) below:

(3) [$XP O [Subj t NP] v-V t_O]$ (Object scrambling over subject followed by LBE from subject)

Under CL, generating word orders like (2b) requires these movements to occur within vP. If they don't, forming that word order at a later stage of the derivation will contradict the ordering established in vP, causing a crash at PF. First, it is necessary to ensure that the object precedes the subject and V. Movement of the object to the vP edge accomplishes this goal (4a). Second, the element being extracted from the subject must precede the scrambled object within vP. Moving that element from the subject, and into a higher specvP above the scrambled object, would accomplish this, but such movement is impossible—since v does not c-command the subject, it cannot probe into and move something out of the subject (4b).

(4) a. $\sqrt{[vP \ O \ [Subj \ XP \ NP] \ v-V \ t_O}]$ b. *[XP O $[Subj \ t \ NP] \ v-V \ t_O$] Since such extraction from subject can't occur within vP, the word order needed for (2b) cannot be generated.

Since such extraction from subject can't occur within vP, the word order needed for (2b) cannot be generated. Russian also allows inverted DP splits, where NP moves, stranding its modifiers. The above constraints correctly predict that object scrambling can't intervene between the parts of an inverted split subject either. **PREDICTIONS FOR OTHER VP-INTERNAL MATERIAL**: As expected, scrambling of other material within vP similarly blocks extraction from subjects, as we see below for a dative argument (5a) and vP-internal PP (5b). LBE from the subject must reach a position in vP above any material that has scrambled over the subject, but such movement is impossible, since v does not c-command the subject.

(5) a. *Etot_k drugu t_k student predstavil jejo b. *Pjat'_k v klass t_k mal'čikov prinesli pivo this friend.DAT student introduced her five in class boy brought beer 'This student introduced her to a friend.' 'Five boys brought beer into the classroom.' The same reasoning accurately predicts that a low (vP-level) adverb will interrupt LBE from subject. External or internal merge of an adverb into the vP edge will necessitate LBE from the subject to target a higher specifier of the same vP, above that adverb, but such movement is banned. The resulting ungrammaticality is shown in (6). This example also shows a high temporal adverb, which does not block LBE from subject.

This is expected, since an adverb that originates outside of vP doesn't effect the linearization in vP.

(6) **Každaja**_k [$\sqrt{\text{včera}}$ večerom] / *polnostju t_k **devočka** vyčistila jaščik **every** yesterday evening / completely **girl** cleaned drawer 'Every girl cleaned a drawer yesterday evening / *completely.'

LATE MERGE AND THE EXCEPTION OF ADJUNCTS: As mentioned, examples like (2b) can be formed by LBE of some elements: adjectives (for all speakers) as well as 1st/2nd person and lexical possessors (for some speakers). These can be extracted from subjects even when the object scrambles, as in (7):

(7) a. Naš/Vasin_j knigu_k t_j syn pročital t_k b. Vesjolaja_j tort_k t_j devočka jela t_k our/Vasja's book son read happy cake girl ate 'Our/Vasja's son read the book.'

Lebeaux (1988, a.o.) argues that adjuncts may be externally merged late, post-movement of DP. Adjectives are plausibly adjuncts. Lyutikova (2014) argues that pre-nominal possessors in Russian are adjuncts, and indeed, they bear adjective-like agreement morphology. (Though 3rd person pronominal possessors uniquely don't, and also cannot form strings like (7), perhaps due to not being typical adjuncts.) We posit that in (7), the subject covertly moves over the object to a vP-external position, and that the adjunct late merges to that high covert position of the subject. Thus such sentences have a grammatical non-extraction derivation. Since that movement of the subject over the object is covert and thus not linearized, CL is not violated.

HEAD MOVEMENT AND PHASE EXTENSION: The above examples all use SV word order, but Russian also permits VS orders. Interestingly, derivations like (2b) often become grammatical when V precedes the subject, as in (8). Here the scrambled object and V precede the subject NP, from which LBE succeeds:

(8) a. **Každaja/eta** $_j$ kota $_k$ pogladila t_j **devočka** t_k b. **Každaja/eta** $_j$ pogladila kota $_k$ t_j **devočka** t_k **every/this** cat stroked **girl** 'Every/this girl stroked the cat.'

Several works argue that if a phase head moves, it extends phasehood up to the head moved to (Den Dikken 2007, Gallego 2010, Alexiadou et al. 2014). Following such works, we argue that in sentences like (8), V moves to a head above vP, carrying v into a higher head, which thereby inherits the phasehood of v:

(9) $[_{XP[Phase]}$ X-v-V $[_{vP}$ SUBJ v-V $[_{VP}$ V ...]]] (Head movement enlarges the phase) \uparrow The constraints on LBE from subjects discussed above only hold when vP is a phase. In (9) above, V-v

The constraints on LBE from subjects discussed above only hold when vP is a phase. In (9) above, V-v movement to X causes XP to become the relevant phase, instead of vP. Within XP, word orders like (8) are derivable by scrambling the object to spec-XP or spec-vP, followed by X extracting something from the subject and into a spec-XP above the scrambled object. Since X c-commands the subject in its θ -position in vP, such extraction is permitted. Thus we argue that while Russian V typically raises no higher than v in the syntax, when it does move, the relevant phase is expanded, and the usual constraints on LBE are relaxed.