Frozen Scope and WCO: New Insights into the Structure of Russian Ditransitives

Svitlana Antonyuk-Yudina (Reed College, Stony Brook University)
John F. Bailyn (Stony Brook University)

As originally noted in Larson (1990), the Prepositional Construction (henceforth PC) and the Double Object Construction (DOC) in (1) exhibit the following scope asymmetry: the Prepositional Construction allows for scope ambiguity while the Double Object Construction is confined to the scope reading that reflects the surface c-command relations:

(1) a. The teacher assigned an exercise to every student (PC). (a > every), (every > a)
b. The teacher assigned a student every exercise (DOC). (a > every), ***(every > a)**

Following some of the same tests as used in Bruening (2001) we show that Russian exhibits the same scope asymmetry, whereby scope is frozen whenever the Dative object precedes the Accusative object in linear order (2):

(2) a. Učitel' dal kakuju-to knigu každomu studentu
Teacher$_{\text{NOM.MSC}}$ gave [some book]$_{\text{ACC.FEM}}$ [every student]$_{\text{DAT.MSC.}}$
'The teacher gave some book to every student' (some > every), (every > some)
b. Učitel' dal kakomu-to studentu každuju knigu
Teacher$_{\text{NOM.MSC}}$ gave [some student]$_{\text{DAT.MSC.}}$ [every book]$_{\text{ACC.FEM.}}$
'The teacher gave some student every book' (some > every), ***(every > some)**

As is well known, a pair-list reading arises when a QP moves via QR to a position where it can take scope over a wh-word (May 1985). Bruening (2001) argues that if QP-wh-interaction is indeed the same as QP-QP interaction (as it is often assumed to be), the Pair-List reading should be absent in exactly the same contexts where Scope Freezing obtains, that is, in the DOC and the *with*-variant of the Spray-Load Construction. Applied to Russian, this test yields a strikingly parallel result:

(3) a. Kakuju knigu učitel' dal každomu rebenku?
[Which book]$_{\text{ACC}}$ teacher gave [every child]$_{\text{DAT}}$
'Which book did the teacher give to every child?' **✓Pair-List OK**
b. Kakomu rebenku učitel' dal každuju knigu?
[Which child]$_{\text{DAT}}$ teacher gave [every book]$_{\text{ACC}}$
'Which child did the teacher give every book to?' ***Pair-List**

It is also well known that if a QP is capable of taking scope over another QP within a sentence, it should be able to bind a variable contained within the QP that is being scoped over, since quantifiers cannot bind variables that do not fall within their scope (Higginbotham 1980, May 1985). As shown in Bruening (2001) for English, if the Dative object is able to take scope over the Accusative object and if the reverse is not true, then only the Dative object should be able to bind a variable within the Accusative object, but not the other way around. The contrast in (4) below supports this conclusion:

(4) a. ?Učitel'nitsa dala kakuju-to knigu, kotoruju on$_i$ poprosil,
Teacher$_{NOM.FEM}$ gave some book$_{\mathbf{ACC.FEM}}$ that he asked
každomu rebenku$_i$
every child$_{\mathbf{DAT.MSC.}}$
'The teacher gave some book that he$_i$ asked for to every child$_i$'
(every > some), ***(some > every)**

b.*Učitel' dal kakomu-to rebenku, kotoryj ejo$_i$ poprosil,
Teacher$_{NOM.MSC.}$ gave some child$_{\mathbf{DAT.MSC.}}$ that her asked
každuju knigu$_i$
every book$_{\mathbf{ACC.FEM.}}$
'The teacher gave some child that asked for it$_i$ every book$_i$'

The sentence in (4a) allows for the bound variable interpretation according to which the teacher gave each child a book that child had asked for, that is, the books vary with the children. Since the Accusative direct object that contains the variable bound by the Dative object is structurally higher than the Dative object and thus not c-commanded by it in surface syntax, for this reading to obtain the Dative object has to be able to QR to a c-commanding position above the Accusative object in order to bind the pronoun contained inside it. The DAT > ACC counterpart in (4b) is absolutely impossible on the bound variable interpretation; it cannot mean that the teacher gave each child a book that the child had asked for. Thus, the bound variable test also indicates the inability of the Accusative Object to scope over the Dative object at LF in the DAT > ACC construction.

We further argue that accepting ACC > DAT as the underlying order for Russian, independently necessary to account for such facts as the ability of the Accusative, but not the Dative, to control PRO subjects in Instrumental small clauses (Bailyn 1995, 2009) and assuming sentences such as (2b) are derived via Local Scrambling, a striking parallelism emerges between the DAT > ACC ditransitives and sentences derived via Local and Long-Distance Scrambling of a QP overtly above another QP (5b, 6b), which also result in surface scope freezing (Antonyuk-Yudina 2009):

(5) a. Kakoj-to čelovek uslyšal každuju šutku
[Some person]$_{NOM}$ heard [every joke]$_{ACC}$
'Some person heard every joke' (some > every), (every > some)
b. [Kakuju-to šutku]$_i$ každyj čelovek uslyšal **t$_i$**
[Some joke]$_{ACC}$ [every person]$_{NOM}$ heard
'Some joke, every person heard' (some > every), ***(every > some)**

(6) a. *Kto-to xočet čtoby **on$_i$** uvolil [každogo sovetnika **Buša**]$_i$
Someone wants that he fired every adviser Bush$_{GEN}$
'Someone wants him$_i$ to fire every adviser of Bush$_i$'
b. [Každogo sovetnika **Buša**]$_i$ kto-to xočet čtoby **on$_i$** uvolil **t$_i$**
Every adviser Bush$_{GEN}$ someone wants that he fired
'Every adviser of Bushi, somebody wants himi to fire'
(every > someone > want), ***(someone > want > every)**

Adopting DAT > ACC underlying order (Dyakonova 2007 i.a.) misses the parallelism between (2) and (5-6) where overt Scrambling of a QP above another QP fixes scope. We propose that the order in (2b) derives from the Dative object undergoing local A Scrambling to a position about the Accusative object, a conclusion that is supported by the well-known binding facts (Bailyn 1995, 2009). Unlike accounts that posit the higher base-generated position of the Dative object, the ACC > DAT view then, predicts such parallelism between (2) and (5-6) and thus receives strong support from the above scope data. Further supporting evidence for the ACC > DAT structure comes from WCO, discussed in Bailyn (2009), given in (7):

(7) a. Kogo$_i$ ty xočeš' čtoby Maša predstavila [VP $__i$ [ego$_i$ novym sosedjam]] ?
Who$_{ACC}$ you want that Masha introduce [his new neighbors]$_{DAT}$
'Who do you want Masha to introduce to his new neighbors?'

b. ??/*Komu$_i$ ty xočeš' čtoby Maša predstavila [VP [ego$_i$ novyx sosedej] $___i$] ?
Who$_{DAT}$ you want that Masha introduce [his new neighbors]$_{ACC}$
'Who do you want Masha to introduce to his new neighbors?'

The contrast between the two sentences in (7) is accounted for as follows: in (7a) the Accusative object wh-moves out of the VP without crossing the lower Dative object due to originating higher up in the tree; in (7b) the Dative-marked object has to cross the Accusative object that contains a coreferenced pronoun, hence the WCO violation. If the parallelism between (2b) on the one hand and cases such as (5b-6b) on the other is accepted, the otherwise mysterious scope freezing in (2b) then reduces to the question of why scrambling a QP over another QP should freeze scope in Russian.

Since QR in Russian obeys Fox's (2000) Scope Economy Principle (Antonyuk-Yudina 2009), on the idea that QR and Scrambling are covert and overt realizations of the same movement (Johnson and Tomioka 1997), Scrambling may be expected to obey Scope Economy as well. We argue that it is indeed Scope Economy that prohibits reconstruction of the Scrambled QP in (2b) since this movement has an effect on interpretation (that is, it disambiguates the sentence that was previously ambiguous) that would be undone if reconstruction took place. That there is no 'undoing' of scrambling (Saito 1989) which otherwise is obligatory with both Short (8) and Long-Distance Scrambling (9) further supports the proposed account:

(8) *[Každuju neudačnuju šutku o **Mašej**]$_k$ **ona**$_j$ vosprinimala **t**$_k$ očen' boleznenno
Every lame joke about Maša she perceived very painfully
'Every lame joke about herself Maša perceived with much anguish'

(9) *[**Mašinu**$_j$ babušku]$_k$ ja xoču čtoby **ona**$_j$ vstretila **t**$_k$
Masha$_{POSS}$ grandmother I want that she met
'Masha's grandmother, I want her to meet'

In (8) and (9) we see that the scrambled R-expression and the coindexed pronoun have to be understood as disjoint in reference, suggesting that reconstruction necessarily takes place. This contrasts with examples such as (5b) and (6b), where what scrambles is one Quantifier Phrase above another one, which apparently fixes scope. The observation that

overt movement of one Quantifier Phrase across another one freezes scope is not entirely new, and seems to be supported by a variety of English data, discussed in the literature. Thus, a sentence such as (10a), which is ambiguous between the surface and the inverse scope interpretation, looses its ambiguity in favor of surface scope when the lower object QP is moved, presumably via Topicalization, to a position above the subject QP (Heim and Kratzer 1998). Chomsky, as early as in (1957), has similarly observed that the sentence in (11b), unlike (11a), appears to loose the inverse scope interpretation in favor of the interpretation consistent with the surface scope relations. Again, what derives this surface scope freezing effect is the overt displacement of a QP across the surface position of the higher QP.

(10) a. Almost everybody answered at least one question. (Heim and Kratzer (1998))
√ (almost everybody > at least one), √ (at least one > almost everybody)
b. At least one question, almost everybody answered.
√ (at least one > almost everybody), ***(almost everybody > at least one)**

(11) a. Everyone in this room knows at least two languages. (Chomsky 1957)
(everyone > two), (two > everyone)
b. At least two languages are known by everyone in this room
(two > everyone), **??(everyone > two)**

The scope freezing principle, proposed here, could also explain the mysterious disappearance of scope ambiguity in Heavy NP Shift sentences such as (12b), an observation that is due to Johnson (2001).

(12) a. Hermione gave a wand to every witch (a > every), (every > a)
b. Hermione gave to a witch every wand (a > every), ***(every > a)**
(original data from Johnson 2001)

On the account of scope freezing proposed here, according to which it is overt movement of the lower QP across the surface position of the higher one that freezes scope, the scope freezing in (12b) is best explained by a leftward movement analysis along the lines of Larson (1988) on which the verb and the Dative object raise past the higher base-generated position of the Accusative object. Supporting evidence for the analysis comes from the well-known ban on extraction from the indirect object via wh-movement, which implicates prior movement of the indirect object:

(26) a. Who did you give the books written by Chomsky to _?
b. *Who did you give to _ the books written by Chomsky?

Thus, if the account proposed here is on the right track, we derive a unified explanation for a wide range of disparate constructions in two unrelated languages that all exhibit surface scope freezing. Our account could thus serve as a viable alternative to the Superiority account of scope freezing in the Double Object Construction that is due to Bruening (2001).