Glossa a journal of general linguistics

Antonyuk, Svitlana. 2019. Quantifier Scope in Russian.
Glossa: a journal of general linguistics 4(1): 54. 1–27.
DOI: https://doi.org/10.5334/gjgl.562

RESEARCH

Quantifier Scope in Russian

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This paper documents certain quantifier scope ambiguities in Russian and argues that these are derived by means of a covert syntactic movement operation, Quantifier Raising (QR). By doing so, it argues against the popular "frozen scope" view of Russian (Ionin 2003) by showing that optional, non-local QR past *v*P level must be available in the language in exactly the contexts where it is available in English. Syntactic evidence for the parallelism comes from Inverse Linking, Antecedent Contained Deletion and other contexts that have been argued to point to the existence of QR in English. Additionally, evidence for the availability of subject Reconstruction for scope in Russian (contra Ionin 2003) strongly suggests that the mechanism deriving ambiguity in basic SVO sentences in Russian must involve subject Reconstruction plus object QR to *v*P, exactly as has been argued to be necessary for English in Johnson (2000; 2001). The conclusion that Russian possesses QR with the same properties known from English suggests that the availability of QR in certain languages or certain constructions should not be tied to the unavailability of Scrambling since Russian also exhibits Scrambling. This conclusion thus carries important implications for other languages still currently taken to be similarly scope frozen due to the availability of Scrambling.

Keywords: Russian; Quantifier Raising; non-local QR; Scrambling; ACD; scope rigidity

1 Introduction

The present paper provides an in-depth investigation of empirical facts from Russian in the domain of quantification, all of which point to the conclusion that Russian is a language that exhibits the same constraints on inverse scope as does English, a language that is much better studied and consequently much better understood in this respect.[1] It is shown here that the scope flexibility of English can be replicated for Russian even though Russian is a Scrambling language, that is, a language that allows flexibility of word order. This is a theoretically significant result, given that the availability of Scrambling or free word order permutations in a language has long been taken to indicate that such languages must express quantifier scope relations overtly. This position seems to have been influenced by the prominent idea originally proposed in Pesetsky (1987), that there are "languages that wear their LFs on their sleeves" (Pesetsky 1987: 117). Pesetsky advanced this idea in a discussion of Polish wh-movement, but it was quickly extended to other languages and is now most often used to describe Hungarian, which is known as a language that disambiguates its LF relations through overt movement (see

[1] The empirical data presented in this paper have been collected over several years from upward of 40 native speakers' responses and feedback from a number of colleagues who are native speakers of Russian. Naive native speakers have been presented test sentences in disambiguating contexts, favoring either surface or inverse scope interpretation.

Kiss 1991; Szabolcsi 1997 and Csirmaz & Szabolcsi 2012 for a detailed discussion of Hungarian data).

Here, I expand significantly on the early findings of Ionin (2003). Ionin argued, in the spirit of the above theoretical stance, adopting a version of Pesetsky's (1989) *Earliness Principle*, that due to wide possibilities for overt displacement, Russian allows limited QR, with only short, interpretability-driven QR to a *v*P-adjoined position available in the language, thus arguing for an overall "surface-scope-only" view of Russian. Ionin's ideas were also strongly influenced by Beck's (1996) observations on the interaction of German word order and scope, who states: "German is a language that has scrambling and, accordingly, a relatively free word order. It seems that because scope order can be made clear at S-Structure, it has to be, so S-structural c-command mostly reflects semantic scope. Movement at LF thus has to be severely restricted" (Beck 1996: 44). The results here show that this connection is not necessary. By studying a much broader range of examples and syntactic constructions, I argue that in addition to local, interpretability-driven QR Russian must also allow non-local QR, that is, optional QR past little *v*P level. Furthermore, I show that even with local *v*P-level QR Russian should allow scope ambiguity in basic SVO sentences as Russian in fact allows subject Reconstruction (contra Ionin 2003), which together with object *v*P-level QR derives the ambiguity of most cases that have been incorrectly claimed to be scopally unambiguous.

The general idea that availability of overt movement restricts covert movement in Russian is attractive in attempting to tie unavailability of inverse scope in a language to independent properties that set it apart from uncontroversial scope fluid languages, such as English. To demonstrate the issue with data, consider the following examples from German, with its general lack of QP scope ambiguities in underived word orders (1a, 2a) traditionally being attributed to the availability of overt Scrambling in the language, as shown in (1b, 2b) (see Frey 1993; Pafel 2005):[2]

(1) *German* (Frey 1993)

a. DASS mindestens ein Student fast jeden Roman gelesen hat.
that at least one student.NOM almost every novel.ACC read has
'that at least one student read has read almost every novel.'
(1 > ∀), *(∀ > 1)

b. DASS fast jeden Roman$_i$ mindestens ein Student t$_i$ gelesen hat.
that almost every novel.ACC at least one student.NOM read has
'that almost every novel, at least one student has read.'
(∀ > 1), (1 > ∀)

[2] It is important to note that prosody plays an important part when it comes to scope judgments in German. Thus, the above interpretations are argued by Frey to result under verum focus prosody (that is, when everything but the COMP is destressed). As noted in Fanselow & Zimmermann (2016), Frey's views of scope have been taken for granted in the literature on German, often ignoring the fact that the scope claims reported were made specifically with regard to sentences with verum focus prosody. Section 4 discusses additional examples where German allows ambiguity not predicted by Frey (1993) and accounts such as Beck (1996). Furthermore, it is a well-known fact that altering the prosody to the so-called "hat contour" (Krifka 1998) allows for scope inversion in German. I should therefore stress that prosody can definitely affect scope interpretations in Russian as well, including creating an inverse scope bias for the contrastively focused (lower) QP in certain constructions (see Antonyuk and Larson 2016; in prep.; contra Neeleman and Titov 2009). For the purposes of this paper, however, I assume neutral prosody throughout, with the rightmost content word in the sentence getting the strongest falling pitch accent and, importantly, without prosodic breaks between the two QPs or pitch accents on quantificational determiners which can lead to surface scope bias (see Antonyuk-Yudina 2011 on how prosody affects scope interpretations in such cases).

(2) a. Mindestens ein Gast hat jedes Buch gelesen.
at least one guest.NOM has every book.ACC read
(NOM > > ACC)
(1 > ∀), *(∀ > 1)

b. Mindestens ein Buch hat jeder zur Party mitgebracht.
at least one book.ACC has everyone.NOM to-the party brought
(ACC > > NOM)
(1 > ∀), (∀ > 1)

This idea features prominently in Beck (1996) and, more recently, in Bobaljik & Wurmbrand (2012) (henceforth B&W), a cross-linguistic study of quantifier scope ambiguity and scope freezing that attempts to explain a broad range of syntactic phenomena in languages such as English, Japanese, German and Dutch by connecting them to their overt word order permutation possibilities. Although B&W do not discuss Russian, their account, which also ties overt word order permutability in a language (i.e., Scrambling) to constructional frozen scope, indeed seems to predict that a Scrambling language like Russian should exhibit frozen surface scope in contexts where Scrambling is allowed. Thus, basic SVO sentences, which are the main focus of this article, are predicted to show surface scope interpretations *only*, given that such sentences always have grammatical scrambled counterparts (Bailyn 1995; 2012 i.a.). As I will show in the following sections, while Ionin (2003) is correct about the availability of local QR in Russian, her broader assessment of Russian as a scope rigid language is based on incomplete data. Though Ionin's general insight about the lack of syntactic Reconstruction for scope in Russian is correct (as indeed it is, in particular, in those cases where Reconstruction of a QP scrambled across a higher QP is prohibited, as shown in Antonyuk-Yudina (2009)), the actual picture is somewhat more complex. Thus, contra Ionin (2003), as will be shown later in the paper, subject Reconstruction is possible (indeed, arguably necessary in the same contexts it is in English). Consideration of a wider range of examples across a number of diagnostic constructions shows that with respect to scope, Russian actually behaves comparably to English, an uncontroversial scope-fluid language. These observations place Russian in the "scope fluid" language group and provide evidence against proposals attempting to posit a straightforward relation between availability of Scrambling in a language and scope rigidity.

I discuss scope inversion in transitive constructions in section 2.1, the Inverse Linking Construction in 2.2 and Antecedent Contained Deletion in 2.3. Section 2.4 discusses syntactic constraints on scope inversion. In section 3 I consider the exact mechanism by which scope ambiguity is achieved by considering additional data from English and Russian and conclude that in this respect Russian again shows full parallelism to English, with both languages sometimes exhibiting scope ambiguity which is arguably due to short QR *and* subject Reconstruction rather than due to long QR (which, as shown in section 2, is nevertheless also employed in certain contexts). Section 4 provides a discussion of the data examined in this paper and the interesting theoretical questions that they raise as well as my tentative answer to the question of the nature of the relation between Scrambling languages and QP scope. Section 5 offers my conclusions.

2 Quantifier scope in Russian SVO sentences: Evidence for a QR account

In this section, after presenting evidence for scope ambiguity in doubly quantified transitive sentences in Russian (section 2.1), I discuss classic diagnostics for QR familiar from English, namely the Inverse Linking Construction (section 2.2) and Antecedent Contained Deletion (section 2.3). Additionally, I discuss some of the constraints on movement, which QR in

English is known to observe, in parallelism with overt movement (Johnson 2000), showing that QR in Russian similarly behaves as a covert syntactic movement operation (section 2.4).

2.1 Scope ambiguity in SVO sentences

The claim that Russian allows QR is supported, first of all, by the ambiguity of the basic SVO sentences in the language. Examples (3)–(6), involving various quantificational determiners in Russian, are representative.

(3) Po krajnej mere dva studenta pročitali každuju knigu.
at least measure two students.NOM read.PST.PL every book.ACC
'At least two students read every book.'
(at least 2 > ∀), (∀ > at least 2)

(4) Bol'še poloviny studentov otvetili na každyj vopros.
more than half students.NOM answer.PST.PL on every question.ACC
'More than half of the students answered every question.'
(more than half > ∀), (∀ > more than half)

(5) Neskol'ko xirurgov operirovali každogo pacienta.[3]
several surgeons.NOM operate.PST.PL every patient.ACC
'Several surgeons operated on every patient.'
(several > ∀), (∀ > several)

(6) Kakoj-to student ljubit každogo professora.
some student.NOM love.PRES.SG every professor.ACC
'Some student loves every professor.'
(∃ > ∀), (∀ > ∃)

In all of the above doubly quantified Russian sentences, where quantifiers lexically favoring wide scope readings are avoided, Russian speakers do detect scopal ambiguities comparable to those found in English.[4] If quantifier scope ambiguity comparable to English is available in Russian, we expect the grammatical mechanism underlying ambiguity in English, namely Quantifier Raising (henceforth QR), to be available in Russian as well. My assumptions about QR are quite standard: I assume that QR is a covert movement operation that takes place at the level of Logical Form and adjoins a QP to a position from which it c-commands and thus takes scope over the elements within its c-command domain. The argument for QR in Russian consists of the following parts: showing the existence of scopally ambiguous sentences, as discussed above, the existence of construc-

[3] Note that using non-agreeing morphology on the verb (i.e., *pročitalo, operirovalo*) in ex. (3)–(5) would create a strong inverse scope bias.

[4] Paperno (2012) provides a highly detailed description of quantification in standard modern Russian. While QP scope ambiguities are not the main focus of his work, when discussing doubly quantified sentences in Russian Paperno notes the following, "Like in English, two or more arguments of a given predicate in Russian can be bound simultaneously by QNPs. In this case, scope ambiguities may arise", citing the following example:

(i) Paperno (2012: 39)
Nekotoryj redaktor pročël každuju rukopis'.
some editor read every manuscript
'Some editor read every manuscript.' (Scope ambiguous in Russian, like its English counterpart)

Paperno states that the following two readings are available for this sentence (the original notation is preserved):

- Subject Wide Scope (SWS): There is one editor x such that x read all the manuscripts.
- Object Wide Scope (OWS): Each manuscript is such that at least one editor read it (possibly different editors read different manuscripts).

tions whose analysis requires postulating QR, including non-local QR; showing that the movement I argue to be responsible for the ambiguity is subject to (most) of the same constraints on movement obeyed by overt movement (as is known to be true of QR in English; see the discussion in Johnson 2000) and, finally, the evidence that subject reconstruction takes place in Russian, a fact that is arguably responsible for the ambiguity of Russian SVO sentences even in those cases where only short QR takes place. Thus, Russian is shown to be fully parallel to English, strongly suggesting that the availability of Scrambling in a language does not adversely affect the availability of QR or its basic quantificational properties. This, in turn, suggests that limited availability of inverse scope in languages such as German must not be tied to the availability of Scrambling in the language, suggesting the need to look for an alternative explanation of scope rigidity in languages where it is currently attributed to the availability of Scrambling.

2.2 Inverse Linking

One of the crucial constructions that provide an argument for QR is the Inverse Linking Construction. Inverse Linking Constructions (ILCs) like (7a) involve an embedded quantifier *every city* that takes scope over its containing quantifier phrase *someone from*. Such inversely linked, embedded QPs in examples like (7) are known to be able to bind a pronoun in the predicate phrase, despite not c-commanding the latter in overt syntax. The resulting interpretation for (7a) is provided in (7b).

(7) May (1985)
  a. [Someone from **every city**] despises **it**.
  b. for every city x, for some person y from x, y despises x

The syntactic analysis of such cases proposed in May (1977); (1985) crucially involves Quantifier Raising. The containing QP raises out of the main sentence (8a), followed by extraction of the embedded QP from within it (8b). This derivation results in inverse scope for the embedded QP, placing it in a high position from which it can bind the pronoun (it_i) in the predicate.

(8) a. [someone from [every city$_i$]]$_j$ [t$_j$ despises it$_i$]
  b. [TP [NP1[every city$_i$] [NP2 someone from t$_i$]]$_j$ [TP t$_j$ despises it$_i$]]

Inverse Linking thus provides strong evidence for the existence of covert QR, insofar as it simultaneously accounts for the otherwise puzzling combination of scope and binding properties found in many IL examples. Specifically, the most natural reading for the ILC, that is, the wide scope for the embedded QP is also the reading on which the pronoun is interpreted as bound by the latter, something which requires the QP to c-command the pronoun and something which is impossible unless the QP is raised from its embedded position. Assuming then that covert QR *is* the mechanism needed to raise the QP from inside its containing QP to derive the bound pronoun reading and the most salient scope interpretation in ILCs, the existence of ILCs in a language can be taken as evidence for the presence of covert QR.

As discussed in detail in May & Bale (2005), despite serving as one of the strongest initial motivations for postulating QR and the level of Logical Form itself, the Inverse Linking Construction has remained a serious challenge for various theories of QR, requiring modifications to QR-based theories such as May (1985) in order to capture c-command relations in examples such as (7a) and arguably not having a solution in theories specifically trying to do away with QR as a mechanism, such as Aoun & Li (1993); Hornstein (1995); Kitahara (1996); Kayne (1998), a.o.

At present there appear to be two different approaches to deriving the IL facts. The first (May 1977; Sauerland 2005) derives the inversely linked interpretation by covertly raising the embedded QP to adjoin sententially. The second approach (May 1985 and especially its updated version in May & Bale 2005; Larson 1985) treats the inversely linked structure as one in which the embedded QP forms a complex quantificational unit with the embedding QP, by adjoining to it via QR. Both approaches face problems, discussed in detail in May & Bale (2005) and Kobele (2010).[5] What seems clear, however, is that despite the challenges specific theories face, the mechanism of covert QR appears indeed to be necessary in order to derive at least the wide scope interpretation for the embedded QP in Inversely Linked structures, the bound variable reading in examples such as (7a) and *Larson's Generalization* (to be discussed further), thus the availability of inversely linked structures in a language provides strong evidence for the existence of QR.

Russian indeed allows Inverse Linking. Example (9a) is the counterpart of the English (7a). It has a bound pronoun reading under which it is understood as asserting that for each of the cities x, someone among x's dwellers despises x. The LF representation of this sentence on its bound variable reading is (9b), based on the structure proposed in May & Bale (2005). Examples (10) and (11) are natural-sounding examples of Inverse Linking with a highly salient inverse scope reading, with the inversely linked structure occurring in subject position in (10) and in object position in (11).

(9) a. [Kakoj-to žitel' [každogo iz gorodov$_j$]] preziraet ego$_j$.
some dweller.NOM every from cities.GEN despises it.ACC
'Someone from every city despises it.'

LF: b. [TP [NP1 [každogo iz gorodov]$_y$ [NP2 kakoj-to žitel' **y**]]$_x$
[TP **x** preziraet ego$_y$]]

(10) [Bol'še poloviny jablok [každogo sorta]] isportilis'.
more half apple.GEN.PL every type.GEN become.bad.PST.PL
'More than half of the apples of every type have gone bad.'

(11) U Miški est' [podarok [každogo iz rodstvennikov]].
at Mishka.GEN is present.ACC every from relatives.GEN
'Mishka has a present from every relative.'

The correspondence between Inverse Linking Constructions in English and Russian is a thoroughgoing one. In their discussion of Inverse Linking, May & Bale (2005) observe pairs like (12a, b), where Inverse Linking combines with verbal ellipsis in the second member. They note that whereas (12a) is scopally ambiguous, with either quantifier capable of taking widest scope, (12b) is unambiguous. VP ellipsis in the second sentence (*Bill did too*) apparently "freezes scope" in the sentence providing the VP antecedent (*Two volunteers greeted the producer of every movie*). The only available scope reading in the latter thus tracks the surface order of QPs:

(12) a. **Two volunteers** greeted the producer of **every movie**.
(2 > ∀), (∀ > 2)
b. **Two volunteers** greeted the producer of **every movie**. Bill did [$_{VP}$ e] too.
(2 > ∀), *(∀ > 2)

[5] The first approach runs into the problem of not being able to rule out cases of scope-splitting (i.e., *Larson's Generalization*). As noted in Charlow (2010), Sauerland (2005), who assumes that the embedded QP must raise out of the embedding QP and attach at sentence level for interpretability reasons, also faces the problem of not being able to derive the non-inversely linked interpretation. Finally, Larson (1985) and May & Bale (2005) lack a discussion of an explicit method for semantic interpretation of complex quantifiers their accounts depend on; the latter, however, is proposed in Kobele (2010).

Interestingly, Russian shows the identical effect in comparable pairs. Thus whereas (13a) allows scope ambiguity so that either the same or different pairs of volunteers greeted every producer, (13b) allows only the former reading. VP ellipsis freezes scope to the surface order in the sentence providing the antecedent.

(13) a. Dva volontera privetstvovali prodjussera každogo iz
two volunteer.NOM.PL greet.PST.PL [producer [every from
fil'mov.
movie].GEN].ACC
'Two volunteers greeted the producer of every movie.'
(2 > ∀), (∀ > 2)

b. Dva volontera privetstvovali prodjussera každogo iz
two volunteer.NOM.PL greet.PST.PL producer [every from
fil'mov i Vanja tože.
movie].GEN].ACC and Vania also/as well
'Two volunteers greeted the producer of every movie and Vanja did too.'
(2 > ∀), *(∀ > 2)

Consider also the triplet of English sentences in (14). The sentence in (14a) allows an *in situ* interpretation for the quantifier *every committee*, where it means that a maximum of two senators who happen to be on every committee voted for the bill, as well as a wide scope interpretation for the quantifier, where it means that for every committee, a maximum of two senators on *that* committee did so. Example (14b) has only the second reading, because the quantifier *every committee* must move out of the containing DP in order to bind the variable *it* in the main predicate. Example (14c) on the other hand, has only the *in-situ* reading, since removing the QP *every committee that he thought was worthy of his attention* would remove the variables *he* and *his* from the scope of the quantifier *at least one senator* that binds them.

(14) a. At most two senators on every committee voted for the bill.
b. At most two senators on every committee$_i$ voted to abolish it$_i$.
c. At least one senator$_i$ on every committee that he$_i$ thought was worthy of his$_i$ attention, voted for the bill.

The Russian paradigm in (15) below displays identical relations of scope and binding:[6]

(15) a. Maksimum dva senatora v každom iz komitetov
at most two senators.NOM.PL in every from committees
progolosovali za zakonoproekt.
voted.PL for bill.ACC
'At most two senators on every committee voted for the bill.'
(at most two > every), (every > at most two)

[6] Some speakers apparently interpret QPs like *maksimum QP, kak minimum QP* as narrow-scope indefinites; for them (15a) has only an inverse scope reading and (15c) is ungrammatical (since it requires wide scope for the low-scope indefinite due to binding relations). To see that wide scope for such QPs is in fact available, consider (i), the counterpart of (15c) in which the *minimum QP* has been relativized. The sentence is both grammatical and coherent, demonstrating that the QP in question has no difficulty taking wide scope and binding the pronouns inside the relative clause (the difficulty associated with this sentence may lie in the processing costs of having two relative clauses embedded in one another).

(i) Kak minimum odin senator$_i$ [kotoryj sidit v každom iz komitetov, kotorye on$_i$
how minimum one senator.NOM which sits on every from committies, which he.NOM
sčitaet dostojnymi svoego vnimanija], progolosoval za zakonoproekt.
considers worthy [self attention].GEN voted for bill.ACC
'At least one senator on every committee that he thought was worthy of his attention voted for the bill.'
(at least > ∀), *(∀ > at least)

b. Maksimum dva senatora v každom iz komitetov$_i$
at most two senators.NOM.PL in every from committees
progolosovali za to, chtob raspustit' ego$_i$.
voted for that in.order.to abolish it.ACC
'At most two senators on every committee voted to abolish it.'
*(at most two > ∀), (∀ > at most two)

c. Kak minimum odin senator$_i$ v každom iz komitetov, kotorye on$_i$
how minimum one senator.NOM.SG in every from committees, which he
sčitaet dostojnymi svoego vnimanija, progolosoval za zakonoproekt.
considers worthy [self attention].GEN voted for bill.ACC
'At least one senator on every committee that he thought was worthy of his attention, voted for the bill.'
(at least > ∀), *(∀ > at least)

Finally, the Inverse Linking Construction in Russian obeys *Larson's Generalization*, which was established in Larson (1985) on the basis of English sentences such as (16):

(16) Larson (1985)
Two politicians spy on someone from every city.

Larson shows that sentences such as (16) show the interesting property that the two QPs of the Inversely Linked structure in an object position in a sentence with a third, subject QP, can either both take scope below the third QP or they can both take scope above the QP, but the third QP can never scope between the two QPs that are inversely linked. May & Bale (2005), attempting to verify the validity of the generalization using different quantifiers, note that it does in fact hold for sentences such as (17), which avoid potential problems due to the bare plural quantifier in Larson's original example:

(17) May & Bale (2005)
More than half of the students will investigate at least one dialect of every language.

While sentences with three QPs are generally quite difficult to evaluate, May & Bale's choice of the QPs and the particular example they occur in, which makes certain readings pragmatically impossible, simplify the task. Thus, in Russian it is fairly easy to see that *at least one* > *more than half* > *every* and *every* > *more than half* > *at least one* readings are indeed unavailable, as expected under Larson's Generalization, and the two salient interpretations are the ones where the subject scopes above the complex NP in object position or below it, with the embedded QP scoping above the embedding QP in both cases:

(18) Bol'še poloviny studentov issledujut po krajnei mere
more half.GEN students.GEN investigate.FUT [at least
odin dialect každogo iz jazikov.
one dialect [every from languages].GEN].ACC
'More than half of the students will investigate at least one dialect of every language.'

more than half > **every** > **at least one:** more than half of the students x are such that for every language y there is at least one dialect of y that x will investigate;

every > **at least one** > **more than half:** for every language x there is at least one dialect y such that more than half of the students will investigate y.

As noted by May & Bale, the sentence in (17) does not seem to have an interpretation where for every language, more than half of the students will investigate a dialect of it and moreover, no student will investigate the same dialect as another, which corresponds to

every > more than half > at least one interpretation, which should be available if *Larson's Generalization* didn't hold. The same appears to be true for Russian as well. Thus, we see that Russian not only allows the Inverse Linking Construction, which May (1977; 1985) and subsequent work have taken to provide decisive evidence for the existence of the operation of Quantifier Raising, but Russian ILC also exhibits the same constellation of scope and binding relations that we find in the counterpart English cases as well as obeys the same constraints on interpretation as those that have been noted for English in Larson (1985).[7] The latter fact is particularly significant as it underscores the depth of the parallelism between the two languages, which is puzzling if quantification in Scrambling languages is constrained in ways argued for in Beck (1996); Ionin (2003); Bobaljik & Wurmbrand (2012) and others.

2.3 Antecedent Contained Deletion

The phenomenon of Antecedent Contained Deletion (ACD) is widely accepted as providing strong evidence for the level of Logical Form and for the covert operation of Quantifier Raising applying at that level. On the assumption that elliptical VPs like that in the second conjunct of (19a) reconstruct their content from non-elliptical VPs, as in (19b), cases of VP ellipsis like (20a) pose a problem of regress (see Bouton 1970; Sag 1976; May 1985 i.a.). The position of the elliptical VP ($[_{VP}$ e]) inside the VP that is to serve as its reconstruction source entails that reconstruction will always introduce another copy of the elliptical element (20b), which will itself require reconstruction, etc.:

(19) a. John could $[_{VP}$ **visit Mary's family**] and Sonja could $[_{VP}$ **e**] too.
b. John could $[_{VP}$ visit Mary's family] and Sonja could $[_{VP}$ **visit Mary's family**] too.
RECONSTRUCT VP

(20) a. John could $[_{VP}$ visit everyone Sonja could $[_{VP}$ e]]
b. John could $[_{VP}$ visit everyone Sonja could $[_{VP}$ **visit everyone Sonja could** $[_{VP}$ e]]]
RECONSTRUCT VP

The solution to this problem urged by Sag (1976), Williams (1977) and May (1985) is to extract the quantifier phrase out of VP at LF (21a). This creates a reconstruction source for the elided VP that involves no regress and that yields the correct interpretation for the example (21b):[8]

(21) a. [everyone that Sonja could $[_{VP}$ e]]$_i$ [John could $[_{VP}$ visit t_i]]
QR QUANTIFIER
b. [everyone that Sonja could $[_{VP}$ **visit** $\mathbf{t_i}$]]$_I$ [John could $[_{VP}$ visit t_i]]
RECONSTRUCT VP

[7] See Sauerland (2005) and Charlow (2010) for the more recent discussion of Inverse Linking in general and of *Larson's Generalization* and scope out of DPs in particular and Kobele (2010) for a recent semantic attempt at deriving the semantics of complex DPs posited in Larson (1985) and May & Bale (2005) in order to account for *Larson's Generalization*.

[8] A prominent recent analysis of ACD is Fox (2002). Fox argues that the ACD cases result from extraposition of the relative clause containing the ellipsis from the antecedent of the ellipsis. On Fox's analysis such extraposition is the result of "late merging" a clause into a DP that has undergone QR. As discussed in Johnson (2012), some of the most convincing evidence for Fox's analysis of ACD comes from examples in (i) due to Tiedeman (1995):

(i) Fox (2002)
a. *I said that everyone you did Δ arrived.
b. I said that everyone arrived that you did Δ.
Δ = said that x arrived.

Examples such as these, Johnson notes, support the hypothesis that where the ellipsis gets resolved is determined by where the relative clause is pronounced. In (ia), extraposition has not occurred, which means that the relative clause is pronounced in the VP that should serve as the antecedent for the ellipsis it contains. Therefore, if the relative clause must be interpreted in this position the ellipsis won't be resolved, leading to ungrammaticality. In (ib) the relative clause is extraposed to a position outside the antecedent VP, merging with the QR'ed DP, which allows for correct resolution of ellipsis. Importantly for our purposes here, Fox's account of ACD also depends on QR.

Thus, to an extent that successful resolution of ACD and avoiding the infinite regress problem depend on the assumption of QR applying in such cases, ACD provides strong evidence for covert movement.

2.3.1 ACD in Russian

Assuming this account of ACD is correct, the presence of ACD constructions in a language becomes a diagnostic for QR. Kazenin (2001) argues explicitly that the Russian examples in (22a–c) are examples of ACD involving VP-ellipsis:

(22) Kazenin (2001)

a. Petja budet razgovarivat' so vsemi, s kem
Peter.NOM will talk.INF with everyone.INSTR, with who.INSTR
(budet) i Kolja.
(will) also Kolia.NOM
'Peter will talk with everyone Kolja will.'

b. Petja budet razgovarivat' obo vsem, o čem
Peter.NOM will talk.INF about everything.PREP, about what.PREP
(budet) i Kolja.
(will) also Kolia.NOM
'Peter will talk about everything Kolja will.'

c. Petja ne budet razgovarivat' so vsemi, s kem
Peter.NOM NEG will talk.INF with everyone.INSTR with who.INSTR
(ne budet) i Kolja.
NEG will also Kolia
'Peter won't talk with everyone Kolja won't.'

On Kazenin's view, (22a) for example, involves raising of the universally quantified phrase *so vsemi s kem (budet) i Kolja* '*with everyone with whom (will) also Kolia*', containing an empty VP (23a). The latter then reconstructs at Logical Form from the antecedent VP *razgovarivat' s* 'talk with' (23b):

(23) a. [so vsemi, s kem (budet) i Kolja [$_{VP}$ e]] Petja budet [$_{VP}$ razgovarivat' t]
QR QUANTIFIER

b. [so vsemi, s kem (budet) i Kolja [$_{VP}$ **razgovarivat' t**]] Petja budet [$_{VP}$ razgovarivat' t]
RECONSTRUCT VP

As in analyses of the English counterparts, Kazenin crucially assumes QR as the mechanism by which antecedent containment is resolved. Additional candidates for Russian Antecedent Contained VP Ellipsis include (24a–c), which diverge from (22a–c) in some ways:[9]

[9] Independent evidence in favor of the claim that VP ellipsis (rather than gapping) is involved in the relevant Russian cases comes from examples such as (i), due to Johnson (2000):

(i) A different boy tried to stand near every visitor only after a different girl had tried to Δ.

Johnson presents this example to argue for an unrelated point, which is nevertheless important for us to establish as well, namely that QR cannot be reduced to A-movement (as in Hornstein 1995). Johnson argues, contra Hornstein (1995), that quantificational adjuncts are able to assume scope in a position which differs from the one in which their meaning is composed with the rest of the sentence. Since no VP ellipsis removes only part of the predicate, the example in (i) presents evidence that *tried to stand* cannot form a complex predicate in the second conjunct. Thus, *near every visitor* can modify *stand* in the second conjunct and still have scope over *a different girl*. Therefore, ex. (i) argues against a monoclausal analysis of *try to stand*, which is similar in spirit to the restructuring analysis employed by Hornstein in order to accommodate cases where QPs are able to scope outside their clause.

(24) a. Vanja [$_{VP}$ budet smotret' [vse **te že** fil'my,
Vania.NOM will watch.INF all those ZHE movies.ACC
čto i ego brat [$_{VP}$ **e**]].
that also his brother.NOM
'Vania will watch all the movies his brother will.'

b. Ja videl (vsex) **tex že** mal'čikov, čto i Sonja
I.NOM see.PST.MSC (all) those ZHE boy.ACC.PL that also Sonja.NOM
'I saw all the boys Sonja did.'

c. Petja xotel kupit' vse (**to že**), čto i ja
Peter.NOM want.PST.MSC buy.INF all (those ZHE).ACC that also I.NOM
'Peter wanted to buy everything I did.'

Whereas (22a–c) are indefinite pronoun constructions, headed by the equivalent of English *everyone*, *everything*, etc., (24a, b) exhibit full nominal heads. Furthermore, (24a–c) also show a *te že/to že* element intervening between the quantifier and the head noun, whose obligatoriness seems conditioned by the presence of the latter (cf. (24a, b) where a head noun is present versus (24c) where it is absent). Finally, *te že/to že* seems to license elision of the quantifier in some cases (24b). These differences notwithstanding, (24a–c), like (22a–c) surely involve an antecedent containment relation to be resolved by QR. Thus in (24a), the object of *smotret'* 'watch' is a universally quantified nominal *vse te že fil'my čto i ego brat* 'all those movies that also his brother' that appears to contain a missing predicate, understood as '(will) watch'. Thus (24a) will arguably require recourse to the same movement mechanism to derive the interpretation of the elided VP, where the quantifier extracts (25a) and the VP subsequently reconstructs (25b):

(25) a. [vse te že fil'my čto i ego brat [$_{VP}$ e]]$_i$[Vanja budet smotret' t$_i$]
QR QUANTIFIER

b. [vse te že fil'my čto i ego brat [$_{VP}$ **budet smotret' t$_i$**]]$_i$ [Vania [$_{VP}$ budet smotret' t$_i$]]
RECONSTRUCT VP

Consider also the bracketed quantifiers in (26a, b) which Larson (2000) suggests involve an elliptical clause whose content is reconstructed from the containing main clause. Larson argues that these exhibit Antecedent Contained CP Deletion and that reconstruction of the elliptical CP involves the same mechanisms involved in the VP cases in (21); i.e., QP raises (27a) and CP reconstructs (27b):

(26) Larson (2000)

a. Max did [everything you said Ø].
(cf. Max did everything you said **that he did** and
Max did everything you said **to do**.)

b. I did [everything you asked Ø].
(cf. I did everything you asked **that I do**)

Example (ii), modeled on Johnson's example above, then, helps us establish several important points: first, it demonstrates that true VP ellipsis does take place in Russian; second, it demonstrates the ability of QPs to take non-local scope (contra Ionin 2003) and third, it provides evidence that an A-movement/case-driven reanalysis of QR in the spirit of Hornstein's account would not work for Russian.

(ii) Kakoj-to mal'čik popytalsja vstat' rjadom s každym posetitelem tol'ko posle togo, kak
Some boy.NOM try.PST.MSC stand.INF near with every visitor.INSTR only after that as
kakaja-to devočka popytalas'.
some girl.NOM try.PST.FEM
'Some boy tried to stand near every visitor only after some girl had tried to.'

(27) a. [everything you said [$_{CP}$ e]] [$_{CP}$ Max did t]
QR QUANTIFIER
b. [everything you said **[$_{CP}$ Max did t]**] [$_{CP}$ Max did t]
RECONSTRUCT CP

Interestingly, Russian exhibits the same constructions involving elliptical CPs (28a–f), with the same range of interpretations:

(28) a. Maks sdelal vse, čto ty skazal
Max.NOM do.PST.MSC all.ACC that you.NOM say.PST.MSC
($_{CP}$ čto on sdelal)/($_{TP}$ sdelat').
(that he.NOM did)/ (do.INF)
'Max did everything you said **that he did**.' and
'Max did everything you said **to do**.'

b. Ja sdelala vse, o čem ty poprosil
I.NOM did.FEM all, about what you.NOM asked.MSC
($_{CP}$ čtoby ja sdelala)/ ??/*($_{TP}$ sdelat').
(that.SUBJ I.NOM do.PST.FEM)/ (do.INF)
'I did everything you asked **that I do**.'

c. Maša pogovorila so vsemi, s kem ty dumaješ',
Masha.NOM talk.PST.FEM with everyone.INSTR with who.INSTR you think
($_{CP}$ čto ona pogovorila).
(that she talk.PST.FEM)
'Masha talked with everyone you think **that she talked**.'

d. Maks pozvonil vsem, komu ty xotela,
Max.NOM call.PST.MSC everyone.DAT who.DAT you.NOM wanted.FEM
($_{CP}$ čtoby on pozvonil)
(that.SUBJ he call.PST.MSC)
'Max called everyone you wanted **him to call**.'

e. Alisa pozvonila vsem, komu ty možeš predstavit',
Alice.NOM call.PST.FEM everyone.DAT who.DAT you.NOM can imagine.INF
($_{CP}$ čto ona pozvonit).
(that she.NOM call.FUT)
'Alice called everyone you can imagine **that she called**.'

f. Maks pomog vsem, komu ty xotela,
Max.NOM help.PST.MSC everyone who.DAT you.NOM want.PST.FEM
($_{CP}$ čtoby on pomog) / ($_{TP}$ PRO pomoč').[10]
(that.SUBJ he help.PST.MSC / help.INF)
'Max helped everyone you wanted **him to help**/whom **you wanted to help**.'

If (28a–f) represent Antecedent Contained CP Deletion examples, as Larson argues for their English counterparts, then QR must be assumed to be operative in these cases as well, with derivations involving QR equivalent to (27a, b).[11]

[10] This second reconstruction of the elided clause interpretation is dependent on a different prosodic contour, one in which the pronoun *ty* is stressed and the following verb is destressed.
[11] Note that examples in (28) are also much closer structurally to the ACD examples in English in that the *i* 'also' particle, obligatory in the other cases, is missing (quite expectedly, since what is elided is the whole CP).

The parallels between English ACD cases and what I am analyzing here as Russian ACD cases extend beyond the class of elliptical categories permitting ACD (VP, CP) to the scope of ellipsis itself. Consider the examples in (29). Sag (1976); Larson & May (1990) and Bruening (2001) observe the ability of ACD to disambiguate *de dicto/de re* readings in intensional contexts. Thus, while (29a) is ambiguous between the high and low scope of the QP with respect to the intensional verb *want*, its ACD counterpart (29b) only has a *de re* interpretation:

(29) a. Masha wanted every book that Kate wrote.
de dicto: 'Masha wants the totality of books written by Kate.' (e.g., she is a fan) (want > ∀)
de re: 'Every book that Kate wrote is such that Masha wants it' (∀ > want)

b. Masha wanted every book that Kate did.
(∀ > want), *(want > ∀)

This fact is predicted on the ACD account. The *de re* reading of (29a) obtains when *every book that Kate wrote* raises above the intensional verb *want* (30a). Since *every book that Kate did* **must** raise above *want* in (29b) in order to resolve the antecedent containment relation (30b), only a *de re* reading will be available.

(30) a. [every book that Kate wrote t] [Masha wanted t]
QR QUANTIFIER (DE RE)

b. [every book that Kate did [$_{VP}$ **want t**]] [Masha [$_{VP}$ want t]]
QR QUANTIFIER (DE RE) + RECONSTRUCT VP

Once again, Russian exhibits the same constellation of facts with comparable examples. Whereas (31a) has both *de dicto* and *de re* readings, (31b) shows only the latter, strongly suggesting that resolution of ellipsis in the latter is dependent on scope in the same way. Again, the fact that this property of ACD, described initially for English, holds for Russian ACD as well underscores their fundamental parallelism, despite superficial structural differences.

(31) a. Maša xotela každuju knigu iz tex, čto
Masha.NOM want.PST.FEM every book.ACC from those.ACC that
Katja napisala.
Katja.NOM write.PST.FEM
'Masha wanted every book that Kate wrote.'
(want > ∀), (∀ > want)

b. Maša xotela každuju knigu iz tex, čto
Masha.NOM want.PST.FEM every book.ACC from those that
i Katja
also Katja.NOM
'Masha wanted every book that Kate did.'
(∀ > want), *(want > ∀)

To summarize, in this subsection I have shown that Russian exhibits ACD, which is widely taken to present evidence for the availability of QR in a language. Furthermore, despite minor differences in the structure of the sentences involving VP ellipsis, the parallelism between Russian and English with regard to ACD is quite striking, as ACD in Russian is shown to involve the same categories (VP, CP) as well as shows the ability to interact with and disambiguate structures involving intensional predicates.

2.4 Evidence from disambiguation

The preceding sections have shown that, in addition to exhibiting basic scope ambiguities in cases like (1)–(4), Russian also shows the classic diagnostics for the existence of QR at the level of Logical Form such as Inverse Linking and Antecedent Contained Deletion phenomena parallel to those found in English.

In this section I will present arguments from disambiguation, which further suggest that syntactic movement is implicated in doubly quantified sentences in Russian, with inverse scope disappearing in the same contexts where overt movement is prohibited. As pointed out by Johnson, "one expectation raised by the thesis that the scope of quantifiers is determined through QR is that this cluster of locality conditions should be reflected in the size of quantifiers' scopes. Indeed, this is one of the more straightforward empirical means of confirming the QR thesis" (Johnson 2000: 1).

2.4.1 The Possessive DP Island Constraint

Russian obeys a **Possessive DP Island** constraint according to which movement from inside the possessive phrase is prohibited. Thus, whereas (32a), with extraction of *o čem* 'about what' from a non-possessive DP (*stat'ju o čem* 'article about what') is acceptable, (32b) with extraction from a possessive (*Mašinu stat'ju o čem* 'Masha's article about what') is not.

(32) a. O čem ty čital [**stat'ju** _]?
about what.PREP you.NOM read.PST.MSC article.ACC
'What did you read an article about?'

b. *O čem ty čital [**Mašinu stat'ju** _]?
about what.PREP you.NOM read.PST.MSC Maša's.POSS article.ACC
'What did you read Maša's article about?'

Consider now the sentences in (33a–c).

(33) a. [Kakoj-to student] uničtožaet [**stat'ji** o každom iz professorov].
some student.NOM.SG destroy.PRES.SG articles.ACC about every.PREP among professors.GEN.PL
'Some student destroys articles about every professor.'
(∃ > ∀), (∀ > ∃)

b. [Kakoj-to student] uničtožaet [**Mašiny stat'ji** o každom iz professorov].
some student.NOM.SG destroy.PRES.SG Maša.POSS.PL articles.ACC about every.PREP.MSC among professors.GEN.PL
'Some student destroys Masha's articles about every professor.'
(∃ > ∀), *(∀ > ∃)

In (33a), the second quantifier (*každom iz professorov* 'every professor') occurs within a non-possessive nominal counterpart to (32a). In (33b), it occurs within a possessive nominal counterpart to (32b). While the surface scope reading in doubly quantified sentences like (33a) is generally more salient for some speakers, the contrast in scope possibilities between (33a, b) is nonetheless sharp for all Russian speakers consulted. Whereas the first allows for an inverse scope reading, the second categorically resists inverse scope construal for the speakers consulted; indeed, even speakers who prefer surface scope perceive a sharp difference in the two cases. This contrast is expected if the inverse scope reading available in (33a) results from covert movement, QR, and if this movement is constrained by the same principles that constrain overt movement, in this case the prohibition on

extraction from Possessor Phrases (see, for instance, Ross 1967; Müller 1993; Rappaport 2001).[12]

2.4.2 The Coordinate Structure Constraint

Overt movement is known to obey the **Coordinate Structure Constraint**, under which extraction from one conjunct only is prohibited (34a, b) (Ross 1967).

(34) a. Bill will [$_{VP}$ [$_{VP}$ cook supper] and [$_{VP}$ wash the dishes]].
b. *What will Bill [$_{VP}$ [$_{VP}$ cook _] and [$_{VP}$ wash the dishes]]?

Rodman (1976) notes a parallel effect with quantifier scope construal in English. Consider the examples in (35), based on Rodman's example. Whereas (35a) is ambiguous, allowing an inverse scope construal, (35b), where the second quantifier is embedded inside a conjunction, is not.

(35) a. A soldier found every student.
$(\exists > \forall)$, $(\forall > \exists)$
b. A soldier [$_{VP}$ found every student] and [$_{VP}$ saved him]
$(\exists > \forall)$, $*(\forall > \exists)$

As Rodman notes, the phenomena in (34) and (35) can be brought together under the assumption that question formation and scope assignment involve the same mechanisms, hence what blocks one will block the other. In our terms, the relevant mechanism is movement, which is overt in the first case (wh-movement) and covert in the second (QR).

Russian allows the coordination construction that demonstrates the same properties the English counterpart does (McNally 1993). The data below demonstrate that Russian shows the same distribution of form and interpretation. Like English, Russian obeys the Coordinate Structure Constraint on movement; thus (36b) is excluded in parallel to (34b).

(36) a. Vanja [$_{VP}$ [$_{VP}$ prigotovit užin] i [$_{VP}$ pomoet posudu]].
Vania.NOM cook.FUT.SG dinner.ACC and wash.FUT.SG dishes.ACC
b. ***čto** Vanja [$_{VP}$ [$_{VP}$ prigotovit _] i [$_{VP}$ pomoet posudu]]?
what.ACCVania.NOM cook.FUT.SG and wash.FUT.SG dishes.ACC

Correlatively, Russian shows the same constraint on quantifier scope construal. Whereas (37a) is scopally ambiguous, (37b), which embeds the second QP (*každogo professora* 'every professor') within a conjunct, is not.

(37) a. Bol'šinstvo studentov ljubjat každogo professora.
[majority students.GEN]NOM love.PRES.PL every professor.ACC
'The majority of students love every professor.'
(most > ∀), (∀ > most)
b. Bol'šinstvo studentov ljubjat [[Mašu] **i** [každogo professora]].
[majority students.GEN]NOM love.PRES.PL Maša.ACC **and** every professor.ACC
'The majority of students love Maša and every professor.'
(most > ∀), *(∀ > most)

[12] Johnson (2000) discusses evidence due to Müller (1993) to the effect that Scrambling in German from posessive DPs with a genitive is prohibited and shows that the same constraint holds in English, with possessive DPs serving as a barrier to covert movement of embedded QPs in Inversely Linked structures. More generally, Johnson provides an in-depth discussion of various constraints overt and covert movement obeys and, noting a number of significant parallels, concludes that QR should be conceptualized as the covert equivalent of Scrambling, with the two obeying the same constraints on movement.

Once again, even Russian speakers showing a general preference for surface scope perceive a strong contrast in (37a, b). Whereas the first sentence is perceived as ambiguous, however dispreferred the reading may be for some speakers, the second sentence categorically excludes the inverse scope construal, for all Russian speakers.

2.4.3 Complex NP Constraint

In parallel to results with coordinate structures, Rodman (1976) notes another pairing of question formation and scope interpretation. English is known to forbid extraction from complex noun phrases, such as relative clauses. Thus the position occupied by *John* or by *a tranquilizer* in (38a) cannot be questioned, as shown in (38b):[13]

(38) a. A doctor will examine [the possibility that we give a tranquilizer **to John**].
b. *To whom will a doctor examine [the possibility that we give a tranquilizer _]?

Consider now the pair in (39a, b), due to Reinhart (2006). Example (39a), with the universal QP *every new patient* in direct object position readily allows the surface or the inverse scope in English. By contrast, (39b) can only be understood on its surface scope interpretation. The position occupied by prepositional objects *to John/to every new patient* in (38b) and (39b) respectively evidently does not permit their occupants either to be extracted overtly or to obtain wide scope via QR.

(39) a. **A doctor** will examine **every new patient**.
$(\exists > \forall)$, $(\forall > \exists)$
b. **A doctor** will examine the possibility that we give some tranquilizer **to every new patient**.
$(\exists > \forall)$, $*(\forall > \exists)$

Parallelism suggests that the same mechanism is at work in both. Again, for us the relevant mechanism is movement, which is overt in the first case (38b) and covert in the second (QR in 39b). Once again Russian shows the same patterning of form and interpretation. Russian also obeys the Complex NP Constraint on extraction, as shown by the pair of sentences in (40a, b):

(40) a. Kakoj-to professor rassmotrit neobxodimost' togo,
some professor.NOM examine.FUT.SG necessity.ACC that.ACC
čtoby vygnat' Ivana.
in.order expel.INF Ivan.ACC
'Some professor will examine the necessity of expelling Ivan.'
b. ***Kogo** kakoj-to professor rassmotrit neobxodimost' togo,
who.ACC some professor.NOM examine.FUT.SG necessity.ACC that.ACC
čtoby vygnat' _.
in.order expel.INF

[13] The original examples corresponding to (38)/(39) have been modified since, as noted in den Dikken (1995), A'- movement of the indirect object in the Double Object Construction (DOC) is not permitted in cases like (i):

(i) den Dikken (1995: 183)
*Who did Bill think that John gave a book?

Thus, the examples in (38b) and (39b) have been modified to include a Prepositional Dative Construction, which permits extraction of the Goal argument, unlike the DOC, to avoid introducing a confound in these examples. The intended point of the original examples about the impossibility of both overt and covert movement from inside a complex NP remains intact.

Furthermore, Russian also forbids wide scope from the position that disallows extraction. Thus, whereas (41a) is ambiguous and allows an inverse scope construal, (41b) does not. The contrast in judgments for this pair is quite sharp for Russian speakers.

(41) a. Kakoj-to professor vygonit každogo studenta.
some professor.NOM expel.FUT.SG every student.ACC
'Some professor will expel every student.'
(∃ > ∀), (∀ > ∃)

b. Kakoj-to professor rassmotrit neobxodimost' togo,
some professor.NOM examine.FUT.SG necessity.ACC that.ACC
čtoby vygnat' každogo studenta.
in.order expel.INF every student.ACC
'Some professor will examine the necessity of expelling every student.'
(∃ > ∀), *(∀ > ∃)

Thus, we have seen strong syntactic evidence from a wide range of diagnostic constructions supporting the claim that Russian allows QR with exactly the same properties as those that have been at various times observed for QR in English. It appears then that whatever effects the possibility of overt word order permutations such as Scrambling might have on the language's properties, it does not affect the presence or the general properties of QR as far as the constructions reviewed above are concerned.[14]

3 Deriving object-wide scope

Turning next to the actual syntactic implementation of QR, one might reasonably expect that scope ambiguities in sentences with a quantified subject and a quantified object in Russian may arise in one of the two ways that have at different times been proposed for English. One possibility involves raising of the object QP from a *v*P-adjoined position (necessary for semantic convergence) to a TP-adjoined position, thus gaining c-command over the subject and therefore deriving object wide scope (May 1977). Another option is concomitant quantifier raising of the object with Reconstruction of the subject to a position where the object can obtain scope over it. Some evidence to the effect that the latter option (e.g., QR of the object and subject lowering) may at least sometimes be necessary for English comes from the fact that in some cases where lowering of the subject is prohibited, the otherwise available object wide scope reading suddenly disappears (Johnson

[14] In recent experimental work on Polish, another Slavic language with free word order, Grabska (under review) takes disagreements in the literature regarding the availability of inverse scope as a starting point (Russian: Ionin 2003 vs Antonyuk-Yudina 2006; Antonyuk 2015; Croatian: Progovac 1994 vs Godjevac 2004; Polish: Citko 2011 vs Szczegielniak 2004 and Witkoś 2009, with the former in each case arguing for scope rigidity and the latter for scope fluidity in basic SVO sentences), noting first that Inverse Linking and ACD are both possible in Polish, which is problematic for the "no QR/frozen scope" view of Polish and conducts an experimental study of the status of Polish quantificational SVO and OVS sentences. Controlling for information structural effects and the parcer's general preference for the surface scope construal, Grabska tested for the availability of inverse scope "in facilitating conditions incorporating the factors shown to influence the availability of the inverse scope in English: biasing context, control for the topic-specificity factor and priming the narrow scope of the existential." (Grabska under review: 428) The results of the experiment provide empirical support for the availability of inverse scope in both OVS and SVO Polish sentences, confirming that Polish, too, is not a "surface scope only" language, which is fully consonant with both empirical data presented here and the general theoretic conclusions they afford. Additional arguments for QR in Russian that come from hybrid wh-coordination and reflexive possessives, not reviewed in this paper, can be found in Zanon (2015) and Zanon's earlier work.

2000; 2001). Thus, in (42b), where the positive polarity item *some student* is prohibited from lowering into the scope of negation, the reading that was available in (42a) is no longer present:

(42) Johnson (2000)
   a. Some student has answered many of the questions on the exam.
   (∃ > many): there is a student x who answered many of the questions on the exam;
   (many > ∃): there are many questions x such that x was answered by (possibly) different students.
   b. Some student hasn't answered many of the questions on the exam. *(neg > ∃)

The sentence in (42b) indeed cannot mean that there are many questions such that they were not answered by some student or other. As Johnson (2000) shows, it has to be the case that such lack of ambiguity is caused by the inability of the positive-polarity subject to be within the scope of negation. Thus, according to Johnson, the sentence in (43) cannot mean that no student was met; it has to mean that there is a student such that I have not met this student, that is, the positive-polarity item **has** to take scope above negation.

(43) Johnson (2000)
   I have not met some student.

It is quite telling then, that the object wide scope in (42b) disappears exactly where the subject cannot lower below negation; thus while (42a) cannot differentiate between the two possible mechanisms for object wide scope, (42b) forces us to conclude that object QR may not always be enough; subject lowering may be a necessary component of object-wide scope. A similar conclusion can be reached on the basis of the following binding facts:

(44) Hornstein (1995)
   a. Everyone met a boy_i before he_i left.
   b. A boy_i met everyone before he_i left.

In (44a) it is possible to perceive a reading on which the boys vary depending on the values assigned to the universal QP *everyone* (that is, narrow scope of the object with respect to the subject) while still maintaining a bound variable interpretation. For this interpretation to obtain it is enough for the object QP to QR to a position c-commanding the pronoun while still staying in the scope of the subject. The other interpretation, the one on which there was a particular boy who met everyone (that is, wide scope for *a boy*) is available as well. In (44b), there is only one reading, one where boys do not vary depending on the values assigned to *every*. The lack of *every* > *a* reading is unexpected on the May-type view of QR but is predicted on the subject-lowering account on Hornstein's assumption that the *before*-clause containing the pronoun is structurally above the subject's base position within the *v*P, thus forcing the subject to remain high enough to maintain c-command of the pronoun. Returning to Russian, it is interesting that the data suggest we have to adopt the same account of object-wide scope as was just shown to be necessary for these cases in English, that is, the necessity of lowering the subject along with concomitant QR of the object to a position that is structurally higher than the lowered position of the subject. The conclusion is due to Russian sentences like (45), parallel to the English (42):

(45) a. Kakoj-to student rešil každuju zadaču.
some student.NOM solve.PST.MSC every problem.ACC
'Some student solved every problem.'
($\exists > \forall$): there is a student x such that x solved every problem in the relevant set of problems;
($\forall > \exists$): for every problem x, there is a student y, such that x was solved by y.

b. Kakoj-to student ne rešil každuju zadaču.
some student.NOM NEG solve.PST.MSC every problem.ACC
'Some student hasn't solved every problem.' ***(neg** $>$ $\exists$**)**

With the object wide scope reading disappearing in (45b), we have to conclude then, in a fashion parallel to the English case, that subject reconstruction seems indeed necessary for the object wide scope to obtain in Russian just as it appears to be necessary in these cases in English. What is remarkable about the Russian examples presented above is that they further show how pervasive the parallelism between Russian and English with respect to scope is: apparently Russian doubly quantified sentences are not only ambiguous in the same syntactic contexts but the mechanism for deriving ambiguity has to be **exactly** the same as well.

Ionin (2003) argues that Russian allows only interpretability-driven short QR as a result of which object QPs adjoin to *v*P in order to be interpretable (following Heim & Kratzer 1998), which in addition to her claim that there is no subject Reconstruction for scope derives the purported "surface scope only" status of Russian. This view, although partially abandoned by Ionin in her recent experimental work on Russian QP scope (e.g., Ionin & Luchkina 2017; 2018 i.a.) has nevertheless been widely adopted in syntactic work on Russian, with very recent work still taking the position that Russian allows only surface scope in non-emotive sentences and proposing accounts of various phenomena based on this assumption (e.g., Stepanov & Stateva 2009; Slioussar 2013; Titov 2017 i.a.). It should be noted, therefore, that given I have shown subject Reconstruction in Russian to be possible, numerous examples discussed in this paper could be argued to have been derived via an application of short interpretability-driven object QR to *v*P-adjoined position and subject Reconstruction, with the language still lacking non-local QR (the absence of which could then be tied to the presence of Scrambling in Russian). However, several examples we have discussed, such as CP-level ACD which are modeled on English examples in Larson (2000) and wide scope of adjunct QPs in biclausal infinitival sentences due to Johnson (2000) show conclusively that subject reconstruction combined with short object QR cannot always be sufficient, as deriving such examples clearly requires QR past *v*P level. Further evidence for non-local QR in languages in question comes from sentences such as (46), where the availability of the matrix reading for the lower universal QP provides additional evidence to that effect, given that in (46) there is no position within the infinitival clause to which the existential QP in the matrix clause could reconstruct.

(46) I asked some technician to check every plane.

As shown in (47), Russian indeed allows matrix readings in such sentences, reinforcing the conclusion that the matrix reading in such cases must be due to optional QR past *v*P level:

(47) Ja poprosil kakogo-to texnika proverit' každyj samolet.
I.NOM ask.PST.MSC some technician.ACC check.INF every plane.ACC
(matrix): Every plane is such that I asked some technician or other to check it.
(embedded): I asked some technician x to check every plane (in some relevant set of planes).

Thus, the sentence in (47), where the available scopes cannot be accounted for by the subject Reconstruction with concomitant short object QR, provides another argument in favor of the conclusion that Russian must allow optional/non-interpretability-driven QR past *v*P level.

4 Discussion

The emerging picture of Russian as a language in which Scrambling and QR co-exist, with Scrambling clearly not limiting the application of QR in any way clarifies the empirical domain of investigation, addresses the issue of empirical robustness of purported inverse relation between availability of Scrambling in a language and corresponding unavailability of QR on the basis of data from a separately taken Scrambling language and raises a number of important theoretical questions. The interesting questions to consider, in our opinion, seem to be these: do there exist scope rigid languages with mechanisms for relaxing rigidity in certain constructions, and scope fluid languages with mechanisms for freezing scope in certain constructions? Or is there underlyingly only **one** kind of language, with the relevant mechanism simply being applied to a lesser or greater degree? These large theoretical questions cannot be fully addressed on the basis of Russian data alone. Discussing a wider range of languages, Bobaljik & Wurmbrand (2012), however, provide an answer, arguing that scope freezing is not a matter of crosslinguistic parameterization (with languages being either scope frozen or scope fluid), but instead is a property of particular constructions, thus arguing for there being underlyingly only one kind of language, with various amounts of scope freezing operations in otherwise scope fluid languages. General conclusions of Bobaljik & Wurmbrand (2012) about QR not being a matter of crosslinguistic parameterization accord well with the findings presented in this paper. Russian, clearly, is not a scope frozen language, allowing numerous constructions and contexts were scope is fluid as well as a number of constructions (not discussed here) where scope is indeed surface frozen,[15] thus also suggesting that there is only one type of language underlyingly. Finally, German, which served as the basis of Beck's original observation regarding the correlation between the existence of Scrambling in a language and the corresponding lack of QR, has similarly been shown to be ambiguous in certain syntactic contexts and constructions (see von Stechow 1993; Sauerland & Bott 2002; Sauerland 2003; Bobaljik & Wumbrand 2012 i.a.) Consider, for instance, the following examples from German, which appear to provide a direct counterexample to Frey's (1993) treatment of QP scope in the language:

(48) von Stechow (1993)

a. dass ein Polizist vor jeder Bank steht.
'that a policeman in front of each bank stands'
($\exists > \forall$), ($\forall > \exists$)

b. dass vor einer Bank jeder Polizist steht.
'That in front of a bank every policeman stands'
($\exists > \forall$), *($\forall > \exists$)

What is important about the PP-QP examples such as the above is that they present a pattern that is the exact opposite of that discussed in Frey (1993): whereas in the latter

[15] For the latter see Antonyuk (2015; 2017; forthcoming) where it is argued that the surface scope frozen constructions in Russian represent the same phenomenon as the one first described for English in Schneider-Zioga (1988) for the *Spray-Load* alternation and Larson (1990) for the Double Object Construction. Note that the existence of surface scope freezing in Russian which arguably fully parallels the English cases provides yet another piece of corroborating evidence regarding the extensive parallelism between the two languages in the area of quantification.

scrambling a QP across a higher one leads to ambiguity, arguably due to its subsequent Reconstruction, the von Stechow examples present a case where the base order is ambiguous, with Scrambling of the lower QP across the higher one apparently leading to frozen surface scope. In addition to proving that correspondence between scope and Scrambling in German is far from the straightforward one depicted in the literature, the above pattern also makes the German data look much more similar to Russian, where scrambling of the lower QP across the higher one generally leads to surface scope freezing (see Antonyuk-Yudina 2009; Antonyuk 2015; 2017 for details).

Given these results, further pertinent theoretical questions to ask, then, seem to be these: is scope fluidity the basic case with apparently rigid languages the product of lots of freezing, or is scope rigidity the basic case with apparently fluid languages the product of lots of "thawing"? The conclusions in Bobaljik & Wurmbrand (2012), again, clearly point to the former. Limiting our attention in this paper for the most part to the data from just two languages, English and Russian, the answer similarly appears to be that scope ambiguity in multiply quantified sentences is the norm, therefore scope freezing, which is found in the English Double Object Construction (Larson 1990) and the *Spray-Load* Alternation (Schneider-Zioga 1988) and Russian ditransitives (Antonyuk 2015; 2017; forthcoming; Boneh & Nash 2017) is what really needs to be explained. If this idea is on the right track, the implication is that there must be a reason, similar or different, for why German sentences (to the exclusion of Inverse Linking, the von Stechow examples and some others)[16] are generally judged unambiguous. The same implication extends to other languages not discussed in this paper. Putting these strands of research together, what emerges, then, is a picture in which we may be able to maintain that quantification in natural languages is a unified phenomenon, with its rules applying in the same way across languages, with (un)availability of particular scopal interpretations of quantificational sentences in separately taken constructions being due to independent (possibly general and possibly language-specific) factors.

Finally, the outstanding question that needs to be addressed, both in this paper and more generally, is what **is** the relation between Scrambling and QR if it is not the inverse relation argued for by Beck (1996); Ionin (2003) and Bobaljik & Wurmbrand (2012)? While I have argued that the existence of an inverse relation between QR and Scrambling is falsified by the Russian data presented here, I believe the above accounts reflect something that is nevertheless intuitively correct, but is more subtle than a straightforward grammaticalized prohibition on QR in Scrambling languages. Going back to Ionin (2003), the main intuition that the account tried to capture is that Scrambling serves to express Information Structural relations, with Information Structure playing a crucial role in determining which word order is selected in any given discourse. I suggest that one way in which availability of Scrambling *can* lead to partial unavailability of inverse scope for some speakers is that speakers of Scrambling languages may be biased to rely on overt word order in computing the meaning of any given sentence more than speakers of fixed word order languages. In sentences with two QPs then, naive speakers will be biased to perceive surface scope relations first and foremost, and in the absence of additional cues that would override

[16] Fanselow & Zimmermann (2016) report on the results of a pilot study in German, which found, among other things, that the inverse scope interpretation was available when it corresponded to the "pragmatically sensible interpretation". The authors also argue that the high percentage of answers favoring the implausible interpretation corresponding to surface scope (30% of responses) suggests that German speakers have difficulty interpreting sentences with existential QP subject $>>$ a universal QP object with inverse scope. The results of the experiment throw further doubt on the widely held view that German mostly only allows surface scope interpretations under verum focus prosody, suggesting that the distribution of inverse scope interpretations in non-derived sentences is something that is in need of an explanation not currently offered by analyses such as Frey (1993) i.a.

this word order bias (i.e., disambiguating prosody, sufficiently rich context which would make the inverse scope reading salient or more pragmatically plausible, linguistic training, etc) the speakers might not recognize the availability of an additional interpretation. This would effectively take the issue out of grammar and instead relegate it to the realm of language performance, which seems intuitively correct, given the overwhelming evidence for the lack of any grammatical difference between English and Russian in terms of the availability of QR or its syntactic properties.[17] This explanation in general also seems to accord well with the history of the study of quantification in linguistics: English was also argued to be scopally unambiguous, in the sense of scopal relations being determined purely by those allowed by surface c-command relations (Reinhart 1976). My hope in this paper is, then, that having moved past the stage of initial misclassification of Russian, we can now try to resolve the truly puzzling, and as of yet outstanding questions, such as what causes real scope freezing in both English (Schneider-Zioga 1988; Larson 1990) and Russian (Antonyuk 2015; 2017; forthcoming; Boneh & Nash 2017).

5 Conclusions

In this paper I have argued that covert Quantifier Raising, both local (as argued in Ionin 2003) and non-local (as shown here) is available in Russian and furthermore that QR in Russian exhibits properties fully parallel to those found in English. This result strongly suggests that the more extensive availability of overt movement permutations in Russian has no direct grammatical correlation with the availability of covert movement of quantifiers. Sentences with multiple QPs in Russian are ambiguous in exactly the same contexts where their English counterparts are ambiguous, despite the former being a Scrambling language and the latter a fixed word order language. These results cast serious doubt on the general correlation suggested by Beck (1996), pursued, in different ways, in Ionin (2003) and Bobaljik & Wurmbrand (2012), according to which the availability of overt displacement operations in a language restricts the availability of covert movement. The correlation breaks down once we include the Russian data presented here: the data show that a language with free word order, such as Russian, expresses quantifier scope relations in exactly the same way as languages with fixed word order, as in English. This result, in turn, suggests that languages currently believed to be surface scope frozen, such as German, Hungarian, Chinese, etc may not differ from languages such as English in terms of the availability of QR or its basic properties after all; instead, fixed surface scope in certain (or even most) constructions (as in Hungarian, for instance) may result from the application of additional operations that do not apply in English.[18]

[17] A more complex grammatical relation between overt movement and QP scope is proposed in Antonyuk (2015; 2017; forthcoming). It is argued that overt displacement of a QP across another, structurally higher QP to a c-commanding position leads to surface scope freezing, with such instances of overt QP movement always being an instance of VP-level, non-reconstructing Scrambling. If this account is on the right track, then there is a very real sense in which Scrambling leads to surface scope freezing, but it is quite distinct in terms of the mechanism involved and the reasons behind it from the inverse relation suggested by the above accounts.

[18] Wu (2017) and Larson & Wu (2018) argue against the view of Chinese as a fully scope frozen language, presenting evidence from PP Datives, relative clauses and other contexts where doubly quantified sentence are in fact scopally ambiguous just as they are in English. The authors argue that while such contexts of ambiguity are mysterious on the "surface scope frozen" view of Chinese, the data receive a natural explanation once the topicality of Chinese subjects is taken into account. Assuming that Chinese subjects raise into Spec, TopicP (following Li & Thompson's 1981 characterization of Chinese as a "topic-prominent language"), and assuming the non-truth-conditional status of this projection, the lack of inverse scope in simple transitives is straightforwardly accounted for under Fox's (1995; 2000) Scope Economy view of QR on which optional instances of QR and Quantifier Lowering are prohibited unless they have a truth-conditional effect. The accounts in Wu (2017) and Larson & Wu (2018) are thus fully consonant with the view of quantification adopted here on which the overall "frozen scope" status of languages such as Chinese is an oversimplification which glosses over language-specific properties that can lead to the lack of inverse scope construal in certain languages, which thus leads to their misclassification.

Abbreviations

ACC = accusative, DAT = dative, NOM = nominative, GEN = genitive, INSTR = instrumental, PREP = prepositional, SG = singular, PL = plural, MSC = masculine, FEM = feminine, PST = past, FUT = future, PRES = present, INF = infinitive, SUBJ = subjunctive, NEG = negation, POSS = possessive.

Acknowledgements

I gratefully acknowledge generous support and feedback from John F. Bailyn, Richard K. Larson and Peter Hallman as well as the very useful criticisms and suggestions of three anonymous *GLOSSA* reviewers that have greatly improved the quality of this paper. I am indebted to numerous Russian linguist colleagues who provided judgments on the sentences presented here as well as to all my native Russian speaker informants.

Funding Information

Parts of this research were supported by the National Science Foundation Dissertation Research Improvement Grant, Award number: BCS-0921856 (PI Dr. John F. Bailyn) as well as by Austrian Science Fund (FWF), Grant number: P27384-G23 awarded to Dr. Peter Hallman.

Competing Interests

The author has no competing interests to declare.

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How to cite this article: Antonyuk, Svitlana. 2019. Quantifier Scope in Russian. *Glossa: a journal of general linguistics* 4(1): 54. 1–27. DOI: https://doi.org/10.5334/gjgl.562

Submitted: 03 November 2017 **Accepted:** 08 June 2018 **Published:** 22 May 2019

]u[*Glossa: a journal of general linguistics* is a peer-reviewed open access journal published by Ubiquity Press.

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