Keren Khrizman and Susan Rothstein
Bar-Ilan University

Russian approximative inversion as a measure construction*

1. Introduction to the issue

We present a semantic analysis of approximative inversion (AI) in Russian. (1) shows that numeral constructions have both a standard word order with the numeral preceding the noun and an inverted word order. As shown in (2), inversion leads to an approximative interpretation (Mel'čuk 1985, Franks 1995).

(1) a. *Ona napisala desjat' knig*
she wrote ten books
'She wrote ten books.'

b. *Ona napisala knig desjat'*
she wrote books ten
'She wrote about ten books.'

(2) a. *rovno desjat' knig*
exactly ten books
'Exactly ten books'

b. *#rovno knig desjat'*
exactly books ten

The syntax of these constructions has received considerable attention (Mel'čuk 1985, Franks 1995, Yadroff & Billings 1998, Pereltsvaig 2006, Matushansky, this volume). Most of the syntactic analyses suggest that the inverted structure is derived via head or phrasal movement. Pereltsvaig (2006) suggests that the interpretational effect of uncertainty or non-commitment concerning the numeral follows from the presence of a [+non-committal] feature. Zaroukian (2012) offers a modal analysis on which the approximative interpretation follows from epistemic uncertainty expressed by a null operator similar to *maybe*.

We argue: (i) AI is not an expression of epistemic uncertainty; (ii) analogous to the examples in (1b) headed by count nouns, there are inverted constructions with explicit measure predicates such as *gramm sto muki* 'grams hundred of flour'; (iii) both types of inverted constructions have the syntax of measure

* Acknowledgements: We would like to thank Ora Matushansky, Fred Landman and two anonymous reviewers for comments on an earlier draft of the paper. This research was partially funded by Israel Science Foundation Grant 1345/13 to Susan Rothstein.

pseudopartitives; (iv) inversion indicates a shift from an exact measure operation that maps entities onto a point on a scale to an approximate measure operation that maps a quantity onto a range of numbers; (v) the approximative interpretation follows from this operation.

2. AI is not the expression of epistemic uncertainty

Following the observations in Mel'čuk (1985) and Pereltsvaig (2006)[1], Zaroukian (2012) suggests that AI does not involve explicit approximation but rather indicates speaker uncertainty concerning the numeral. This uncertainty is expressed by a null modal operator similar to *maybe*, taking scope over the numeral. The operator uses information about the approximative range to determine a set of possible alternative values to *n* (the modal base), and information about the closeness of these values to *n* determines their ordering in terms of likelihood (the ordering source cf. Kratzer 1981,1991). The modal operator expressing uncertainty is more sensitive to contextual information than explicit approximators, which explains their different distribution.

There are several problems with this analysis. First, it predicts that the values closer to the uttered numeral are the more likely alternatives. But this does not seem to be true. AI is compatible with contexts in which any number within the approximate range of the named numeral is an equally good candidate for the correct answer. In (3) 39 is no more likely an answer than 38 or 41.

(3) How many students are there in your tutorial class?
Čelovek 40. Ja znaju čto ne menše 38 i ne bol'še 42, no točnee skazat' ne mogu.
people 40 I know that not less 38 and not more 42 but more precise say not can
'Around 40. I know that not fewer than 38 and not more that 42, but I can't say anything more precise.'

Second, AI does not always involve epistemic uncertainty. It does always indicate that the true value is somewhere in a designated range. In (4) the speaker uses AI to indicate a range of values, of which any is an equally legitimate alternative. (4) does not mean *I think you should come at 7, but I am not quite certain about this time*. Instead, it means *Come at any time which falls within the contextually reasonable interval associated with seven*.

1 Mel'čuk refers to Suprun (1962,1964) who notices that AI is an indication of a probable (non-committal) status of the numeral rather than the approximative status.

(4) Context: The speaker knows that he will be at home from 6 to 9.
Podojdi ko mne časov v sem'.
come to me hours in seven
'Come to see me around seven o'clock.'

In (5) a speaker uses inversion to indicate that there are a number of correct values, all of which fall within the designated range.

(5) Context: Masha comes to work late. I've spotted her entering her office at 9.45, 9.35, 10.05 and even at 10.25.
Ona pojavljaetsja na rabote tol'ko časov v desjat'.
she appears on work only hours in ten
'She appears at work only around ten (not earlier)'.

Clearly, AI can be and often is used in the contexts of uncertainty, as in (3), and does not have the same distribution as other approximators (cf. Mel'čuk 1985, Pereltsvaig 2006). However, examples like (4) and (5) indicate that the semantics of AI cannot be reduced to epistemic uncertainty.

?

шо по еи??

3. AI constructions involve measure predicates

3.1 Are all AI constructions alike?

There are three types of AI constructions: (i) AI inversion with count nouns as in (1b); (ii) AI inversion with explicit measure phrases as in (6); (iii) AI inversion with a count noun and a classifier such as *štuk* 'items', *čelovek* 'people' etc. as in (7) (see Yadroff & Billings 1998, Matushansky, this volume).

(6) a. *gramm dvesti (muki)*
grams two hundred flour
'about two hundred grams of flour'

b. *litrov pjat' (moloka)*
liters five milk
'about five liters of milk'

(7) a. *štuk pjat' starinnyx knig*[2]
items five antiquarian books
'approximately five old/antique books'

b. *čelovek desjat' anesteziologov*
people ten anesthesiologists
'approximately ten anesthesiologists'

It has been argued that counting and measuring numeral constructions have different syntactic structures and involve different interpretations of the numeral (Landman 2004, Rothstein 2009, Partee & Borschev 2012). We will show that

2 From Mel'čuk (1985, 96).

unlike ordinary numeral constructions, all AI constructions, including examples with count heads and counting classifiers as in (1b) and (7), have the syntactic properties of measure predicates.

3.2 Syntax of measure predicates

Rothstein (2009) shows that *five glasses of milk* is ambiguous between a count interpretation denoting five glasses filled with milk and a measure interpretation denoting a quantity of milk whose volume equals five glasses. In the measure interpretation, *glass* is used as a measure unit in the same way as *litre*. Measure readings occur in contexts like "Add five glasses/litres of milk to the mixture". Rothstein (2009) shows that in this reading *five litres/glasses of milk* has the structure found in (8). *Litre/glass* combines with the numeral of type **n** to form a measure phrase, which then modifies *milk*, resulting in a predicate denoting a set of quantities of milk, each of which measures five glasses/litres (8) (Landman 2004, Rothstein 2009, Partee & Borschev 2012).

(8) a. [[five litres/glasses$_{\text{N MEAS}}$]$_{\text{MEAS PHRASE}}$ of milk]
b. 5 litres/glasses of milk: λx.MILK(x)∧MEAS(x)= <5,LITRE/GLASS>

Measure modifiers apply to mass/plural nouns (9) (Rothstein (2011)).[3]

(9) *dva* *kilogramma* *muki/jablok/*jabloka*
two kilos flour.mass.sg/ apple.count.pl /apple.count.sg
'two kilos of flour/apples/apple'

Count pseudopartitives occur in contexts such as "The waiter put five glasses of milk on the table". Rothstein (2009) shows that count pseudopartitives have a different syntax and thus a different compositional interpretation. *Glass* is a nominal head, which shifts to a relational type, and combines with *milk* to give an N' predicate denoting a set of individual glasses containing milk. This predicate is then modified by a numeral at type <e,t>. The derived expression denotes a set of individual glasses filled with milk whose cardinality is five (10).

(10) a. [five [glassesN of milk]$_{N'}$]
b. 5 glasses of milk: λx.GLASS (x) ∧ CONTAIN (<x,MILK>) ∧ |x|= 5

Rothstein (2009) uses a number of syntactic tests to show that the distinction between (8) and (10) is linguistically real, including the following:

3 Pseudopartitives are distinct from partitive constructions. (Koptjevskaja-Tamm 2001)

(i) Measure pseudopartitives allow singular agreement whereas count pseudopartitives require plural agreement (11).

(11) a. *Five glasses of milk was/were added to the dough.*
b. *The five glasses of milk he carried in are/*is on the table.*

(ii) According to Carlson (1977), NPs headed by counting classifiers are modified by relative clauses denoting individuals headed by *which/that*, while measure NPs are modified by amount relative clauses headed only by *that* (12).

(12) a. *Please pass me the two glasses of milk which/that are on the table.*
b. *In the jug are two glasses of milk *which/that I need for the cake.*

(iii) Measure predicates cannot be modified by distributive adverbials since the latter require individual entities as antecedents (13).

(13) a. *#The cook mixed three kilos of flour with each other.*
b. *Five chairs were piled on the top of each other.*

This measure/count distinction occurs in typologically diverse languages including Hebrew (Rothstein 2009), Mandarin Chinese (Li & Rothstein 2012) and, crucially, Russian (Partee & Borschev 2012).

3.3 AI constructions have the syntax of measure constructions

AI constructions with both count nouns and measure expressions as heads behave as measure predicates according to the tests above.

(i) *Singular agreement is preferred in AI constructions.* There are two possible patterns of agreement between a numeral phrase subject and a verb: plural or singular neuter (14) (Franks 1995). Franks notes that singular is associated with a group reading and plural is associated with an individuated interpretation.

денис п.?

(14) *Desjat* *čelovek* *byli gospitalizirovany / bylo gospitalizirovano.*
ten people were hospitalized.pl /was hospitalized.sg
'Ten people were hospitalized.'

We note that measure contexts also take singular agreement (15). The singular is dispreferred with individuators like reciprocals[4] (16a/b) (cf. Franks 1995).

4 Matushansky & Ruys (this volume) argue independently for an even stronger claim that singular agreement always indicates measure or degree denotations.

(15) a. *Prošlo/*prošli pjat' let.*
went.sg/went.pl five years
'Five years passed.'

b. *Na ètot pirog ušlo/*ušli pjat' jaic.*
for this cake went.sg/went.pl five eggs
'Five eggs were used to make this cake.'

(16) a. *V očeredi stojalo/ stojali 10 čelovek.*
in line stood.sg/ stood.pl 10 people
'Ten people were standing/stood in line.'

b. *10 čelovek ?? stojalo/ stojali drug za drugom.*
10 people stood.sg/ stood.pl one after the other
'Ten people were standing one after the other.'

Franks (1995), Pereltsvaig (2006) and Matushansky & Ruys (this volume) show that AI phrases take singular agreement (17). Thus they pattern as measure expressions.

(17) a. *Čelovek pjat' prišlo/? prišli na zasedanie.* (Franks 1995,166)
people five came.sg/ came.pl on meeting
'About five people came to the meeting.'

b. *Rabotalo /?* rabotali v ètom magazine čelovek pjat'.* (Franks 1995,166)
work.sg / work.pl in this store people five
'About five people worked in this store.'

(ii) *Modification by 'that' relative clauses.* Yadroff & Billings (1998) show that AI cannot be modified by *which* clauses (18a), but are compatible with *that* clauses (18b), again patterning like the measure predicates in (12).

(18) a. **knig pjat', **kotorye** my kupili včera* (Y&B 1998, 332)
books.pl five which.pl we bought yesterday
'approximately five books **which** we bought yesterday'

b. *knig pjat', **čto** my kupili včera*
books.pl five that.sg we bought yesterday
'approximately five books **that** we bought yesterday'

(iii) *AI is degraded in contexts that require individuation.* Franks (1995), Yadroff & Billings (1998) and Stepanov (2001) notice that AI is degraded in reflexive, reciprocal and control constructions (19)-(21). These are contexts that require individuation and are incompatible with measure constructions.

(19) *Studentov pjat' *pomogalo/ *pomogali drug drugu.* (Franks 1995,166)
students five helped.sg/ helped.pl each other
'About five students helped each other.'

(20) *Ženščin pjat' *staralos'/* staralis' kupit ètu knigu.* (Franks 1995,167)
woman five tried.sg/ tried.pl to buy this book
'About five women tried to but this book.'

(21) *Ženščin pjat' ?* smotrelo'/?* smotreli' na sebja.* (Stepanov 2001,119)
woman five looked.sg/ looked.pl on self
'About five women were looking at themselves.'

Note also the contrast between (22) and (23) from Y&B (1998). AI is felicitous in (22), a context that makes the group interpretation of the numeral NP salient. However, the same sentence is ungrammatical when modified by a distributive adverbial that forces an individuating interpretation (23).

(22) Upon entering the Balkan restaurant what I saw was: (Y&B 1998, 324)
Mužčin pjat' tancevali s ženščinami desjat'ju.
men five danced with women ten
'Approximately five men were dancing (a beautiful folk dance) with approximately ten women.'

(23) *???Mužčin pjat' i ženščin desjat' tancevali drug s drugom.*
men five and women ten danced each with other
'About five men and about ten women danced with each other.' (Y&B 1998,326)

(iv) *Decrease of animacy.* Additional evidence in favor of treating AI as an expression of measure comes from Matushansky & Ruys' (this volume) observation about the inanimate/animate morphological case paradigm. Following Mel'čuk (1980), Matushansky & Ruys note that when numeral complements of certain prepositions have an amount reading, they decline like inanimate nouns (24)[5]. Similarly, AI requires inanimate case marking on the numeral (25) (Matushansky & Ruys following Franks 1995, 167).

(24) *siloj rovno v tri / * trex medvedja/* medvedej*
strength exactly in three.acc=nom.inanm / three.acc=gen.anm bear
'as strong as exactly three bears'

5 (24) is from Matushansky & Ruys (this volume) (with our minor modification) who follow Mel'čuk (1980).

(25) a. *ja videl soldata četyre / *soldat četyrex*
I saw soldier.sg four.acc=nom.inanm/ soldier.pl four.acc=gen.anm
'I saw about four soldiers.'

The data shown in this section strongly suggest that AI constructions headed by count nouns have the syntactic properties of measure expressions. It has been argued in the literature that count expressions can shift to measure predicates in certain circumstances (cf. Li & Rothstein 2012 on Mandarin). We argue that AI is a similar case, i.e. both explicitly measure and apparently count inverted constructions are in fact measure predicates.

4. The semantics of exact measures and approximate measures

We have shown that inverted constructions have the syntactic properties of measure constructions. We will now propose an APPROXIMATE measure operation, derived from the standard measure function illustrated in (8), from which approximate effects follow.

Measure expressions denote functions from individual quantities to values on a dimensional scale which is defined in (26).

(26) A scale is a triple <D, U, N> : (Landman 2004)
a. D is a dimension (volume, weight etc.)
b. N is a set of numbers (the natural numbers, the real numbers etc.)
c. U is the unit in terms of which the scale is calibrated (litres, kilos etc.)

Measure heads such as *litre* (27a) combine with a number to give a precise measure function as in (27b). (27c) is the result of applying (27b) to nominal predicate *milk*[6] (Landman 2004, Rothstein 2009).

(27) a. *litre(s)*: $\lambda n \lambda x.\ MEAS^{VOL}(x) = <n, LITRE>$
b. *five litres*: $\lambda x.\ MEAS^{VOL}(x) = <5, LITRE>$
'the set of quantities which measure five litres in volume'
c. *five litres of milk*: $\lambda x.\ MILK(x) \wedge MEAS^{VOL}(x) = <5, LITRE>$
'the set of quantities of milk which measure five litres in volume'

Precise measure functions map their arguments onto points on a scale. They allow for a certain degree of contextually appropriate vagueness (Lasersohn 1999, Krifka 2009, Sauerland & Stateva 2007). We treat approximation

6 We will not usually mark the dimension on the MEAS function due to the issue of readability.

operators as operators that change the value of the measure function from a precise number to a range, encoding the relevant contextual vagueness semantically. An exact measure head like *litre* applies to a number *n* and gives the property of having the measure value indicated by the point on the scale marked by *n*. The related approximate function applies to *n* and gives the property of having a measure value somewhere in the contextually determined range surrounding the point *n* or **focused on *n***. We define this concept in (28a) using a set of intervals that intersect at the focused *n*. (28b) gives the approximate measure function. An approximate measure modifier assigns to a quantity the property of having a measure value *m* located within a contextually restricted interval including the value *n*. Exact and approximative uses of *litre* are illustrated in (29).

(28) a. I_n is a set of intervals focused on a number n if $\forall i \in I, n \in i$.
b. $MEAS_{APPROX}(x)=<I_n, UNIT> \rightarrow \exists i \in I_n : \exists_m \in i: MEAS(x)=<m, UNIT>$

(29) a. $litre_{EXACT}$: $\lambda n \lambda x.\ MEAS^{VOL}(x) = <n, LITRE>$
b. $litre_{APPROX}$: $\lambda n \lambda x.\ MEAS^{VOL}(x) = <I_n, LITRE>$

We assume that explicit approximators such as *about* introduce a shift from exact to approximate values, with different approximators constraining the relation of the range I_n to *n* in different ways. Russian AI triggers this shift as well, but the shift is indicated by word order, rather than lexically. In the following section we will show how this works compositionally for the different types of inverted constructions.

5. The compositional analysis of AI constructions

5.1 AI with explicit measure phrases

This analysis accounts simply for AI constructions such as *litrov pjat' moloka* which are headed by an explicit measure phrase. Inversion within the measure predicate as in (30) indicates a switch from a $measure_{EXACT}$ function (30a) to a $measure_{APPROX}$ function (30b). *Pjat' litrov/litrov pjat'*, like any AP, shifts from a predicate at type <e,t> to the modifier type <<e,t>,<e,t>> and applies to *moloka*. The resulting inverted predicate denotes a set of quantities of milk whose measure value falls in a contextually relevant interval of values focused on 5.

Table 1.1: AI with explicit measure phrase (litrov pjat' 'liters five')

(30)	a.	*pjat' litrov* $_{<e,t>}$:	$\lambda x.MEAS(x) = <5, LITRE>$
		pjat' litrov $_{<<e,t><e,t>>}$:	$\lambda P \lambda x.P(x) \wedge MEAS(x) = <5, LITRE>$
		[pjat' litrov] [moloka]:	$\lambda x.MILK(x) \wedge MEAS(x) = <5, LITRE>$
	b.	*litrov pjat'* $_{<e,t>}$:	$\lambda x.MEAS(x) = <I_5, LITRE>$
		litrov pjat' $_{<<e,t><e,t>>}$:	$\lambda P \lambda x.P(x) \wedge MEAS(x) = <I_5, LITRE>$
		[litrov pjat'] [moloka]:	$\lambda x.MILK(x) \wedge MEAS(x) = <I_5, LITRE>$
		$\forall x\ [MILK(x) \wedge MEAS_{APPROX}(x) = <I_5, LITRE> \rightarrow$ $\exists i \in I_5: \exists m \in i: MEAS(x) = <m, LITRE>]$	

5.2 AI with count nouns

AI examples such as *knig pjat'* 'books five' or *štuk pjat' knig* 'items five of books' are headed by count nouns and count classifiers, which do not normally have a measure interpretation. Their interpretation is more complicated. We follow Rothstein (2013b, to appear) who outlines a theory of 'cardinality scales' that measure along an arbitrary dimension and are calibrated in terms of units determined by a count noun, as in (31).

(31) A cardinality scale S= <⊥, U, N> (Rothstein 2013a):
- a. The dimension is arbitrary.
- b. N is the set of natural numbers.
- c. U is a variable over units.

A count noun such as *book/knig* shifts to a measure head interpretation, in which it gives the unit of calibration. Syntactically, we assume that the inverted nominal is adjoined to the numerical head, and that the lower NP is empty as in (32). We remain agnostic about the nature of the adjunction and whether or not this structure is base-generated. Following Matushansky (this volume), we assume that there are phonological constraints on how heavy the inverted noun can be and that modifiers of the inverted N are extraposed to the right of the empty NP.

(32) $[[N_i\ Num]\ [e]_{NP}]$ [extraposed material]
[[*knig dvadcat'*][e]$_{NP}$] [*dorogix no dejstvitel'no krasivyx*][7]
[[*books twenty*] [e]$_{NP}$] [*expensive but truly beautiful*]

7 The example is from Mel'čuk (1985:151).

Because of its adjoined position, the bare noun *books* is coerced into a measure head *book-unit*$_{APPROX}$ similar to *litre*$_{APPROX}$ as in (33a,b).[8] It applies to a numeral and gives an approximate measure predicate denoting sets of quantities that measure approximately five book-units (33c) and shifts to the modifier type (33d). The empty nominal is interpreted as a null default mass predicate denoting stuff (33e). The measure predicate applies to this null mass noun and gives the predicate in (33f), interpreted as 'approximately five book units of stuff' or 'approximately five books'. Any extraposed material modifies this predicate (34).

Table 1.2: AI with a count noun (knig pjat' 'books five')

(33)	*knig pjat'*		
	a.	*knig = book unit*	
	b.	*book unit*:	$\lambda n \lambda x.MEAS_{APPROX}(x) = <I_n, BOOK>$
	c.	*knig pjat'*:	$\lambda x.MEAS_{APPROX}(x) = <I_5, BOOK>$
	d.	*knig pjat'*:	$\lambda P \lambda x.P(x) \wedge MEAS_{APPROX}(x) = <I_5, BOOK>$
	e.	$\lambda x.STUFF(x)$	
	f.	[*knig pjat'* [NP]]:	$\lambda x.STUFF(x) \wedge MEAS_{APPROX}(x) = <I_5, BOOK>$
(34)	[[*knig pjat'* [NP]] [*dorogix no dejstvitel'no krasivyx*]: $\lambda x.STUFF(x) \wedge MEAS_{APPROX}(x) = <I_5, BOOK> \wedge EXPENSIVE(x) \wedge BEAUTFUL(x)$		

Examples like (34) can also appear with a count classifier, as illustrated in (7). In the 'classifier' version of (34), *štuk pjat' knig* 'items five of (old) books', the count noun is generated in the lower position since the classifier *štuk* occupies the position of the measure head and provides the unit of measure in the measure predicate. However, in order to be modified by the measure predicate, the count noun is reanalyzed as a mass predicate by first shifting to a kind interpretation and then to a set of instantiations of the kind (35).

(35) a. [[*štuk pjat'*] [*knig*]]
b. $\lambda x.\ MEAS_{APPROX}(x) = <I_5, ŠTUK> \wedge$ **Inst (x, BOOK$_{kind}$)**

Rothstein (2011) shows that this shift from count to mass occurs in English when bare plurals are modified by measure phrases as in (36). Crucially, such predicates are compatible with *much*, which applies to mass nouns, and not with *many*, which operates on count nouns.

8 Coercing count nouns into measure units is discussed in Schvarcz (2014) and Rothstein (2013b) chapter 8.

(36) a. *We shipped ten kilos of books.*
b. *Much of the ten kilos of books that we sent remained unread.*
c. *#Many of the ten kilos of books that we sent remained unread.*

This analysis is further supported by AI constructions with paucals. Russian paucal numerals, in standard and AI constructions, take singular complements, while higher numerals take plural complements (37, 38a-c). (38d), from Y&B (1998), shows that when paucal numerals combine with explicit classifiers like *štuk* and nominal complements, only the classifier is singular while the lower nominal complement is plural (38d). Our analysis predicts and explains this pattern. On the assumption that bare plural predicates in Russian can have mass interpretations like their English counterparts, we analyze the lower plural complements in (38d) as mass nouns modified by the measure predicates *štuki tri*.

(37) a. *dva/tri/četyre* *plat'ja* b. *pjat'/desjat'* *plat'jev*
two/three/four dress.gen.sg five/ten plat'jev.gen. pl

(38) a. *My kupili tri plat'ja.*
we bought three dress.gen.sg
'We bought three dresses.'
b. *My kupili plat'ja tri.*
we bought dress.gen.sg three
'We bought *approximately* three dresses.'
c. *My kupili tri krasivyx plat'ja.*
we bought 3 pretty.pl dress.sg
'We bought three pretty dresses.'
d. *My kupili štuki tri krasivyx plat'ev.*
we bought item.sg 3 pretty.pl dresses.pl
'We bought *approximately* 3 pretty dresses.' (Y&B 1998,335)

5.3 Further evidence

Matushansky (this volume) notes that AI constructions with count nouns require much more contextual support (39a, b) than those headed by classifiers (39c) or explicit measure phrases.

(39) [The kidnapper rushed in and to his utter surprise he discovered that…]
a. *bankira okružalo pjat' oxrannikov* (Matushansky, this volume)
banker surrounded five bodyguards
'The banker was surrounded by five bodyguards.'
b. *#bankira okružalo oxrunnikov pjat'*
banker surrounded bodyguards five
'The banker was surrounded by approximately five bodyguards.'
c. *bankira okružalo čelovek pjat' oxrannikov*
banker surrounded people five bodyguards
'The banker was surrounded by approximately five bodyguards.'

This is in line with our analysis in 5.2. To use a count noun as a measure head, the dimensional scale used in the interpretation must be made salient, which naturally requires a lot of contextual support.

Bibliography

Carlson, G. (1977) A Unified Analysis of the English Bare Plural. *Linguistics and Philosophy* 1, 413–457.

Franks, S. (1995) *Parameters of Slavic Morphosyntax*. New York: Oxford University Press

Koptjevskaja-Tamm, M. (2001) A Piece of the Cake and a Cup of Tea: Partitive and Pseudo-partitive Nominal Constructions in the Circum-Baltic Languages. In: O. Dahl & M. Koptjevskaja-Tamm (eds.), *Circum-Baltic languages: Vol. 2. Grammar and typology*. Amsterdam: John Benjamins, 523–568.

Kratzer, A. (1981) The Notional Category of Modality. In: H.J. Eikmeyer & H. Rieser (eds.), *Worlds, Words, and Contexts: New Approaches to Word Semantics*. Berlin: de Gruyter, 38-74.

Kratzer, A. (1991) Modality. In: A. von Stechow & D. Wunderlich (eds.), *Semantik: Ein Internationales Handbuch der zeitgenössischen Forschung*. Berlin: Walter De Gruyter, 639-650.

Krifka, M. (2009) Approximative Interpretation of Number Words: A Case for Strategic Communication. In: E. Henrichs & J. Nerbonne (eds.), *Theory and Evidence in Semantics*. CSLI Publications, 109-132.

Landman, F. (2004) *Indefiniteness and the Type of Sets*. Blackwell.

Lasersohn, P. (1999) Pragmatic Halos. *Language* 75(3), 522-551.

Li, XP. & S.Rothstein. (2012) Measure Readings of Mandarin Classifier Phrases and the Particle *de*. *Language and Linguistics* 13(4), 693-741.

Matushansky, O. (this volume) On Russian Approximative Inversion.

Matushansky, O. & E. Ruys (this volume) Measure for Measure.

Mel'čuk, I. (1980) O Padeže Čislovogo Vyraženija v Russkix Slovosočetanijax Tipa *(bol'še) na dva malčika* ili *po troe bol'nyx*. *Russian Linguistics* 5, 55-74.

Mel'čuk, I. (1985) Poverxnostnyj Sintaksis Russkix Čislovyx Vyraženij'. *Wiener Slawistischer Almanach*. Sonderband 16. Vienna: Institut für Slavistik der Universität Wien.

Partee, B. & V. Borschev (2012) Sortal, Relational, and Functional Interpretations of Nouns and Russian Container Constructions. *Journal of Semantics* 29, 445-486.

Pereltsvaig, A. (2006) Passing by Cardinals: In support of Head-movement in Nominals. In: In J. Lavine et al. (eds.), *Formal Approaches to Slavic Linguistics 14: The Princeton Meeting*. Ann Arbor, 277-292.

Rothstein, S. (2009) Individuating and Measure Readings of Classifier Constructions: Evidence from Modern Hebrew. *Brill Annual of AfroAsiatic Languages and Linguistics* 1, 1-40.

Rothstein, S. (2011) Counting, Measuring and the Semantics of Classifiers. *The Baltic International Yearbook of Cognition, Logic and Communication*. Volume 6 doi:http://dx.doi.org/10.4148/biyclc.v6i0.1582

Rothstein, S. (2013a) Counting, Measuring and the Mass/Count Distinction. Paper presented at the Duesseldorf Workshop on Countability. September 2013.

Rothstein, S. (2013b) *The Semantics of Number*. To appear, Cambridge University Press.

Sauerland, U. & P. Stateva (2007) Scalar *vs.* Epistemic Vagueness. *SALT* 17, 228-245.

Schvarcz, B. (2014) *The Hungarians who say '-nyi': Issues in Counting and Measuring in Hungarian*. MA thesis, Bar-Ilan University.

Stepanov, A. (2001) Late adjunction and minimalist phrase structure. *Syntax* 4(2), 94-125.

Suprun, A. (1962) 'Oboznačenie Netočnyx (približitel'nyx) Količestv pri Pomošči Opredelenno-Količestvennyx Čislitel'nyx'. V kn.: *Voprosy Leksiki i Grammatiki Russkogo Jazyka* [Uč. zapiski filolog. f-ta Kirgizskogo GU, vyp. 8], Frunze: KirgGu, 5-14.

Suprun, A. (1964) *Imja Čislitel'noe i ego Izučenie v Škole*. Moskva: Prosveščenie, 159 str.

Yadroff, M. & L. Billings (1998) The Syntax of Approximative Inversion in Russian. In: *Proceedings of FASL 6*, 319-338

Zaroukian, E. (2012) Approximative Inversion Revisited. In: *Proceedings of FASL 20*.146-160.