Ora Matushansky, CNRS/Université Paris-8/UiL OTS/Utrecht University
email: O.M.Matushansky @uu.nl
homepage: http://www.let.uu.nl/~Ora.Matushansky/personal/

## ON RUSSIAN APPROXIMATIVE INVERSION <br> FDSL 10, Leipzig, December 5-7, 2013

Billings 1995, Fowler 1987, Franks 1994, 1995, Isakadze 1998, Mel'čuk 1985, Pereltsvaig 2006a, b, Yadroff and Billings 1998, Zaroukian 2012: approximative inversion reverses the normal linear order between a cardinal and a noun with the semantic effect of speaker uncertainty as to the exact quantity:
(1)
a. pjat' časov
five hour-GEN.PL
five hours
b. časov pjat'
hour-GEN.PL five
about five hours
Two questions arise:
$>$ what syntactic structure underlies approximative inversion?
$>\quad$ how is the uncertainty effect derived?
This talk: approximative inversion is derived by NP (remnant) movement conditioned by a number of concurrent information structure effects and crucially involves the novel feature [measure]

## 1. Preconditions on approximative inversion

Billings 1995, Yadroff and Billings 1998: approximative inversion involves movement of the special functional head Meas ${ }^{\circ}$ (where $\mathrm{N}^{\circ}$ has moved)
Our proposal: approximative inversion is conditional on the numeral NP denoting a measure (degree), as proposed by Matushansky and Ruys 2012, 2013 for Russian numeral NP subjects that trigger the default agreement on the predicate:
a. Pjat' krasivyx devušek prišli.
five beautiful-GEN.PL girls-GEN.PL arrived-PL
Five beautiful girls arrived.
b. Prišlo pjat' krasivyx devušek. arrived-NSG five beautiful-GEN.PL girls-GEN.PL There arrived five beautiful girls.
Evidence (beyond interpretation):
> approximative inversion in the subject position: obligatory default agreement
> animacy: in approximative inversion animate nouns behave as inanimates
When the numeral NP complement of an accusative-assigning preposition denotes a quantity, the numeral NP declines as if it were inanimate:
a. siloj rovno v tri medvedja
strength-INS exactly in three-ACC=NOM bear-PAUC as strong as exactly three bears
b. bol'še na dva mal'čika
more on two-ACC=NOM boy-PAUC
two boys more

Mel'čuk 1980 crucially demonstrates that the lexical noun retains its inherent (in)animacy Approximative inversion also requires inanimate case-marking (Franks 1995:167):
a. Ja videl soldata cetyre.
I saw soldier-GEN.PL four-ACC.PL=NOM.PL
I saw about four soldiers.
b. *Ja videl soldat cetyrëx.

I saw soldier-ACC.PL=GEN.PL four-ACC.PL=GEN.PL
Approximative inversion disallows plural agreement (Pereltsvaig 2006a, Yadroff and Billings 1998):

Attested counterexamples are all conditional on the presupposition of the existence of a larger set and involve a preverbal subject, which also facilitates a performance error in number agreement (see Eberhard 1997, Franck et al. 2006, Franck et al. 2002, Gillespie and Pearlmutter 2013, Nicol 1995 for references and discussion)
(5) V ètom restorane obedalo /*obedali celovek desjat'. Pereltsvaig 2006b in this restaurant dined-NSG dined-PL people ten In this restaurant dined approximately ten people.
Both facts are explained if approximative inversion NPs are not syntactically plural

## 2. THE STRUCTURE OF APPROXIMATIVE INVERSION

### 2.1. Movement or base generation?

Lower cardinals appear with the lexical NP in the paucal form (generally identical to genitive singular) rather than in the genitive plural form:
(6)
$\begin{array}{ll}\text { a. } & \text { tri časA } \\ \text { three hour-PAUC } \\ \text { three hours }\end{array}$
b. časA tri
hour-PAUC three
about three hours
The paucal form does not appear in the genitive-initial emphatic-thematic inversion (Mel'čuk 1985, House 1982), which does not have the same interpretation:
a. My različaem rovno tri takix slučaja. Billings 1995
we distinguish exactly three-ACC such occurrence-PAUC=GEN.SG
We distinguish exactly three such occurrences.
b. My različaem takix slučajev rovno tri. we distinguish such occurrence -GEN.PL exactly three-ACC
c. Takix slučajev my razlicaem rovno tri. such occurrence-GEN.PL we distinguish exactly three-ACC
Therefore, genitive-initial inversion cannot arise from movement (see Polinsky and Potsdam 2012 for a similar argument in a different paradigm)
Further evidence: approximative inversion with complex cardinals, where base-generating the moved element in its surface position seems highly unlikely:
a. Millionov
pjat' rublej $\quad \mathrm{v}$ god oborota u
menja est'.
million-GEN.PL five rubles-GEN.PL in year turnover-GEN at me is
$I$ have the turnover of about 5 million rubles a year.

| b. tysjač | sorok | rabočix |
| :--- | :--- | :--- |
| thousands-GEN.PL forty | worker-GEN.PL |  |
| about 40,000 workers |  |  |

Further evidence: Fowler 1987 (which I haven't been able to obtain yet)

### 2.2. The structure of a numeral NP

Ionin and Matushansky 2004, 2006: complex cardinals are constructed in syntax
(9)
a.
NP

multiplication
b. ConjP addition


The radically different structures for multiplication and addition correctly account for their differing behavior with respect to approximative inversion:

| a. rabočix sorok | pjat' |
| :--- | :--- |
| worker-GEN.PL forty |  |
| about 45 workers |  | about 45 workers

b. tysjač sorok rabočix
thousands-GEN.PL forty worker-GEN.PL about 40,000 workers
More conventional theories, treating complex cardinals as either lexical heads or as specifiers cannot account for this distinction structurally

### 2.3. What moves?

Two structures: head-movement (Franks 1995, Pereltsvaig 2006a, Yadroff and Billings 1998) vs. NP-movement (Billings 1995, Zaroukian 2012)
Evidence for head-movement: the single-word constraint:

$\begin{array}{llll}\text { a. } & \text { izobraženij } & \text { desjat' } & \text { britanskogo flaga } \\ \text { pictures-GEN } & \text { ten } & \text { British-GEN flag-GEN }\end{array}$ approximately ten pictures of the British flag
b. *izobraženij britanskogo flaga desjat' pictures-GEN British-GEN flag-GEN ten

| (13) a.tri čajnyx ložki  <br> three tea-ADJ-GEN-PL spoon-PAUC=GEN-SG  <br>  three teaspoons |  |
| :---: | :--- |
| b. | * čajnyx ložki |
|  | tea-ADJ-GEN-PL spoon-PAUC=GEN-SG three |

Problem for the NP movement analysis: the single-word constraint.
Solution: a prosodic constraint (Billings 1995)

### 2.3.1. The single-word constraint

Billings 1995: Russian has a syntactic constraint restricting certain positions (the complement of the approximative preposition $s$ 'with, off', in particular) to a single "syntactic word". The single-word constraint on the approximative inversion is a special case (restricted to prosodic words)
Novel evidence: words with secondary stress and co-compounds:
(14) a. otolagingologov ( $\checkmark$ [ətələringóləgəv]/*[òtələringóləgəv]) sorok
otolaryngologist-PL.GEN forty
some 40 otolaryngologists
b. *divanov-krovatej desjat'
sofa-GEN.PL-bed-GEN.PL ten
some ten sofa beds
The neutralized realization of [ o ] shows that the absence of secondary stress is a precondition on approximative inversion
The prosodic constraint on approximative inversion also explains more complex cases:
(15) *mal'čikov i devoček sorok boys-GEN and girls-GEN forty
Assuming that the coordination of heads is possible, a prosodic constraint is necessary

### 2.3.2. Remnant NP movement in approximative inversion

Problems for the head-movement analysis:
$>$ light adjectives cannot be stranded
$>$ multiple NP modifiers are impossible
> prosodically heavy nouns cannot be fronted
Franks 1995, Mel'čuk 1985, Pereltsvaig 2006a, Yadroff and Billings 1998: APs stranded by approximative inversion must be complex, stressed or coordinated:

a. $\stackrel{\text { ?"knig }}{\text { books-GEN ten }} \quad$ desat' | interesnyx |
| :--- |
| interesting-GEN |

b. knig desjat' INTERESNYX books-GEN ten interesting-GEN approximately ten interesting books
NP-movement explanation: they have to be extraposed prior to NP movement
(17) a. Knigi, starinnye i očen' dorogie, valjalis' po vsemu domu. books antique and very expensive were.scattered over entire house Books, antique and very expensive, were scattered all over the house.
b. "Knigi, starinnye, valjalis' po vsemu domu. books antique were.scattered over entire house Books, antique ones, were scattered all over the house.

As NP-internal right-extraposition is much easier than for PPs than for APs, stranded PPs are (correctly) predicted to not be so constrained
Prediction: non-intersective APs cannot appear in approximative inversion:
a. *mil’ desjat' morskix
miles-GEN ten nautical-GEN
b. *let sorok svetovyx
years-GEN forty light.ADJ-GEN

Russian non-intersective/relational adjectives only appear postnominally under very specific conditions (see Trugman 2010), which are not met here
Multiple NP modifiers are correctly predicted to be impossible:

b. *knig desjat' po fizike interesnyx books-GEN ten about physics interesting-GEN
a. *izobraženij desjat' aljapovatyx britanskogo flaga pictures-GEN ten sloppy-GEN.PL British-GEN flag-GEN
b. *izobraženij desjat' britanskogo flaga aljapovatyx pictures-GEN ten British-GEN flag-GEN sloppy-GEN.PL
NP-internal right-extraposition doesn't seem to be subject to reiteration:
(21) *izobraženija, starinnye i očen' dorogie, britanskogo flaga pictures antique and very expensive British-GEN flag-GEN

Summary: NP dependents "stranded" by approximative inversion have been extraposed

### 2.4. Approximative inversion with complex cardinals

Roughly, in complex cardinals involving multiplication the first multiplicand is targeted:

| a. tysjač | sorok mašin |  |
| :--- | :--- | :--- |
| thousands-GEN | forty | cars-GEN |

b. *mašin sorok tysjač cars-GEN forty thousands-GEN

If a complex cardinal is itself a head ( $\mathrm{Num}^{\circ}$ or $\mathrm{Q}^{\circ}$, cf. Pereltsvaig 2006a), excorporation out of it should be impossible.
If a complex cardinal is merged in [Spec, NumP] (cf. Yadroff and Billings 1998), both the lexical category and the structural position of the multiplicand differ from that of the lexical noun, and the two are not expected to be attracted to the same position by the same trigger.

If a complex cardinal is merged in a cascade structure (cf. Ionin and Matushansky 2006), the lexical NP is a complement of the cardinal. Complements can be stranded by approximative inversion:
(23)
a. izobraženij desjat' britanskogo flaga pictures-GEN ten British-GEN flag-GEN approximately ten pictures of the British flag
b. prezidentov vosem' raznyx gosudarstv
presidents-GEN eight different-GEN.PL states-GEN
about eight presidents of different states
...but they must be "heavy":
a. $\begin{gathered}\text { *izobraženij } \\ \text { pictures-GEN }\end{gathered}$
desjat' flagov
ten flag-GEN-PL
b. *prezidentov vosem' Francii
presidents-GEN eight France-GEN

So no syntactic approach to complex cardinals seems to allow for approximative inversion
Stipulation: "heaviness" is relative rather than absolute: the stranded/extraposed NP or PP must only be "heavier" than the head: a cardinal is both informationally and prosodically light
Confirmation: measure nouns can be inverted even when they have a "light" complement:
a. litrov vosem' moloka
liters-GEN eight milk-GEN
about eight liters of milk
b. kilogramma tri muki
kilogram-PAUC=GEN-SG three flour-GEN
about three kilograms of flour
c. funta dva ego [zolota]
pound-PAUC=GEN-SG two it-GEN gold-GEN
about two pounds of it (gold)
Possible alternative: cardinals and measure nouns combine with their sisters by adjunction rather than complementation -- still requires a stipulation
Summary: a prosodic constraint on the fronted element is independently motivated, and so a head-movement analysis has no advantage here. The head-movement view does not explain why stranding involves extraposition. The XP movement view needs further assumptions to account for the lack of evidence for extraposition in approximative inversion involving complex cardinals or measure nouns.
a.

MeasP


What triggers approximative inversion?
Billings 1995: the relevant operator is null, and so must be licensed by a filled specifier

### 2.5. The information structure of approximative inversion

Further evidence for a remnant movement treatment of approximative inversion comes from the differing information structure status of different parts of the NP.

Stranded NPs and APs have to be contrastive or heavy.
While in a regular numeral NP the cardinal may be de-stressed, with approximative inversion it is impossible: it must be in (broad or narrow) focus.
The inverted noun must also be given/in the common ground/salient...:
(27) [When the kidnapper rushed into the study, to his utter surprise he discovered that...]
a. bankira okružalo [pjat' oxrannikov].
banker-ACC surround-PAST-NSG five-NOM bodyguard-GEN.PL
The banker was surrounded by five bodyguards.
b. \#bankira okružalo [oxrannikov pjat'].
banker-ACC surround-PAST-NSG bodyguard-GEN.PL five-NOM
c. bankira okružalo [čelovek pjat' oxrannikov]. banker-ACC surround-PAST-NSG person-GEN.PL five-NOM bodyguard-GEN.PL The banker was surrounded by approximately five bodyguards.

Assuming that bodyguards have not been made salient by the preceding context, (27b) cannot be used. Instead, the alternative approximative inversion construction, with a classifier-like element (čelovek 'people' for humans, golov 'heads' for cattle and štuk 'items' for inanimates, see Sussex 1976, Yadroff 1999), as in (27c), must be used.
Aikhenvald 2000 argues that these items are not real classifiers; see Kagan and Pereltsvaig 2012 for objections. Their behavior in approximative inversion strongly suggests that they are in fact measure nouns; strikingly, even the lexically animate čelovek is obligatorily inanimate.
Measure nouns, which are naturally part of Common Ground in the context of measuring the event, are naturally appropriate with approximative inversion: the vast majority of the many examples of approximative inversion in Mel'čuk 1985:148-155 involves measure nouns and "classifiers".

Conclusion: for the success of approximative inversion, everything but the cardinal is moved out of the scope of the approximative operator (which clearly associates with focus)

### 2.6. Ban on further extraction

Puzzle: the NP fronted by approximative inversion cannot be moved any further:
a. V gorode bylo cerkvej pjat'. in city was-NSG church-GEN.PL five There were maybe five churches in the city.
b. Cerkvej v gorode bylo pjat'. precise quantity only church-GEN.PL in city was-NSG five There were five churches in the city.
Polinsky and Potsdam 2012: Russian has two types of left-edge topicalization with numerals: hanging topic (no movement) and scrambling ( $\mathrm{A}^{\prime}$-movement):
a. $\quad \begin{aligned} & \text { Sobor-a } \\ & \text { cathedral-PAUC in town }\end{aligned}$
was tri sebor a.
wree-PAUC cathedral-PAUC in town was three-PAUC
As for cathedrals, there were three in that town.
b. Sobor-ov v gorodke bylo tri pro. cathedral-GEN.PL in town was three-PAUC As for cathedrals, there were three in that town.

Hypothesis: further extraction out of approximative inversion structures is blocked by their information structure.
Measure NPs cannot be easily split:
a. My kupili pjat' kilogrammov jablok. we bought five kilogram-GEN.PL apple-GEN.PL We bought five kilograms of apples.
b. *Kilogrammov my kupili pjat' jablok. kilogram-GEN.PL we bought five apple-GEN.PL
c. *Kilogrammov jablok my kupili pjat'. kilogram-GEN.PL apple-GEN.PL we bought five
a. My ždali pjat' časov. we waited five hour-GEN.PL We waited for five hours.
b. ČASOV/*časov my ždali pjat'. hour-GEN.PL we waited five If you count in hours, then we waited for five hours.
Split measure NPs are only possible if the fronted measure NP is interpreted as a contrastive topic. The resulting interpretation, however, does not appear to be pragmatically compatible with speaker uncertainty, since the stranded cardinal has to function as a contrastive focus.

## 3. THE ROLE OF [MEASURE] AND PHI

Approximative inversion is constrained with respect to both the cardinals that can trigger it and the cardinals that can undergo it

### 3.1. Excluded triggers

The adjectival cardinal odin 'one' cannot trigger approximative inversion either by itself or as part of a complex cardinal:
(32) *kilogramm/*kilogrammov (dvadcat') odin kilogram.SG/kilogram-GEN.PL twenty one
Movement is blocked: an adjectival cardinal does not introduce an intervening head, and the complement of Meas ${ }^{\circ}$ (one kilogram) cannot be attracted to [Spec, MeasP] (cf. Abels 2003).
The higher (more noun-like) cardinals starting with million also cannot trigger approximative inversion; nor can fractions with the exception of polovina 'half' (Mel'čuk 1985:150):

| * knig | (èdak) | $(\mathrm{s})$ |
| :--- | :--- | :--- |
| book-GEN.PL | so | million |
| with/about million |  |  |

a. litra tri s polovinoj liter-PaUC three with half three and a half liters

|  | *litra/*litrov | tri three | with | tretju |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | liter-PAUC/GEN.PL |  |  |  |  |
| c. | * litra/*li |  |  |  | vos'myx |
|  | liter-PAUC/GEN.PL | thre | and |  | eighth |

Contrary to the first impression, this is not about million being nominal, as numerical nouns allow approximative inversion:

```
a. godov čerez desjatoček year-GEN.PL across ten.N-DIM-ACC in about 10 years
```

b. Tak prošli oni šagov sotnju. so passed they step-GEN.PL hundred.N-ACC And so they walked for about 100 steps.

The cardinal thousand does not easily trigger approximative inversion in oblique cases, and names of hundreds are strongly dispreferred in dative and instrumental cases: nothing to say.

### 3.2. Excluded targets

Although cardinals denoting tens and hundreds are written as a single word, it is easy to show that they are syntactically complex:
a. statja pro pjat'.sot akul article about five.hundred-GEN.PL sharks-GEN.PL an article about/on 500 sharks
b. opisanie pjati.sot akul
description five-GEN.hundred-GEN.PL sharks-GEN.PL a description of 500 sharks
c. pomošč pjati.stam akulam aid five-DAT.hundred-DAT.PL sharks-DAT.PL aid to 500 sharks
d. s pjatju.stami akulami
with five-INS.hundred-INS.PL sharks-INS.PL with 500 sharks

The cardinals ten and hundred cannot invert, the corresponding numerical noun must be used instead:
a. *stami s pjatju akulami
hundred-INS.PL with five-INS sharks-INS.PL
b. sotnjami s pjatju akul
hundred.N-INS.PL with five-INS sharks-GEN.PL
with some 500 sharks
Intuition: the cardinal cline (cf. Hurford 2003)

### 3.3. Cardinals and measures

Hurford 1975, 1987: cross-linguistically, the lowest cardinals are the most adjectival, whereas the highest cardinals are fully nominal
Assumption: Meas ${ }^{\circ}$ bears not only a set of uninterpretable phi-features, but also the feature of [measure], attracting to its specifier a measure NP

All cardinals bear an interpretable [measure] feature, which they share with nouns denoting units of measure

The lower cardinals (2-100) do not have a complete set of phi-features and therefore cannot be attracted themselves, but as they project as heads, their NP complement can be attracted to [Spec, MeasP] (unless the head of their complement is itself a lower cardinal (tens, hundreds) and lacks some phi-features
To be more precise, the cardinal dva/dve 'two' agrees for gender with its sister and the paucal cardinals 2-4 agree for animacy, but it can be reasonably assumed that none of them are specified for [number]. All other cardinals can be reasonably hypothesized to lack both [gender] and [animacy]
The cardinals million and higher are all fully nominal (Mel'čuk 1985:295-304), thus bearing both [measure] and a full set of phi-features. However, they cannot check the uninterpretable [measure] and phi-features of Meas ${ }^{\circ}$ if they head its complement (a complement cannot be attracted to the specifier, cf. Abels 2003) and also act as interveners blocking the attraction of their own (NP) complement:


The word tysjača 'thousand' is ambiguous between a cardinal and a measure noun (Mel'čuk 1985), meaning that it may be specified only for [measure] (as a non-intervener) or also for [gender] (as a possible target). The same treatment can be assumed for polovina 'half'.
Mel'čuk 1985:289-294 demonstrates that tysjača 'thousand' only functions as a cardinal when not preceded by a multiplier; when functioning as a multiplicand, it is invariably nominal

## 4. Further questions

### 4.1. The semantics of approximative inversion

Approximative inversion "expresses the speaker's uncertainty about (or non-committal to, or distancing from) the cardinality involved" (Pereltsvaig 2006a, cf. Mel'čuk 1985:157)
Mel'čuk's precision scenario: in the context of a birthday, approximation strategies other than approximative inversion cannot be used when discussing the age of the principal:
a. Let tridcat'.
b. \#Priblizitel'no
tridcat' (let).
c. \#30-35 let. years thirty approximately thirty years 30-35 years Approximately thirty years.
Reinterpretation: crucial in this situation is that one "is not rounding the number of years up or down, but rather expresses her uncertainty about the [colleague's] age (which is an integer in this situation, not a fraction)" (Pereltsvaig 2006a)

Scenario: speculating if a particular boy has already had his bar mitzvah (a Judaic coming-ofage ceremony, which takes place at thirteen): "well, he could have,...":
(40) a. \#Emu uže let trinadcat'.
he-DAT already years-GEN thirteen
He is already some thirteen years old.
b. Emu uže okolo trinadcati (let). he-dAT already around thirteen-GEN years-GEN He is already about thirteen years old.
Approximative inversion is compatible with other types of approximation:
a. Provel ja tam dnej primerno pjat'.

Mel'čuk 1985:153 spent I there day-GEN.PL approximately five I spent some five days there.
b. rublej okolo pjatisot

Mel'čuk 1985:157 ruble-GEN.PL about five.hundred-GEN some 500 rubles
c. Da pudov èdak pjat' ili šest'.

EMPH pood-GEN.PL so five or six
Well, perhaps some five or six poods. (pood $=36 \mathrm{lb}$ avoirdupois)
As the translations show, approximative inversion behaves like approximation with some (Anderson 2013, Duffley and Larrivée 2012; cf. Alonso-Ovalle and Menéndez-Benito 2010, Farkas 2002 for implementations of the epistemic non-specificity of some):
(42) a. Bill looked and saw a group of some fifteen people enter.

Anderson 2013
b. Some 30 to 40 people showed up.

Crucial: Russian does not allow some to be so used (different interpretation):
(43) kakix-to dvadcat' minut
some twenty minutes
a meager 20 minutes
[This is a meaning that is also used with kind modification to yield a pejorative]

### 4.2. Approximative inversion with PPs

In a PP the inverted noun moves to position before the preposition if the preposition is "light" or primary (Billings 1995, Franks 1995, Mel'čuk 1985, etc.):
a.
za tri časA
for three hour-PAUC in three hours
b. ${ }^{\%}$ za časA tri for hour-PAUC three in about three hours
c. časA za tri hour-PAUC for three in about three hours
a. otnositel'no tridcati očkov regarding thirty-GEN points-GEN regarding thirty points
b. otnositel'no očkov tridcati regarding points-GEN thirty-GEN regarding approximately thirty points
c. *očkov otnositel'no tridcati points-GEN regarding thirty-GEN regarding approximately thirty points
(45) a. čerez tri časA for three hour-PAUC in three hours
b. ${ }^{\%}$ čerez časA tri for hour-PAUC three in about three hours
c. časA čerez tri hour-PAUC for three in about three hours
(47) a. spustja tri časA after three hour-PAUC after three hours
b. spustja časA tri after hour-PAUC three after about three hours
c. *časA spustja tri hour-PAUC after three after about three hours

The preposition need not be mono- or disyllabic to trigger approximative inversion, but only one exception is known: okolo 'around' in its approximative meaning; it also forms a prosodic word and bears its own stress
The preposition itself can be preceded by a modifier (Mel'čuk 1985:153):
The adverb èdak/ètak 'so' triggers obligatory approximative inversion

| a. $\quad$Produktov u nas ostalos' <br> provisions-GEN with us remained-NSG day-GEN-PLtol'ko <br> only | na pat'. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| on | five |

b. Da pudov èdak pjat' ili šest'.

EMPH pood-GEN.PL so five or six
Well, perhaps some five or six poods. (pood $=36 \mathrm{lb}$ avoirdupois)
Zaroukian 2012: the head-movement approach incorrectly rules out these structures, as the preposition, being itself a head, should act as an intervener

### 4.3. Alternative proposals

Franks 1995: $\mathrm{N}^{\circ}$-to- $\mathrm{Q}^{\circ}$, raising problems for his analysis (no solution proposed)
Yadroff and Billings 1998 and Pereltsvaig 2006a, b: a modal/evidential head in the extended NP bears a functional feature marking speaker uncertainty, which can be checked by the movement of the noun:


Zaroukian to appear: assuming the presence of a modal/evidential head in the extended NP (Yadroff and Billings 1998 and Pereltsvaig 2006a, b) gives rise to incorrect predictions with respect to the scope of speaker uncertainty. If speaker uncertainty is a formal feature that can be checked by the movement of the noun (Yadroff and Billings 1998 and Pereltsvaig 2006a, b), the noun rather than the cardinal is predicted to be interpreted as something that the speakers not sure about. Conversely, if it is interpreted as an operator, then NP modifiers in (11) and (12) should remain in its scope, contrary to fact -- an issue that can be avoided by hypothesizing extraposition of the NP modifier, as above.
Billings 1995: a single-word NP moves to a specifier position in the extended NP to license a null approximative operator

### 4.4. The myth of the direct-case constraint

Franks 1995, Isakadze 1998, Pereltsvaig 2006a, b, Yadroff 1999: approximative inversion is only possible in direct cases (nominative and accusative):
NB: Franks 1995:172 claims that oblique NPs not introduced by a preposition disallow approximative inversion if they are arguments, but not if they are adjuncts
a. *Direktor upravljaet fabrikami pjat'ju.

Franks 1995:167 director manages factories-INS five-INS The director manages about five factories.
b. *On vladeet jazykami pjat'ju.
he possesses languages-INS five-INS
He speaks about five languages.
c. *Ivan boitsja čelovek pjati.

Ivan fears people-GEN five-GEN Ivan fears about five people.
d. *On dal podarki devuškam pjati.
he gave presents girls-DAT five-DAT He gave presents to about five girls.
Pereltsvaig 2006a, b links this to the fact that in direct-case positions the lexical NP appears in the case assigned by the cardinal.
For this heterogeneous pattern of case-marking the cardinal is assumed to be a maximal projection rather than a head (Bailyn 2004), while for the homogenous pattern arising in oblique cases the cardinal is assumed to be a head and therefore an intervener for approximative inversion.
This generalization is empirically wrong: though approximative inversion is predominantly used in NPs assigned nominative, accusative or genitive, other cases, though dispreferred, are not excluded:

$$
\begin{equation*}
\text { a. kilogrammam } \mathrm{k} \quad \text { pjati } \tag{51}
\end{equation*}
$$

Mel'čuk 1985:154
kilogram-DAT.PL towards five-DAT.PL
towards approximately five kilograms
b. nedel' okolo dvux

Mel'čuk 1985:152
week-GEN.PL around two-GEN.PL
around approximately two weeks
(52) Ja vernus' časam $k$ pjati.

Isakadze 1998:78
I come.back-PRF hours-DAT towards five-DAT
I will come back at around five o'clock.
a. Cena takogo približaetsja tysjačam k četyrëm, navernoe... Price such-GEN approaches thousands-DAT towards four-DAT maybe The price of something like this approaches some four thousand, perhaps.
b. A byl by po.skromn-ee, ograničilsja by tonnami desjat'ju [...] and was COND ATT.modest-COMP restricted.self COND tons-INS ten-INS And had he been more modest, restricted himself to some 10 tons...
c. Naprimer, tropičeskij ostrov, tysjačax v desjati mil' otsjuda. for.instance tropical island, thousands-LOC in ten-LOC miles-GEN from.here For instance, a tropical island some 10,000 miles from here.
Why are the approximative inversion examples from Franks' (1995) and Pereltsvaig's (2006b) ungrammatical?
Hypothesis: approximative inversion depends on a particular structure and/or the concurrent interpretation of the numeral NP (a bare QP rather than a DP, according to Pereltsvaig 2006a, b, measure or degree, according to Matushansky and Ruys 2012, 2013), which is unavailable in these contexts.

## 5. BIBLIOGRAPHY

Abels, Klaus. 2003. Successive cyclicity, anti-locality and adposition stranding, Doctoral dissertation, University of Connecticut.

Aikhenvald, Alexandra Y. 2000. Classifiers: A Typology of Noun Categorization Devices. Oxford: Oxford University Press.

Alonso-Ovalle, Luis, and Paula Menéndez-Benito. 2010. Modal indefinites. Natural Language Semantics 18:1-31.
Anderson, Curt. 2013. Approximation of complex numerals using some. Paper presented at WECOL/AZLS 2013, Arizona State University, November 8-10, 2013.
Bailyn, John. 2004. The Case of Q. In Formal Approaches to Slavic Linguistics \#12, ed. by Olga Arnaudova, Wayles Browne, Maria-Luisa Rivero and Danijela Stojanovic, 1-36. Ann Arbor, Michigan: Michigan Slavic Publications.
Billings, Loren Allen. 1995. Approximation in Russian and the single-word constraint, Doctoral dissertation, Princeton University. Princeton.
Duffley, Patrick J., and Pierre Larrivée. 2012. Exploring the relation between the qualitative and quantitative uses of the determiner some. English Language and Linguistics 16:131-149.
Eberhard, Kathleen M. 1997. The marked effect of number on subject-verb agreement. Journal of Memory and Language 36:147-164.

Farkas, Donka. 2002. Varieties of indefinites. In Semantics and Linguistic Theory (SALT) 12, ed. by Brendan Jackson, 59-83: eLanguage.
Fowler, George. 1987. The syntax of the genitive case in Russian, Doctoral dissertation, University of Chicago.

Franck, Julie, Glenda Lassi, Ulrich H. Frauenfelder, and Luigi Rizzi. 2006. Agreement and movement: a syntactic analysis of attraction. Cognition 101:173-216.
Franck, Julie, Gabriella Vigliocco, and Janet L. Nicol. 2002. Subject-verb agreement errors in French and English: The role of syntactic hierarchy. Language and Cognitive Processes 17:371-404.

Franks, Steven. 1994. Parametric properties of numeral phrases in Slavic. Natural Language \& Linguistic Theory 12:597-674.
Franks, Steven. 1995. Parameters of Slavic Morphosyntax. Oxford: Oxford University Press.
Gillespie, Maureen, and Neal J. Pearlmutter. 2013. Against structural constraints in subjectverb agreement production. Journal of Experimental Psychology: Learning, Memory, \& Cognition 39:515-528.
House, Richard. 1982. The Use of Genitive Initial Sentences for the Specification of Quantity in Russian, Doctoral dissertation, Cornell University.
Hurford, Jim. 1975. The Linguistic Theory of Numerals. Cambridge: Cambridge University Press.

Hurford, Jim. 1987. Language and Number: the Emergence of a Cognitive System. Oxford: Blackwell.

Hurford, Jim. 2003. The interaction between numerals and nouns. In Noun Phrase Structure in the Languages of Europe, ed. by Frans Plank. Typology of Languages in Europe, 561-620. The Hague: Mouton de Gruyter.
Ionin, Tania, and Ora Matushansky. 2004. A singular plural. In WCCFL 23: Proceedings of the 23rd West Coast Conference on Formal Linguistics, ed. by Benjamin Schmeiser, Vineeta Chand, Ann Kelleher and Angelo Rodriguez, 399-412. Stanford: CSLI.

Ionin, Tania, and Ora Matushansky. 2006. The composition of complex cardinals. Journal of Semantics 23:315-360.
Isakadze, N. V. 1998. Otraženie morfologii i referencial'noj semantiki imennoj gruppy v formal'nom sintaksise, Doctoral dissertation, Moscow State University.
Kagan, Olga, and Asya Pereltsvaig. 2012. Adjectives in layers. Ms., Ben-Gurion University/Stanford.

Matushansky, Ora, and E.G. Ruys. 2012. Numeral NPs, to a degree. Paper presented at RALFe 2012, Université Paris VIII, Saint-Denis, November 29-30, 2012.
Matushansky, Ora, and E.G. Ruys. 2013. Treating (some) indefinites as degrees. Paper presented at FDSL 10, Leipzig, November 5-7, 2013.
Mel'čuk, Igor. 1980. O padeže čislovogo vyraženija v russkix slovosočetani'x tipa (bol'še) na dva mal'čika ili po troe bol'nyx. Russian Linguistics 5:55-74.
Mel'čuk, Igor. 1985. Poverxnostnyj sintaksis russkix čislitel'nyx vyraženij. Wiener slawistischer Almanach. Sonderband 16. Vienna: Institut für Slawistik der Universität Wien.

Nicol, Janet L. 1995. Effects of clausal structure on subject-verb agreement errors. Journal of Psycholinguistic Research 24:507-516.
Pereltsvaig, Asya. 2006a. Passing by cardinals: In support of head movement in nominals. In Proceedings of FASL 14: The Princeton Meeting, ed. by James Lavine, Steven Franks, Mila Tasseva-Kurktchieva and Hana Filip, 277-292. Ann Arbor, Michigan Michigan Slavic Publications.
Pereltsvaig, Asya. 2006b. Small nominals. Natural Language \& Linguistic Theory 24:433500.

Polinsky, Maria, and Eric Potsdam. 2012. Left edge topics in Russian and the processing of anaphoric dependencies. Ms., Harvard University \& University of Florida.

Sussex, Roland. 1976. The numeral classifiers of Russian. Russian linguistics 3:145-155.
Trugman, Helen. 2010. Modifiers of bare nouns in Russian. In Formal Studies in Slavic Linguistics: Proceedings of Formal Description of Slavic Languages 7.5, ed. by Gerhild Zybatow, Philip Dudchuk, Serge Minor and Ekaterina Pshehotskaya, 245267. Frankfurt: Peter Lang.

Yadroff, Michael. 1999. Formal properties of functional categories: The minimalist syntax of Russian nominal and prepositional expressions, Doctoral dissertation, Indiana University.
Yadroff, Michael, and Loren Billings. 1998. The syntax of approximative inversion in Russian (and the general architecture of nominal expressions). In Proceedings of the 6th Annual Workshop on Formal Approaches to Slavic Linguistics: The Connecticut Meeting 1997, ed. by Zeljko Bošković, Steven Franks and William Snyder, 319-338. Ann Arbor, Michigan: Michigan Slavica Publications.
Zaroukian, Erin. 2012. Approximative inversion revisited. In Formal Approaches to Slavic Linguistics 19: the College Park Meeting, ed. by John Bailyn, Ewan Dunbar, Yakov Konrad and Chris LaTerza, 146-160. Ann Arbor, Michigan: Michigan Slavic Publications.
Zaroukian, Erin. to appear. Approximative inversion revisited. In Proceedings of FASL 19.

