SCALARITY AND QUANTITATIVE CONSTRUCTIONS IN RUSSIAN AND KOREAN

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In this paper, we will discuss the data on numeral constructions and intensifier/ approximation/ quantity adverb constructions in Russian and Korean, and briefly in other typologically divergent languages. In section 1, we sketch concepts of quantitative scales and implicatures, associated with numerals and quantitative constructions; in section 2, we present an overview of a number of classical and recent works on scalar implicature and on scalar constructions in various languages; in section 3, the data on Russian and Korean scalar constructions and expressions are presented. The applicability of the concepts of scalarity, scalar implicature, and related to Russian and Korean data are discussed.

1. *Introduction*

The concepts of scalarity, scale, scalar implicature, and the main problems connected with scalarity will be described in the introduction. The most well-studied phenomena cross-linguistically are adjective and comparative constructions (e.g. Kennedy 2001, Sharvit & Stateva 2002, Burazovska 2005, Sosenskaja 1999a, Chung 1999, Oh 2003, and others), end-of-scale particles and constructions (e.g. Karttunen & Peters 1979, Krejdlin 1975, Padučeva 1977, Boguslavsky 1985, Kibrik & Bogdanova 1995, Tovena 2005, Lee 2000, 2006a-b, Lee, Chung & Nam 2000, J. Lee 2006, and others), and scalar implicature (e.g. Horn 1972, 1989, 2004, Chierchia 2004, Sauerland 2004, and others).

Numerals and quantity markers/ constructions can be accounted for in terms of the category of quantification. As many of the authors mentioned above (in the first place, Horn) note, this category is best analyzed

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in terms of a (quantity) scale[1], so that the quantified substance/ objects are 'assigned' some place (or segment) at this scale, and its/their place is compared to a 'normal'/ expected quantity of these objects.

According to Horn (1989: 214-215, 2004: Ch. 4), numerals, like the existential quantifier *some*, induce a (conversational) scalar implicature based on Grice's Quantity Maxim[2]. *Some* has the "not all" implicature, whereas a numeral *n* has the "at most *n*" implicature. In other terms, "at least *n*" belongs to the conventional meaning of *n*, but "at most *n*"/ "no more than *n*" is implicated. As a result, two understandings of a numeral phrase in (1) from Horn (1989: 251) are related via implicature: if the scalar implicature is applied to the understanding (1'), the understanding (1'') emerges.

(1) Do you have two children?
(1') 'Do you have at least two children?' [at least two children]
(1'') 'Do you have exactly two children?' [exactly two children (at least and at most two children)]

The question of whether the "at most *n*" implicature in (1) can be canceled in a specific context (or is detachable) is less obvious than the existence of an implicature with quantifiers such as *some*. Consider (2b), in which the context cancels the "not all" implicature of (2a), and (3b), in which the context cancels the "no more than *n*" implicature of (3a), and which can be thus paraphrased as (3b'). Examples (2)-(3) are taken from Horn (1989: 214-215).

(2) a. Some of the dinner guests are non-smokers
b. Some or all of the dinner guests are non-smokers
(3) a. Pat has three children
b. Pat has three or even four children
b'. 'Pat has relatively many children, three or even four'

An important difference between an implicature and an entailment is the following: unlike the implicatures in (2a) and (3a), an entailment (for instance, in Horn 1996, the entailment (4a) → (4b)) cannot be canceled by the context, as (4c) shows.

(4) a. Peewee managed to lift the rock
b. Peewee lifted the rock
c. #Peewee managed to lift the rock, in fact, he didn't lift the rock

[1] For different kinds of scales and their structure see, for instance, Karttunen & Peters 1979, Boguslavsky 1985, Vol'f 1989, Kennedy 2001, and others.

[2] "1. Make your contribution as informative as required (for the current purposes of exchange); 2. Do not make it more informative than required", Grice (1975: 45-46).

Unlike the "at most *n*" implicated meaning, the conventional "at least *n*" component of *n*'s meaning cannot also be canceled by the context, according to Horn 2004. This is shown by (5).

(5) #Pat has three or just two children

Another interesting problem related to a quantitative scale and discussed by Krifka (2002, and especially 2007) is the treatment of precise *vs* approximate interpretations of numeral expressions. A well-known example is the Russian "approximate" inverted construction *čelovek pjat*' 'around five men' [lit. 'men five'], which corresponds to an interval on the scale rather than to a point. *Pjat*' *čelovek* 'five men', on the contrary, usually has a precise interpretation and corresponds to a point on the scale.

In what follows, numeral expressions are analyzed in terms of their grammatical structure, semantics, and location on the quantitative scale; the cases of implicature are not discussed in detail.

2. *Numeral expressions and constructions denoting quantity cross-linguistically*

A brief survey of grammatical constructions with numerals in different languages is interesting with respect to the problem of locating the referents of these constructions on the quantitative scale, as mentioned in the Introduction. This problem concerns morphologically or syntactically complex numeral expressions, in particular, the way they (or one/ some of their components) correlate with the quantity scale, and their components' part of speech/ categorical status. Another issue is the space on the scale corresponding to a certain complex numeral construction or its component (point, interval, etc.)[3].

Let us review and compare numeral and quantitative constructions in some typologically diverse languages. Besides Russian and other European languages, we will consider languages with classifiers (Chinese, Japanese, Korean) and Caucasian languages.

Rullmann & You 2003 compare bare nouns (6a) and constructions with classifiers (6b) in Chinese. (6a-b) are (30)-(31) from Rullman & You 2003; in Mandarine Chinese, only noun preposition classifiers constructions are possible.

[3] Russian numerals have been extensively studied by Liaševskaya 2004; see also Krylov 2005, S. Lee 2005 and references there.

(6) a. Zuotian wo mai le shu
yesterday I buy ASP book
"Yesterday, I bought one or more books"
b. Zuotian wo mai le (yi) ben shu
yesterday I buy ASP (one) CLASS book
"Yesterday, I bought one/a book"

Rullmann & You show that a bare noun in Chinese, such as *shu* 'book' in (6a), is not specified for number; in our terms, *shu* does not allow any localization on the quantitative scale (the noun in (6a) has an existential status). Unlike the bare noun in (6a), the classifier construction, such as *(yi) ben shu* '(one) CLASS book' in (6b), has the properties of a combination of a countable noun with a numeral (such as *ten books* in English); that is, the classifier (6b) construction corresponds to a point on the quantitative scale and triggers the "at most *n*" implicature, which is cancelable. This is shown in (7a-b), taken from Rullmann & You 2003; ex. (60a-b). In both of (7a-b), 'if not two' explicitly cancels the "at most *n*" implicature. Only (7b), which has a classifier construction but not a bare noun, is possible in Chinese. In (7b), the "at most *n*" implicature of (6b) is canceled. In (6a), the status of 'book' is existential; (6a) has no "at most *n*" implicature. Rullman & You propose that the fact that (7a) is less acceptable than (6a) is related to this status.

(7) a. #Ta ruguo mei you liang-ge hiazi ye you hiazi
he if not have two-CLASS child at_least have child
"He has a child/children, if not two"
b. Ta ruguo mei you liang-ge hiazi ye you yi-ge
he if not have two-CLASS child at_least have oneCLASS
"He has one child, if not two"

In other words, the classifier – *ben* in (6b) – establishes the correlation of the classifier group with a point on the quantitative scale (cf. Krifka 1995). This classifier function is also applicable to certain Japanese/Korean classifier constructions, see below and section 3.3. Rullmann & You (2003: ex. (66) and reduced (67)), following Tang 1990, propose that bare nouns head an NP in Mandarin Chinese, as shown in (8a). A construction with a classifier is a ClP (Classifier Phrase, (8b))[4]; its head, the Cl(ass), places the whole construction on the quantitative scale; the NP is the complement of the ClP.

[4] According to Tang, the ClP is dominated by a DP, in which D (determiner) is the existential quantifier ∃. In the structure proposed in (8b)=reduced (67), the head of ClP is Cl, and the head Num is adjoined to the head Cl.

(8) a. [$_{NP}$ [$_{N}$ *gou*]] ‘dog’
b. [$_{ClP}$ [$_{Cl}$ [$_{Num}$ *yi/ø*] [$_{Cl}$ *zhi*] $_{Cl}$] [$_{NP}$ [$_{N}$ *gou*] $_{NP}$] $_{ClP}$] ‘a/one dog’

The situation in Japanese and Korean is different. As Nakanishi (2004: 129) notes, in Chinese, numerals are optional in classifier constructions, cf. (6b), (8b), and are in some cases even prohibited. In Japanese and Korean, by contrast, numerals in such constructions are obligatory. There are two basic classifier constructions, with preposition and postposition of the “numeral + classifier” group, henceforth, NQ, following Kim 1990, – see Kim 1990, Nakanishi 2004 (and references there). Examples of these classifier constructions in Korean are (9a-b), taken from Kim (1990: 121).

(9) a. yel kwen-uy chayk(-ul)
ten CLASS-GEN book(-ACC)
“Ten books”
b. chayk yel kwen(-ul)
book ten CLASS(-ACC)
“Ten books”

Constructions with numerals but without classifiers (as opposed to Chinese) are also possible:

(10) tases haksayng [Chang 1996: 94]
five student
“Five students”

As Nakanishi (2004: 129) mentions, classifiers in Chinese make the noun countable, but in Japanese/ Korean, classifier phrases normally contain, besides a classifier, also a numeral – see (9)-(10). Nakanishi (2004: 132) argues that Japanese/ Korean classifier constructions are parallel to measure expressions in European languages, such as [*three meters*] *high*, [*three miles*] *away*, walk [*two meters*], etc., that can co-occur not only with nouns, but also with prepositions, verbs, etc. Taking this as a starting point, Nakanishi 2004 proposes that the Classifier Phrase ClP (or, in terms of Nakanishi, the MP for Measure Phrase) is adjoined to the NP, as in (11a), which is the structure of (9a). For the structure of (9b), with the postposition of the classifier (see (11b)), Nakanishi proposes that NP from (11a) moves to the phrase-initial Spec DP.

(11) a. [$_{NP}$ [$_{ClP}$ [$_{NumP}$ *yel*] [$_{ClP}$ *kwen* $_{ClP}$]] [$_{NP}$ [$_{N}$ *chayk*] $_{NP}$] $_{NP}$]
b. [$_{SpecDP}$ [$_{NP}$ [$_{N'}$ *chayk*] $_{NP}$]] [$_{D'}$ [$_{NP}$ [$_{ClP}$ [$_{NumP}$ *yel*] [$_{ClP}$ *kwen* $_{ClP}$] $_{ClP}$] [$_{NP}$ t]] $_{DP}$]

The structures in (11) have some shortcomings. For an alternative structure, see (12a-b). For postnominal classifier phrases such as (9b), an adjunction of NP to $N_{Cl}P$ is most appropriate, as in (12b).

There are several serious differences between (11a-b) and (12a-b). First, we do not see enough reason to introduce an additional category ClP. The facts of morphology are the following: classifiers can attach case markers (e.g. GEN in (9a) and ACC in (9b). In a postnominal classifier construction, such as (9b), case inflection attaches obligatorily to the classifier (*kwen*) and only optionally to the noun (*chayk*). Most classifiers are grammaticalized nouns, and there are some homonymous nouns and classifiers, such as *kalak* ('spindle' or 'CLASS(ifier) for long small objects'). Based on these facts, classifiers are a subclass of nouns (N_{Cl}) but not a separate category. Second, in a structure for (9a), a more appropriate position for $N_{Cl}P$ would be SpecNP rather than adjoined to NP because the SpecXP position is most widely used for genitive phrases/modifiers – see (12a). Third, we do not find the D head and movement to SpecDP in a structure for (9b), as in (11b). An adjunction structure, as in (12b), based on a binary branching conception and the complement-adjunct distinction (Chomsky 1986)[5], is the most appropriate.

(12) a. $[_{SpecNP}\ [_{NclP}\ [_{NumP}\ \textit{yel}]\ [_{NclP}\ \textit{kwen}\ _{ClP}]]\ [_{N'}\ [_{N}\ \textit{chayk}]]\ _{NP}]$
b. $[_{NclP}\ [_{NP}\ [_{N'}\ \textit{chayk}]\ _{NP}]]\ [_{NclP}\ [_{NumP}\ \textit{yel}]\ [_{NclP}\ \textit{kwen}\ _{NclP}]\ _{NclP}]\ _{NclP}]$

For lack of space, we will not go into the question of whether the structures (12a-b) are derivable from each other either way. For further discussion of the two constructions in (9a-b), see section 3.3.

Now let us consider numeral constructions in Tsakhur (Sosenskaya 1999b), for another Caucasian language Bagvalal with similar constructions with numerals see Tatevosov 2001. Numerals in Tsakhur are prenominal, they are inflected for class agreement markers (they agree with the noun) and for attributive markers, and sometimes also have case endings. Tsakhur cardinal numerals have a special affix *-re* 'CARD'[6].

The verb agreement depends on whether the noun has a plural affix or not; see (13a-b)[7]. Numerals are also used with the affix *-mē* 'LIM'[8] for approximate interpretation (*-mē* is also used in other constructions, such as comparative), as illustrated in (14a-b). (13a-b) and (14a-b) are from Sosenskaya (1999b: 159).

[5] An alternative analysis is proposed, among others, by Lander 2003. According to Lander 2003, the noun is the argument of the classifier, at least in (11b) and (12b). This analysis is based on semantic data and arguments.

[6] Ordinal numerals have a special affix in both Tsakhur and Bagvalal.

[7] Agreement can be iterated in intransitive verbs (e.g. ***-r-*** '[class] 1' in *il*$_j$*o*=***r***=*zur-o*=***r*** in (13a), because the verb generally has several agreement positions, see Kibrik 2001.

[8] In terms of our glosses, 'DELIM'.

(13) a. xo=j=re adamī il_jo=r=zur-o=r
five=1=CARD man.1 1=stand.PF-be=1
b. xo=j=re adam-ē-r il_jo=b=zur-o=b
five=1=CARD man.1-PL-NOM.PL HPL=stand.PF-be=HPL
"Five men are standing"

(14) a. xo=j=re-mē-na insan a=r=i
five=1=CARD man.1 1=come.PF
b. xo=j=re-mē-n insan-ā-r a=b=i
five=1=CARD-LIM-A man.1-PL-NOM.PL HPL=come.PF
"Around five men came"

Certain works on approximators and degree adverbs are Israel 1996, Doetjes 2002, Krifka 2002, Krifka 2007, and Sauerland & Stateva 2007. It is necessary to mention the following co-occurrence restrictions: degree adverbs are prohibited with individual-level predicates/ non-scalar adjectives, such as in (15a-b) (taken from Doetjes 2002).

(15) a. *Cet élève sait beaucoup la réponse
this student knows a_lot the answer
b. *peu/ un peu dernier
little/ a little last

This restriction is universal and relevant for Korean and Russian intensifier constructions discussed in section 3.2.

Krifka 2007 proposes that (round) numerals can be ambiguous and denote a round rather than an exact number (1000=‘around 1000’), and discusses pragmatic and contextual conditions in which either of the two interpretations mentioned is possible. Sauerland & Stateva 2007 propose a classification of approximation words (such as *precisely*, *almost*, *nearly*, etc.) based on Krifka’s proposal. In section 3.3, we consider approximation constructions in Korean and Russian and discuss whether or not Krifka’s principle can be applied to these languages’ data. We also compare different approximation constructions in Korean and Russian.

Finally, Israel (1996: 654-655) discusses the approximator *exactly* among different kinds of quantifiers, and mentions that quantifier phrases such as [*exactly n + NP*] (unlike quantifiers such as *many, few*) cannot be classified as upward or downward entailing, cf. (16a-c) and (17) (=(45a-c),(46) from Israel (1996: 655))[9].

[9] Israel explains (17) referring to the «idiomatic» use of *exactly N*, which has the ‘few’ flavor, so that (17) implicates that ‘few’ (downward entailing) guests had whiskey, which implicates most guests had no whiskey. However, not all native speakers accept (17) as fully grammatical. Peter Arkadiev (p.c.) proposes another analysis of (17): the NPI *a drop (of)* is licensed by the lower quantifier *as much as* ‘few’ rather than by *exactly three*. As far as (i) (without *exactly three* and with *so much as*) is

(16) a. Exactly 3 professors read a novel last night
b. -/-> Exactly 3 professors read a book last night [upward]
c. -/-> Exactly 3 professors read a trashy novel last night [downward]

The *exactly N* phrase, not being downward entailing, licenses certain kinds of NPI-s, such as *a drop (of)*, that are usually possible in downward entailing contexts, cf. (17).

(17) Exactly three of the students had so much as a drop of whiskey

In sum, we have outlined some basic concepts and problems of the theory of quantitative expressions with reference to Chinese, Japanese/ Korean, Tsakhur. First, we have discussed the applicability of scalar implicature approach to certain classifier constructions in Chinese; second, we have proposed a syntactic analysis of classifier constructions in Korean based on adjunction (unlike the alternative analysis by Nakanishi 2004 based on a DP structure and NP-movement to SpecDP) and on assuming that a Korean classifier is of nominal category ($N_{CL}P$). Finally, we have presented some data and issues on approximate interpretation and degree adverbs. In section 3, we will try to link some of the issues discussed above with Russian and Korean data.

3. *Russian and Korean quantitative and numeral constructions: a comparison*

In this section, we will review and compare some types of numeral and quantitative constructions in Russian and Korean. In section 3.1, adverbs and adjectives of small/ indefinite quantity (such as *nemnogo* 'some', *kakoj-to* 'not determined') and their interpretation in the quantitative construction with nouns are considered. Constructions with these adverbs are analyzed with respect to the question of whether they can be handled by the scalar implicature account for by Horn's 2004 "explicature" account. In section 3.2, adverbs of "absolute" quantity, such as *absolutely*, and their use with adjectives are discussed. In section 3.3, the Korean construction with classifiers (see (9a-b)) and the use of approximation words/ affixes in this construction are looked at. Krifka's principle of Round Numbers Round Interpretation and its applicability to the

possible, the hypothesis of *a drop (of)* 's being licensed by *as/so much as* rather than by *exactly three* would look reliable. However, neither (17), nor (1) is not judged by native speakers as fully grammatical, as well as (17) above.
(i) I had so much as a drop of whiskey, and nevertheless got drunk

Russian data (e.g. approximation inverted constructions) are investigated. In section 3.4, another Korean construction for counting items (with numerals used for enumeration) and its Russian equivalents are considered.

3.1. *Quantitative constructions with quantifiers of low and indefinite quantity*

Bulygina & Šmelev 1988 propose a comparative semantic analysis of Russian *mnogo* 'much/ many', *malo* 'little/ few', *nemnogo* 'some' (for *nemnogo*, see also Baranov, Plungian & Rakhilina 1993). Bulygina & Šmelev concentrate on the set – subset relation between the extension set of the quantified noun and the extension set of the whole quantifier phrase. For instance, in *malo ljudej* 'few people', the extension set of *people* is the set of people (for details, see below); the extension of *malo ljudej* is a small part of the set of people. For *vse* 'all' and *mnogie* 'a lot of', the extension is usually the full set of objects ('all the living people' in *mnogie ljudi*)[10]. *Mnogo* 'much/ many' and *malo* 'little/ few' are associated not with the real set of, say, *people*, but with the normal (from the point of view of the speaker's expectations) set estimated for the situation under consideration. In (18a), the extension set of *ljudi* is the set of all people, whereas in (18b), this set is the normal/ usual set of people present at the party in the given situation.

(18) a. Mnogie ljudi interesujutsja iskusstvom
"A lot of people are interested in art"
b. Na prazdnik prišlo mnogo ljudej
"Many people came to the party"
[compared to an expected or average amount]

Bulygina & Šmelev 1988 propose that the difference between *malo* 'little/ few' and *nemnogo* 'some' is that *malo* **presupposes** the existence of the set quantified by *malo*, whereas *nemnogo* **asserts** this set's existence (whereas its quantification by *nemnogo* is not focused[11]). Cf. (19a) with the existential (*est'* 'be/ exist') construction and (19b).

[10] A special context can change the extension of *mnogie* from the full set of objects to an expected set, consequently, the conclusions about *mnogie* is not universally valid. Cf. such an example (i):
(i) Mnogie, u kogo est' mašina, kak ni stranno, vse-taki ezdjat na rabotu v metro
"Strangely, many people who have a car still go to work on the subway" [many of the set of people that are expected to use the car]

[11] *Nemnogo* itself can (rarely) be focused, then the quantification on the set it modifies is also focused/ asserted:

(19) a. U menja est' nemnogo/ #malo deneg [Bulygina & Šmelev 1988: 49]
"I have a little money"
b. U menja nemnogo/ malo deneg
"I have a little/ little money"

In *est'* sentences, *est'* asserts the existence of the quantified set[12]. *Malo* is not acceptable in a *est'* sentence, such as (19a), because *malo* is consistent with presupposing the set's existence rather than with asserting it. In (19b), which has a 'possessive/ locative' null predicate (but not existential), both *malo* and *nemnogo* are possible.

The "non-focal" status of the 'quantification' component in the meaning of *nemnogo* causes the following phenomenon: in certain contexts, such as (20a-b), the set quantified by *nemnogo* is not necessarily small (compared to the volume of an expected or normal set). This set is most probably also not big, as it is clear from examples (24)-(25) below. In such cases, the 'background' quantification is overridden by pragmatic implications that determine or restrict the set amount, as in (20).

(20) a. U menja est' nemnogo deneg, pojdem v kafe
[= 'certain amount of money/ enough money']
"I have some money, let's go to the cafe"
b. Nam ponadobitsja nemnogo vremeni, čtoby doexat' do muzeja
[= 'certain time']
"It will take us some time to reach the museum"

Horn 2004 highlights a similar use of *some* (not conveying the 'small amount' meaning):

(21) It will take us some time to get there [= 'a considerable time']

With respect to (21) (from Horn 2004) and other cases below with indefinite adverbs/ adjectives in quantitative constructions, let us consider Horn's 2004 notion of "explicature"/ "pragmatic intrusion"/ "enriched truth-conditional context", as opposed to scalar implicature. Explicature emerges when the value of the quantity is determined by the sentence context: the broader context overrides the scalar component. In such cases, the scalar component of the quantification adverb is not at work

(i) U menja sejčas imenno NEMNOGO deneg, xvatit tol'ko na odin učebnik "I have just a little money now, enough only for one textbook"

[12] Besides that, the nominative NP tends to be new/ indefinite. In particular, definite NP-s can be subjects of the *est'* construction only in a contrastive context:
(i) a. #U menja est' etot stol "I have this table"
b. U menja EST' etot stol "I do have this table"

(the adverb does not place the quantified object into the lower part of the quantitative scale, as sketched in the Introduction). The quantity value is determined solely by the context. Since no scalar implicature can be construed to explain such uses of *nemnogo/ some*, Horn 2004 calls such cases "cases of explicature".

Let us look at the data on *nemnogo* with respect to whether it confirms Horn's 2004 hypothesis or not. Bulygina & Šmelev's 1988 analysis sketched above is theoretically consistent with pragmatic effects like "explicature". Especially, if the quantification component is not focused, possibility of different interpretations induced by the context increases. From this point of view, *malo* 'little/ few' asserts that the quantified object is in the lower part of the quantity scale and therefore must not allow any explicature; *nemnogo* 'some', for which the quantification feature is not focused, must allow explicature. However, examples (20a-b) do not support the explicature analysis. In these examples, the amount of money/ time is not determined/ medium, but definitely not big. Such interpretations can be accounted for by a standard "not all" scalar implicature: words denoting small quantity (such as *nemnogo*) implicate that the quantity under consideration is not big. We see that resorting to the explicature approach is not necessary.

Let us consider indefinite adjectives in Russian from this point of view: *kakoj-to*, *nekotoryj*, *opredelennyj*. All of these adjectives, in general, have the meaning 'not known or defined', they are "indefinite"/ existential and cannot modify scalar values. (21a-c) illustrate the regular use of *kakoj-to*, *nekotoryj*, *opredelennyj* (cf. the table in Haspelmath 1997: 4), and (22a-c) illustrate the "scalar" use (modifying a noun associated with the quantity scale).

(21) a. Tam stojal *kakoj-to* čelovek
"There stood a/ some man" [indefinite, specific, unknown to the speaker]
b. V *nekotoryx* gorodax net tramvaev
"There are no trams in some towns" [indefinite, specific]
c. *Opredelennye* temy menja razdražajut
"Certain topics irritate me" [indefinite, specific, known to speaker]

(22) a. U nas na eto ujdet *kakoe-to* vremja
"It will take us some time"
b. *Nekotoroe* količestvo deneg ujdet na taksi
"Some money will be spent on taxis/ on a taxi"
c. U nego est' *opredelennye* sposobnosti k risovaniju
"He has some talent for drawing"

Any of the three adjectives can modify, besides the scalar value, another parameter (time, quantity etc.). For instance, ***kakoe-to*** *vremja*

can have non-scalar interpretations – e.g. 'some specific time' in (23), cf. (22a).

(23) Oni vstrečajutsja na vokzale v *kakoe-to vremja*, točno ne pomnju, okolo semi
"They are meeting at the railway station at some time, I don't know exactly when, around 7"

In (23), *vremja* means 'a point on the time scale', so *kakoe-to* conveys, roughly, the information that the exact place of this time point is not known. In (22a), *vremja* means 'a period of time', and *kakoe-to* means that the length of the period is indefinite (but specific). Given that all the three adjectives involved (*kakoj-to*, *nekotoryj*, *opredelennyj*) are indefinite, the expressions *kakoe-to vremja*, *nekotoroe količestvo*, and *opredelennye sposobnosti* cannot be placed at the quantitative scale without the help of the context.

All of these adjectives often refer to a point/ interval in the medial or the lower part, or even the higher part of the quantity scale. (24a-c) are not entirely acceptable, which might suggest that the adjectives under consideration preferably get interpreted as the middle of the quantity scale (rather than in its upper part). (25a-b), with a slightly different context, allow the 'a period of time' interpretation, *nekotoroe količestvo* and *opredelennye sposobnosti* receive an interpretation in which the quantity of money/ degree of talent is high.

(24) a. ?U nas na eto ujdet *kakoe-to* vremja, pričem očen' značitel'noe/ neznačitel'noe
"It will take us some time, by the way, a very long/ short time"
b. ??*Nekotoroe* i očen' značitel'noe količestvo deneg ujdet na taksi
??"Some and very much money will be spent on a taxi"
c. ??U nego est' *opredelennye* i bol'šie sposobnosti k risovaniju
??"He has some and even, considerable talent in drawing"

(25) a. *Nekotoroe*, pričem očen' značitel'noe količestvo deneg ujdet na taksi
"Some, by the way, very much money will be spent on taxi"
b. U nego est' *opredelennye*, pričem ves'ma značitel'nye, sposobnosti k risovaniju
"He has some, by the way, considerable talent in drawing"

The explicature approach can explain the interpretations in (24)-(25): it is solely the context that establishes some correlation between expressions with *kakoj-to*, *nekotoryj*, *opredelennyj* and the quantitative scale. Therefore, no restrictions on the quantity of objects, or on substance or quality denoted by a noun used with these adjectives are posed by these expressions.

To conclude, we have analyzed some of data on low quantity adverbs and indefinite adjectives in quantitative constructions. We have found that the 'not all'/ 'not high on the scale' implicature approach can be applied for the interpretation of expressions with low quantity adverbs; the explicature approach accounts for the data with indefinite adjectives.

Now consider Korean words – equivalents of the Russian *kakoj-to*, *nekotoryj*, and *opredelennyj*. The main equivalents of them are *etten* 'some [specific, not known to the speaker]', *yakkan(-uy)* 'small amount (-GEN)', *thukcenghan* 'certain, specific', *camsi* 'short [about time]'. *Etten* is a quantifier, *yakkan* is a noun, and *thukcenghan* is a participle[13]. All of them are modifiers and occur in the prenominal position. The use of these words is illustrated in (26a-c).

(26) a. Onul etten senpay-lul manna-le ka-ss-ta
today some senior_student-ACC meet-CONV go-PAST-DECL
"Today I went to see some senior student"

b. Ku-nun yakkan-uy ton-i philyoha-n
he-TOP small_quantity-GEN money-NOM need-PART
moyang-i-ess-ta
appearance-COP-PAST-DECL
"He seemed to need some money"

c. Une-lan thukcengha-n kyechung sai-ey-man
slang-COP.ATTR certain-PART class among-LOC-ONLY
thongyongtoy-nun mal-i-ta
use-PART.PRES word-COP-DECL
"Slang is the language used only among certain classes [of people]"

The "scalar" uses of *etten*, *yakkan(-uy)*, *thukcenghan* and *camsi* 'short [about time]' are illustrated in (27):

(27) a. Ku-nun swuhak-ey etten/ yakkan-uy/
he-TOP mathematics-DAT some/ small_quantity-GEN
thukcengha-n caynung-i iss-ta
certain-PART talent-NOM exist-DECL
"He has certain talent for mathematics"

b. Wuli-nun hakkyo-ey ka-ki wihay yakkan-uy
we-TOP school-LOC go-NMNZ for.POST small_amount-GEN
/ camsi sikan-i philyoha-ta
short time-NOM need-DECL
"We need some time to go to school"

[13] Korean has no adjectives as a morphologically productive category.

Another quantitative construction can be formed with the adverb *com* 'a little', such as in a conditional construction (28)[14].

(28) (Wuli-nun) hakkyo-ey ka-lye-myen
(we-TOP) school-LOC go-CONV.PURP-CONV.COND
sikan-i com kelli-l kes i-ta
time-NOM a_little take_time-PART.FUT thing COP-DECL
"It will take us a little time to go to school", lit. "If (the aim is) to go to school, a little time is [needed]"

The presentation of the Korean examples here has an illustrative purpose, a more detailed analysis of the Korean data is needed.

In this section, we have discussed the issue of whether Horn's scalar implicature and the "explicature" analyses can account for the Russian data on quantitative constructions with low quantity adverbs and indefinite adjectives. Our conclusion is that the low quantity adverb constructions are consistent with the scalar implicature analysis, whereas the indefinite adjectives constructions are consistent with the "explicature" analysis.

3.2. *Quantitative constructions with intensifiers such as 'too', 'entirely', etc.*

The intensifier words in Russian include *očen*' 'very', *vpolne* 'absolutely/ quite', *sliškom* 'too', *soveršenno* 'absolutely', *polnost'ju*/ *sovsem* 'entirely'. In Korean, we find *acwu* 'very', *nemwu(-na)* 'too (-more)', *wancenhi* 'absolutely/ entirely', *cencekulo* 'quite', and *cenhye* '[not]… at all' (a "negative-polarity" adverb). These adverbs place the property/ state in the upper part of the quantitative/ degree of the property scale. (29a-c) and their translations show the use of these words.

(29) a. Emma-wa aki motwu
mother-COMIT child all
acwu/ nemwuna/ wancenhi kenkangha-pnita
very/ too/ absolutely healthy-DECL.FORM
"Both the mother and the child are very/ too/ absolutely healthy"

b. Tangsin-un wancenhi/ cenhye kenkangha-ci anh-supnita
you-TOP absolutely/ [not]_at_all healthy-CONV not-DECL.FORM
A. With *wancenhi* "You are not absolutely healthy" [still a little sick]
B. With *cenhye* "You are not at all healthy" [rather sick]

[14] Conditional constructions are widely used in Korean, as well as in Japanese, for prohibitive, optative, etc. meanings, cf. Sohn 1999, Podlesskaya 1993.

c. Na-nun tangsin-eykey cencekulo
I-TOP you-DAT absolutely
tonguyha-pnita
agree-DECL.FORM
"I absolutely/ quite agree with you"

As (29b) shows, Korean has two separate adverbs for non-negative and negative contexts *wancenhi* vs *cenhye*, similar to English *absolutely* vs *[not] at all*, and Russian *sovsem/ soveršenno/ polnost'ju* vs *[vovse ne]*; cf. (30)-(31)[15].

(30) a. On soveršenno/ *vovse prav
"He is absolutely/ *at all right"
b. On sovsem/ *vovse zdorov
"He is absolutely/ *[at all] healthy"
c. On soveršenno/ [vovse ne] prav
A. With *soveršenno*: "He is absolutely wrong/ not right"
B. With *vovse*: "He is not right at all"

(31) On polnost'ju/ [vovse ne] zdorov
A. *With polnost'ju*: "He is not entirely healthy" [but quite healthy]
B. With *[vovse ne]*: "He is not healthy at all" [quite sick]

In (30b) and (31), we see the same phenomenon: *wancenhi kenkangha-ci* (A) and *polnost'ju zdorov* corresponding to the (A) translations are in the scope of the negation *anh-ta* 'ne'; therefore the subject referent's being entirely healthy is denied (he is probably quite healthy, but not entirely healthy). On the other hand, in the (B) translations, *kenkangha-ci anh-ta* (*ne zdorov*) are within the scope of *cenhye*/ *vovse*, therefore the 'entirely not healthy/ entirely sick' interpretation emerges (and we get the reversal placement on the scale).

On the whole, intensifiers discussed in this section place the property or state into the upper part of the quantitative scale. The scale in this case can be interpreted as a set of ordered values with a given standard value (Kennedy 2001). In case of *očen'*/ *acwu* 'very', the standard value is less relevant than in case of *sliškom/ nemwuna* 'too' (the latter has a negative connotation related to the actual value's exceeding the standard value). Adjectives used with *soveršenno/ wancenhi* 'absolutely/ entirely' denote gradable and asymmetric scale properties. For details of the analysis of Korean data, see Chung 1999.

[15] For details on these adverbs in Russian, see Grigorieva 1999. Roughly speaking, *vovse* requires negation because *vovse* denies a presupposition introduced in the previous context (Yury Lander, p.c.), e.g.

(i) A: Ty rasstroen! B: Vovse ne rasstroen
"You are disappointed" "Not at all disappointed"

3.3. *Approximation markers in (classifier) numeral constructions*

As it has already been mentioned in section 2, Korean has a productive numeral construction with classifiers, as well as a numeral construction without classifiers (cf. (9a-b)[16] and (10) respectively repeated here as (32a-b) and (33)).

(32) a. yel kwen-uy chayk(-ul)
ten CLASS-GEN book(-ACC)
b. chayk yel kwen(-ul)
book ten CLASS(-ACC)
"Ten books"

(33) tases haksayng [Chang 1996: 94]
five student
"Five students"

We will concentrate on classifier constructions such as (32a-b). The structure for (32b) we propose in section 2 is (12b), repeated here. The question we are concerned with here is which word in (32a-b) is the head of the whole construction. For (32a), no real problem arises because the classifier *kwen(-uy)* is a prenominal modifier. For (32b), the solution is not that straightforward. As it is shown in (32b), the case marker (*-ul* 'ACC') normally attaches to the classifier (*kwen-ul*), but not to the noun (*chayk*). This fact might suggest that *kwen* is the head, whereas the quantified noun (*chayk* 'book') is a secondary head, or that, though it is a noun, it does not have all the grammatical features of a noun. The structure (12b), in which the NP with the head N *chayk* 'book' is adjoined to the $N_{Cl}P$ with the N_{Cl} head *kwen* (see the discussion of (12) in section 2) is well-based: the head of an NP-adjunct is secondary, and the head of $N_{Cl}P$ is primary[17].

[16] The genitive *-uy* construction (32a) is used mostly in the written language; the construction (32b) is neutral.

[17] A more up-to-date way of accounting for a two-NP analysis of (32b) is by assimilating them to different kinds of floating quantifier and other discontinuous NP constructions with unitary case-marking also found in Slavic languages and German; see Jung 2004, 2005. In such an analysis, the noun and the classifier are considered a chain resulting from a leftward movement/ topicalization of the noun with subsequent optional partial deletion (and also deletion of one or both case marker copies). This movement mechanism is allowed in the minimalist copying approach to movement; see Chomsky 1995. An example of another kind of a discontinuous construction with a topicalized noun and double case-marking, as in (34a), is (i) from [Jung 2004: 550].

(i) Chayk-*ul* Mali-ka caymiissnun-kes-*ul* etten-kes-to ilk-ci anh-ass-ta
book-*ACC* Mary-NOM interesting-thing-*ACC* any-thing-DELIM read-CONV not-PAST-DECL
"Mary did not read any interesting books"

Other arguments for a separate NP status of the noun in (32b) are the following. First, the noun in a (32b)-like construction can optionally have a "double" case marker, as shown in (34a) with the noun *oleynci* 'orange'. Second, the noun (*oleynci*) can head a relative clause even if it has no case marker, as in (34b).

(12) b. [$_{NclP}$ [$_{NP}$ [$_{N'}$ *chayk*] $_{NP}$]] [$_{NclP}$ [$_{NumP}$ *yel*] [$_{NclP}$ *kwen* $_{NcllP}$] $_{NclP}$] $_{NclP}$]

(34) a. Oleynci(-lul) twu kay-lul
orange(-ACC) two CLASS-ACC
"Two oranges [ACC]"[18]

b. Ku-nun [cip-ey nam-un] oleynci twu
he-TOP [house-LOC be_left-PART] orange two
kay-lul pangkum ta mek-e peli-ess-ta
CLASS-ACC just_now all eat-INF discard-PAST-DECL
"He has just entirely eaten the two oranges left at home"

Other possible approaches, alternative to (12b), treat *oleynci(-lul)* and *twu kay-lul* as two independent NP-s, or as a complex NP containing subordinate/ deficient NP_1 and NP_2 (we omit corresponding bracketed structures for shortness). These approaches are not consistent with the binary branching (e.g. Chomsky 1986) framework.

Now let us consider approximation constructions. Russian and Korean data have to be considered separately. Russian possesses a widely used approximate "inverted" numeral construction with the approximate interpretation, and also several approximation words (*primerno/ priblizitel'no* 'approximately', *okolo* 'around' (used with the GEN ending), cf. (35a-c).

(35) a. čelovek pjat' "around five men"
b. primerno pjat' čelovek "approximately five men"
c. okolo pjati čelovek "around five men"

The construction (35a), unlike the constructions with "lexical" approximation words (the adverb *primerno* 'approximately' in (35b)), and with the preposition *okolo* (used with GEN) 'around' in (35c), has at least the following restriction. The "inverted" construction cannot be used with big round numbers, cf. (36)-(37)[19].

[18] The variant of (34a) without the ACC marker on *oleynci* 'orange' is judged as more neutral than its variant with the ACC marker.

[19] In (36)-(37), we use round numbers which are a good illustration for approximation constructions. Example (i) shows that other (not round) numbers are practically not acceptable in the approximation construction.
(i) ???/ #čeloveka tridcat' dva/ ???/ #primerno tridcat' dva čeloveka/ ???/ #okolo tridcati dvux čelovek
'around/ approximately thirty two men'.
This can be explained by the principle in (38) discussed below.

(36) a. čelovek pjatdesjat "around fifty men" [lit. 'men fifty']
b. primerno pjatdesjat čelovek "approximately fifty men"
c. okolo pjatidesjati čelovek "around fifty men"

(37) a. *čelovek tysjača / ?*čelovek tysjača dvesti
"around a thousand/ a thousand two hundred men" [lit. 'men 1000/ men 1200'][20]
b. primerno tysjača/ tysjača dvesti čelovek
c. okolo tysjači/ tysjači dvuxsot čelovek
"approximately/ around a thousand men"; "approximately/ around a thousand two hundred men"

Krifka (2002, and especially 2007) proposes the Round Number Interpretation (RNRI) Principle (38) based on the Bi-directional Optimality Theory (which was briefly mentioned in section 2):

(38) Round numbers in measuring contexts tend to have a round interpretation

This principle is at work in regular numeral constructions (sometimes with a context making the approximate interpretation explicit), such as (39a-b); it is supported by the frequent use of round numbers in approximation constructions, cf. (36)-(37) and (i) in notes 19-20. Examples (39a-b) illustrate the RNRI.

(39) a. Na parade byl million čelovek
"There were a million people at the parade" [*million* meaning 'a great lot of men', approximate via the RNRI principle in (38)]
b. Na parade byl million čelovek, ne menee
"There were a million men at the parade, not less" [*million* meaning 'a great lot of men', approximate via the principle (38); approximate interpretation supported by the context]

However, it is not entirely clear how to apply the RNRI particularly to "inverted" constructions, such as (36a). In (36a), the "approximate" interpretation is not directly related to the "roundness" of number, it is rather conditioned by a pragmatic/ modal component 'the relative quantity of items [many/ few with respect to a normal/expected amount], rather than the exact number of items, is relevant for the speaker'. For instance, small and not round numbers can be used in the "inverted" con-

[20] Round numbers in fact can be used in inverted constructions, but only if the round number is itself an inverted construction (such as *tysjač pjat*' in (i), Yury Lander's example):
(i) tysjač pjat' čelovek/ čelovek tysjač pjat'
'around/ approximately five thousand people'

struction (but not in the *primerno* or *okolo* constructions), as it is illustrated in (40).

(40) a. Prišlo vsego čeloveka tri
lit. "Only around three men came" [with an implicature (induced by *vsego* 'just') "Few men came"]
b. *Prišlo (vsego) primerno tri čeloveka
c. ???Prišlo (vsego) okolo trex čelovek
(???)"(Just) approximately/ around three men came"

The data above has lead us to the conclusion that the RNRI principle cannot be applied to Russian inverted constructions.

Korean has no construction like the Russian "inverted" construction; it has a number of "lexical" approximation constructions: with the adverbs *yak* 'around (and a little less than)', *taylyak/ han* 'approximately', and the affixes *-ccum* 'approximately' (which attaches to the classifier), *-ye* 'around (and a little more than)' (which attaches to a numeral), or the synonymous noun *cengto* (which is placed after a classifier). *Yak* can be used in all kinds of constructions with numerals; cf. (41). (42a-c) show that *taylyak* and *han*[21] are used mostly with big and round numbers (*han* being frequently used together with *-ccum/ cengto*, as in (42b)). An example in which *-ccum* is used without *yak*/ *taylyak* / *han* is (42c). The affix *-ccum* and the noun *cengto* are used after the classifier; *cengto* is also used after the numeral in cases of classifier ellipsis, as in (43c), and *cengto* is widely used with small and round numbers; cf. (43). The affix *-ye* is widely used with time and duration expressions, such as *nyen* 'year', and with round numbers, cf. (44).

(41) a. yak twu sikan-tongan
around two hour-during.POST
"For about 2 hours/ a little less than 2 hours"
b. yak iman myeng
around 20000 CLASS
"Around 20000 men"

(42) a. taylyak chen myeng
approximately 1000 CLASS
"Around 1000 men"
b. han isip pwun-ccum
around 20 minute-APPR
"Around 20 minutes"

[21] In its main use, *han* is a numeral meaning 'one'.

c. oleynci payk kay-ccum
orange 100 CLASS-APPR
"Around 100 oranges"

(43) a. han sikan cengto ka-ta
one hour APPR.NOUN go-INF
"To walk around for an hour"

b. Ilcwuil-ey twu pen cengto o-ass-ta
week-LOC two time APPR.NOUN come-PAST-DECL
"(He) came around 2 times a week"

c. nai-ka 40 cengto-i-ta
age-NOM 40 APPR.NOUN-COP-DECL
"(He) is/ may be forty"

d. Amwu-to an o-ass-ta – yak/ taylyak/ han
somebody-DELIM not come-PAST-DECL approximately
tases myeng-ccum / cento-i-ess-ta
five CLASS-APPR / APPR.NOUN-COP-PAST-DECL
"No one came – there were around 5 people"

e. Shweylupakhoph-nun manh-un chengcwung-tul-ul
Ščerbakov-TOP many-PART audience-PL-ACC
mou-n-ta – ku-uy yencwuhoy-ey-nun yak
gather-PRES-DECL he-GEN concert-LOC-TOP around
300 myeng-ccum-i / cengtwo-ka
300 CLASS-APPR-NOM / APPR.NOUN-NOM
iss-ess-ta
exist-PAST-DECL
"Ščerbakov gathers a lot of public – there were around 300 people at his concert"

(44) a. sip-ye nyen/ sip nyen-ye
ten-APPR$_1$ year/ ten year-APPR$_1$
"Around ten years"[22]

b. han sikan-ye/ *han-ye sikan
one hour-APPR$_1$/ *one-APPR$_1$ hour
"Around one hour/ a little more than one hour"

c. sam nyen-ye
three [Sino-Korean][23] year-APPR$_1$
"Around three years"

d. oleynci payk-ye kay/ *payk kay-ye
orange 100-APPR$_1$ CLASS/ *100 CLASS-APPR$_1$
"Around 100 oranges"

[22] *Sip* in (44a), unlike *han* in (44b), is a Sino-Korean numeral.

[23] In time expressions, unlike classifier constructions (in which mostly native Korean numerals are used), mostly Sino-Korean numerals are used. Cf. Sino-Korean *sam* 'three' in (44c) and native Korean *sey(s)* 'three' in (45a-d) below, and note 22.

We see that the approximation noun *cengto* can not only follow the classifier (43b), but also the numeral, as illustrated in (43c); the affix *-ccum* attaches to the classifier, as illustrated in (43d-e). *-Ye* usually attaches to the numeral (cf. (44a), (44d)); but in some cases (to be studied further) it can attach to the noun, usually in time expressions; cf. (44b-c). We have just a few examples, such as time/ duration expressions (cf. (41a), (43a-b), (44a-c)).

Interestingly, *yak* usually means 'around or a little less than', but *-ye* means 'around or a little more than'; cf. (41a) and (44b).

In this section, we have considered Russian and Korean data separately. For Russian, we have compared the inverted construction and constructions with lexical approximation words, and shown that Krifka's RNRI principle cannot fully account for the data on inverted constructions. Also, we have illustrated the use of Korean lexical approximation words and affixes, and of their combinations. We have discussed the syntactic structure of a phrase with a numeral classifier (continued from section 2), proposed an adjunction structure for this phrase, and claimed that a classifier in Korean is of nominal category (NP).

3.4. *The counting item construction with numerals used for enumeration*

Besides the classifier constructions (cf. (32a-b) repeated here from section 3.3), (45a) and the construction in (33) repeated here, Korean has another construction for counting items (45b). The numeral in (33) and (45a) is a modifier preceding the noun *haksayng* 'student' in (33) or the classifier *cang* in (45a), whereas (45b) has the "enumeration" form of *sey* (*seys*)[24]. *Seys* has more grammatical properties of a noun than *sey*. Case affixes can attach to an "enumeration" form such as *sey-s* (45b), and *sey-s* is used for enumeration (45d).

(32)	a. yel	kwen-uy	chayk(-ul)		
	ten	CLASS-GEN	book(-ACC)		
	b. chayk	yel	kwen(-ul)		
	book	ten	CLASS(-ACC)		"Ten books"

[24] Only native Korean numerals from 1 to 4 and 20 have different forms for the "modifier" (bare/ contracted, according to Sohn (1999: 209)), as in (45a), and for "enumeration" (46b) uses. Other numerals (both native Korean and borrowed Sino-Korean ones) are identical in both uses. Cf. the native Korean *sey(s)* 'three' in (45a-d) and Sino-Korean *sam* 'three' in (44c) and (i):

(i) yuk kopha-ki sam
six [Sino-Korean] multiply-NMNZ three [Sino-Korean]
"6 multiplied by 3" [Sohn (1999: 208)]

(33) tases haksayng [Chang 1996: 94]
five student
"Five students"

(45) a. pongthwu sey cang-ul
envelope three.BARE [native Korean] CLASS-ACC
"Three envelopes"

b. Ku-nun huy-n pongthwu(-lul) sey-s-ul
he-TOP white-PART envelope(-ACC) three-ENUM-ACC
thakca wi-ey noh-ass-ta
table on-LOC put-PAST-DECL
"He put three envelopes on the table"

c. *pongthwu sey-s cang(-ul)
envelope three-ENUM [native Korean] CLASS(-ACC)
"Three envelopes"

d. yeses kopha-ki sey-s
six [native Korean] multiply-NMNZ three-ENUM [native Korean]
"6 multiplied by 3" [Sohn (1999: 208)]

As we see in (45b-c), no classifier is used in the construction with the "enumeration" form, so the "enumeration" form *seys* "comprises" the numeral and the classifier semantics. In syntactic terms, *sey-s* is a noun (Nenum) denoting quantity. The syntactic structure of *pongthwu seys* 'three envelopes' is (47), in which the "enumeration" form is the head, and the noun is a modifier; compare with (46), which is (12b) from section 2 repeated here[25]. In terms of the quantitative scale, it is the nominal numeral head (*seys*) in (47), but not the noun – counted item, that establishes the correlation of the whole phrase with a point on the scale.

(46) [$_{\text{NclP}}$ [$_{\text{NP}}$ [$_{\text{N'}}$ *chayk*] $_{\text{NP}}$]] [$_{\text{NclP}}$ [$_{\text{NumP}}$ *yel*] [$_{\text{NclP}}$ *kwen* $_{\text{NclP}}$] $_{\text{NclP}}$] $_{\text{NclP}}$]
'ten books'

(47) [$_{\text{SpecNenumP}}$ [$_{\text{NP}}$ [$_{\text{N'}}$ *pongthwu*] $_{\text{NP}}$]] [$_{\text{Nenum'}}$ *seys*] $_{\text{NenumP}}$]

The "enumeration" form construction's properties are not exactly the same as those of a nominal. The "enumeration" form can be modified by a participle, as in (48), but only hardly allows an adjective, as in (49).

(48) onul o-n sey-s-i
today come-PART three-ENUM-NOM
"Those three who came today"

[25] Similar to a regular construction with a postnominal classifier (9b), the noun in this construction can optionally have a case marker, cf. *-ul* in (34a) in section 3.3 and *-i* in (ii).
(ii) ai(-tul)(-i) sey-s-i
child(-PL)(-NOM) three-ENUM-NOM
"Three boys"

(49) ???celmun sey-s-i
young three-ENUM
"Three young [men]"

Example (49) might suggest that the "enumeration" form is not a noun phrase, unlike a regular classifier – see (46)-(47). However, we do not believe that (49) is enough evidence for this claim[26].

The "enumeration" form (when used for counting items) partially corresponds to the "collective" form of a numeral in Russian, such as *tri* 'three' [regular] – *troe* 'three [people]' [collective], e.g. (50). The Russian "collective" form is, like the Korean "enumeration" form, grammatically a noun; it can be used without any overt noun denoting counted items:

(50) V kabinet direktora vorvalis' troe (neizvestnyx) v maskax i s pistoletami
"Three unknown men in masks holding guns broke into the director's office"

The "enumeration" form such as *sey-s* 'three-ENUM' in Korean, as in Russian, can be used without a preceding noun (mostly with the [+animate] feature), cf. (50) and (51).

(51) Sey-s-un tto cikakha-yss-ta
three-ENUM-TOP again be_late-PAST-DECL
"Three [of those invited; Russ. *troe*] were late again"

The Korean equivalents of Russian expressions such as *troe mal'čikov* 'three [coll., nominal] boys' as opposed to *tri mal'čika* 'three [unmarked] boys' are shown in (52a-b). When the "Russian collective" form is used, the preferred Korean construction is with a postnominal enumeration numeral, but in the "individual/ unmarked" case, the prenominal/ modifier numeral construction is preferred (cf. (32)-(33) in section 3.3).

(52) a. ai(-tul) sey-s-i
child(-PL) three-ENUM-NOM
"Three boys"
[Russian *troe mal'čikov* 'three [coll.,nominal] boys']
b. sey ai(-tul)-i
three.BARE child(-PL)-NOM
"Three boys"
[Russian *tri mal'čika* 'three [unmarked] boys']

[26] This issue needs further research. Probably, the "enumeration" form is an NP with a special syntactic feature resisting adjective modification.

An important difference, however, is that, unlike the Korean "enumeration" form in (45b), the Russian "collective" form cannot be used for counting non-animate nouns (with a [–animate] feature), cf. (53)[27].

(53) On položil na stol tri konverta/ *troe konvertov
"He put three envelopes on the table"

To conclude, the "enumeration" form of a numeral can also be used for counting items; then no classifier is needed at all. In this case, the "enumeration" form has all the noun features (NP), for instance, it attaches case affixes and can be used without a preceding noun (the counted item). We have proposed a syntactic structure and partial semantic insight for "enumeration" numeral form constructions. A parallel from Russian would be the "collective" form of the numeral such as *troe* 'three.COLL', which has nominal properties, a [+animate] feature, and cannot be accompanied by a preceding noun. A further investigation of the "enumeration" construction is needed.

4. *Conclusion*

In this paper, we have concentrated on quantitative constructions in Korean and Russian. We have illustrated various constructions with adverb/ adjective quantification, approximation words/ affixes, and constructions with classifiers in Korean, their use and syntactic properties. We have considered the issue of how to connect these constructions with the concepts of scalarity, quantity scale and scalar implicature. It has turned out that this is a problem which can be at least partly solved. Typological diversity of Russian and Korean implies different structures and analyses for numeral and other quantitative constructions in these languages, and various degrees of applicability to them of the principles mentioned above. In sections 3.1 and 3.3, we discussed the applicability of Horn's 2004 implicature *vs* "explicature" analysis to Russian constructions with adverb/ adjective quantification, and the applicability of Krifka's (2002, and especially 2007) RNRI principle to the inverted approximation construction in Russian. Also, in sections 2 and 3.3-4, we have considered various Korean classifier constructions and the special construction for counting with the "enumeration" form. We have proposed a syntactic structure for these constructions based on adjunction and on the nominal nature of both classifiers and the "enumeration" form ($N_{CL}P$, Nenum), and compared these structures with alternative structures proposed in the literature.

[27] The Russian "collective" form also has the [+pluralia tantum] feature.

Glosses used:

A	attributive 4Sg/1Pl/2Pl/3Pl/4Pl	FUT	future
ACC	accusative	GEN	genitive
APPR	approximation	HPL	plural, animate
ASP	aspectual marker	INF	infinitive
ATTR	attributive	LOC	locative
BARE	bare (form)	NMNZ	nominalizer
CARD	cardinal numeral	NOM	nominative
CLASS	classifier	ONLY	‘only’ particle
COMIT	comitative	PART	particle
COND	condition	PAST	past
CONV	converb	PF	perfective
COP	copula	PL	plural
DAT	dative	POST	postposition
DECL	declarative	PRES	present
DELIM	(de)limiting (particle)	PURP	purpose
ENUM	enumeration (form)	TOP	topic
FORM	formal (style)		

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