Genitive of Quantification in Russian:
What morphology can tell us about syntax

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The paper focuses on Case properties of Russian numerals assumed by previous accounts to involve Case conflicts (Franks, 1994). Resolution of Case conflicts required complex theoretical machinery introduced in the syntactic component. The new analysis achieves a greater descriptive adequacy while eliminating the need for complications in the Case theory. It bears on the relationship between abstract and morphological Case, arguing for a systematic distinction between the two lacking in the previous accounts. The proposed approach takes into consideration morphological processes characteristic of Russian declension, which allows to sort out morphological idiosyncrasy and results in a more restricted core.

1. Introduction

The fact that abstract Case (a-case) does not always correspond to morphological (m-case) in Russian is illustrated in (1). Here we see that the NOM(inative) subject in (a) and ACC(usative) object in (b) are inflected identically.

(1)a. Derev-**o** rost'ot vozle dom-a.
Tree-neuter-NOM grows near house-GEN
'The tree is growing near the house.'
b. Ivan srubil derev-**o**.
John-NOM cut tree-neuter-ACC
'John cut a/the tree.'

An analysis that relies on morpho-phonological realization of Case to identify a-case would have to claim that the object in (1b) is NOM. Standard analyses of a sentence like (1b), however, look past m-case and let the syntactic relations in the sentence be their guide. What is glossed in (1) then is a-case, and not m-case.[1]

[1] Henceforth, I will use the upper case notation for glossing a-case and low case notation for m-case.

The inconsistency between a-case and m-case caused by Case syncretism is hardly a controversial issue. However, the problem arises because there are instances where it is not clear whether the two correspond to each other directly or not. One example of a situation where a-case/m-case correspondence is not immediately clear is the so-called quirky or lexical Case, when a-case is unpredictable, and we are forced to use the phonological form of the Case exponent as our guide for identifying a-case.

Compare (2a) and (3a). In these two examples, the objects have phonologically identical m-case: gen. We cannot identify a-case simply by looking at the examples in (2a) and (3a). We have to look at N's of various declension classes and compare their m-case. This would reveal that complements of V in (2) are either gen (2a) or nom (2b) depending on the animacy status of N. Knowing that inanimate nouns in Russian exhibit syncretism of nom and acc, while animate nouns gen and acc would allow us to determine that objects in (2) are ACC: gen/ACC in (2a) and nom/ACC in (2b).

On the other hand, a similar analysis for the verb in (3) reveals that the animacy status of N does not affect m-case and the complement is always gen. This leads us to believe that V in (3) is indeed a quirky Case assigner and the objects are gen/GEN.

(2)a. Pavel lyubit Ivan-**a**. b. Paul lyubit grom-**ъ**.
Paul-NOM loves Ivan-**gen/ACC** Paul-NOM loves thunder-**nom/ACC**
'Paul loves Ivan.' 'Paul loves thunder.'

(3)a. Pavel boits'a Ivan-**a**. b. Pavel boitsa grom-**a**
Paul-NOM fears Ivan-**gen/GEN** Paul-NOM fears thunder-**gen/GEN**
'Paul is afraid of Ivan.' 'Paul is afraid of thunder.'

Thus on the one hand, in our syntactic analyses we often have to look past phonology and let the structural relations be our guide. On the other hand, we cannot always be guided by syntax to identify Case on a particular NP, and our only guide in this situation is the phonological representation.[2] Because of this inconsistency, the existence of the two distinct levels may be obscured, and m-case may be mistakenly taken for a transparent representation of a-case especially in analyses abstracting away from morphological detail. To avoid this error while accounting for the array of Case facts in a Case-rich language, one must be aware that a-case/m-case mapping is not vacuous, but is an operation at the level of grammar where Syntax and Morphology interface. Hence, we need a principled view of m-case to reflect this operation. It has to include two mappings: from syntactic structure to morphology on the one hand and from morphology to phonology on the other hand. Failure to distinguish the levels of Case results in empirical and/or conceptual problems. I will use Genitive of Quantification (GEN Q) in Russian to illustrate this point.

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[2] Whether in the latter situation there still exists a possibility of non-correspondence of a-case and m-case is a theoretical issue worth to be addressed separately.

2. *Data*

A typical example of GEN Q, where NumP[3] is in the object position of a transitive verb is given in (4):

(4) Ivan kupil tri stul-a
Ivan $\text{bought}_{\text{ACC}}$ 3-ACC chair-sing-GEN Q
'Ivan bought three chairs.'

From this example one may conclude that Numerals in Russian assign a special GEN to N, namely GEN Q. However, in other contexts, we do not see GEN Q assigned. Instead, the Case assigned by the verb percolates throughout the NumP:

(5) Ivan vladejet tri-ma stul-jami
Ivan $\text{own}_{\text{INSTR}}$ 3-INSTR chair-pl-INSTR
'Ivan owns three chairs.'

As these examples illustrate, in Russian both Num and N bear overt Case marking, which can be homogeneous when both the Num and the NP are marked with the same Case, or heterogeneous with a distinct Case marking on Num, as opposed to the NP. Whether the pattern is homogeneous or heterogeneous is determined by the Case context in which the NumP occurs. If it occurs in the context of a verb that controls OBLIQUE Cases (Cases other than NOM and ACC), this Case gets uniformly assigned to both Num and NP, resulting in a homogeneous pattern. Thus, in (5) the verb assigns INSTR(umental) and both Num and N are INSTR. In the context of ACC-assigning verbs, only the Case of the Num is determined by the verb.[4] The NP gets a special GEN(itive) case, GEN Q, assigned by the Num, resulting in a heterogeneous Case assignment.[5] Thus, in (4) the verb assigns ACC and the Num is ACC, but the N is assigned GEN Q. I will term this phenomenon the Case effect, indicating that the Case pattern within the NumP is conditioned by the Case context.[6]

Example (6) illustrates another effect, which I will call the Animacy effect. It shows that the category 'animacy' also plays a role in determining Case assignment in NumPs. In the ACC context, the numerals 'two', 'three', and 'four' are ACC with inanimate nouns, but are GEN with animate nouns:

[3] I am using the label (Num)eral P(hrase) here in a pre-theoretical sense to indicate a phrase consisting of a Num(eral) and NP without commenting on their structural relationship until later in the paper.

[4] Prepositions behave in exactly the same way as verbs: Oblique-assigning ones induce homogeneous and ACC-assigning ones heterogeneous pattern.

[5] I will use the term 'assign Case'; however the precise mechanism by which a DP receives Case, via assignment or checking does not affect the analysis.

[6] I will address NOM context below.

(6)a. Sasha videl tr-**i** dom-**a**.
Sasha saw 3-**ACC** house-sing-**GEN Q**
'Sasha saw three houses.'
b. Sasha videl tr'-**ox** mal'cik-**ov** / * tri malchka
Sasha saw 3-**GEN** boys-pl-**GEN/ ***3-**ACC** boy-sing-**GEN**
'Sasha saw three boys.'

There is also a difference in N. In (6a) the object is glossed GEN Q, while in (6b) GEN. The reason for that is that in (6a) the pattern is heterogeneous, expected if GEN Q is assigned, while in (6b) it is homogeneous, as indicated by the uniform assignment of GEN and also by the plurality of the N, characteristic of OBLIQUE Cases.

Another pattern is given in (7). Here we see that with the numeral 'five', as well as other numerals through 'twenty', GEN Q is manifested as GEN pl(ural), while with the numerals 2-4 as GEN sing(ular).[7] I will refer to this phenomenon as the Numeral effect.

(7)a. Sasha videl **tr-i** dom-**a**
Sasha saw **3**-ACC house-**sing-GEN Q**
'Sasha saw three houses.' .'
b. Sasha videl p'at' dom-**ov**
Sasha saw **5**-ACC house-**pl-GEN Q**
'Sasha saw 5 houses

The Numeral effect allows us to see that GEN Q is a distinct Case from regular oblique GEN. Verbs and prepositions assigning oblique GEN induce a homogeneous pattern (8a), and in this situation the NP is not singular like the NP's to which GEN Q is assigned (10b), but plural, showing that GEN Q has been blocked.

(8)a. Maria otkazalas' ot_{GEN} tr'-**ox** predlozen-**ij** (Homogenous pattern)
Maria declined from 3-**GEN** offer **–PL-GEN**
'Maria declined 3 offers.'
b. Maria vnesla$_{ACC}$ tr'-**i** predlozenij-**a**. (Heterogeneous pattern)
Maria gave 3-**ACC** offer-**sing-GEN Q**
'Maria introduced three suggestions.'

When the NumP is in the subject position and hence is assigned NOM, we find a slightly different pattern from the ACC position. We no longer have the Animacy effect with any numerals, and hence the Case assignment pattern is heterogeneous for both animate and inanimate N's, but we still have the Numeral effect requiring GEN Q sing. for numerals 2-4, and GEN Q pl. for 5 through 20.

[7] Compound Num behave like their right-most element, e.g. 25 would behave like 5.

(9)a. tr-**i** dom**a** / malcik-**a** …
3-**NOM** house-**sing-GEN** / boy-**sing-GEN**
'three houses/ boys'
b. p'at' dom**ov** / mal'cikov …
5-**NOM** house-**pl-GEN**/ boy-**pl-GEN**
'five houses/ boys'

So far in reviewing the data, the upper-case notation was used indicating that morpho-phonological representations of Case found on Num's and N's are transparent in respect to a-case, an implicit assumption adopted in the literature on this phenomenon. I will argue that this assumption is incorrect and has to be revised.

3. Existing Syntactic Accounts

The existing accounts (Babby (1980a, 1984, 1985, 1986, and 1987) and Franks (1994, 1995)) focus on a subset of the reviewed facts, namely the Case effect. Both Babby and Franks handle the pattern as a Case conflict between the verb and the numeral as Case assigners. The generalization they make is that the numeral assigns GEN Q, stipulated to be a structural Case in Russian. GEN Q gets to be assigned only if the verb itself is a structural Case assigner (NOM or ACC). In this situation, the most local Case assigner (Num) prevails inducing a heterogeneous pattern. If the verb is a lexical (oblique) Case assigner, the oblique Case overrides GEN Q. In this situation, the verb prevails, hence the homogeneous pattern

The goal of their analysis is to explain how the type of Cases involved in the conflict leads to particular outcomes of conflict resolution. Since the Case theory within GB/Minimalism doesn't predict the existence of Case conflicts, the existing theory has to be modified in various ways in order to accommodate Russian facts. Thus, for Babby (1986) and Franks (1994) Case agreement within NP is a result of the interaction of two processes: Case assigned by the verb or preposition percolating from N^{max} down to the members of the nominal complex and simultaneous NP-internal Case assignment by a Case assigning head embedded inside NP, such as NumP, assigning GEN to the material it c-commands, namely N^2 ($\neq N^{max}$). The percolation of the Case from N^{max} can be blocked under certain conditions.

The resolution of Case conflict is handled by Babby by a Case hierarchy from oblique (lexical) cases via GEN Q to structural cases. The hierarchy stipulates that in a conflict, a Case on the left in the hierarchy overrules a Case on the right. Thus, GEN Q overrides structural Cases (ACC and NOM), but not oblique cases (DAT, INSTR, LOC, regular GEN).

Franks (1994) tries to improve on this theory by deducing the hierarchy from the notions of Case developed in the then current GB theory. Space limitations prevent me from giving a full description of Frank's account here. Briefly put, he proposes a theory of Case that uses modern developments in the theory, such as the DP hypothesis, but that also deviates from the standard GB theory in some crucial ways. Importantly, in addition to the commonly assumed

dichotomy between structural and inherent Case, he makes another distinction corresponding to traditional descriptive notions of direct and oblique: between configurational and lexical Case. Franks argues that the latter distinction is due to different properties of particular Cases as to whether their features are fixed lexically or configurationally. The former distinction for Franks is independent from the latter and simply has to do with the level of representation at which Case is assigned: D-structure vs. S-structure. Furthermore, he departs from the standard GB assumption that all Structural Case is assigned at S-structure and allows for the existence of D-structure configurational cases. He maintains the standard assumption that once an element is Case-marked, it cannot change its Case.[8] If an already Case-marked element occurs in an environment of structural (S-structure) Case assignment, the structural Case fails to be assigned.

Thus, oblique Cases being lexical and assigned at D-structure percolate throughout the nominal projection marking its every element and resulting in a homogeneous pattern. If there is no oblique Case, at S-structure, ACC or NOM is assigned to the nominal complex by configuration, but GEN Q, which is structural in Russian, is assigned by the numeral to its complement NP because it is its closest Case assigner, resulting in a heterogeneous pattern. Hence, GEN Q in Russian fails to be assigned when in conflict with D-structure (oblique) cases, but wins over S-structure ACC and NOM assigned by configuration.

This elegant reasoning, unfortunately, has both theoretical and empirical flaws. In particular, it cannot handle the Animacy effect, the Numeral effect, and the differences between ACC and NOM positions.

4. Animacy-induced GEN: Syntax or Morphology?

The Animacy effect presents a special problem for the Case conflict theory. It results in a situation when animate N in ACC contexts fail to be assigned GEN Q even though the conflict is between structural Cases.

(10). Ivan liyubit et-**ikh** tr'-**okh** sovremenn-**ix** xudozhnik-**ov**
Ivan loves this-**pl-gen** 3-**pl-gen** contemporary-**pl-gen** artist-**pl-gen**
'Ivan likes these three contemporary artists.'

In (10) the Num is not ACC and the N is not gen. sing, as with inanimate N's. Instead, all members of the nominal are gen. pl. What is the animacy-induced gen in syntax becomes clear when we look at some morphological properties of Russian declension.

The inflectional paradigm of nouns, given in (12), is characterized by a number of syncretisms. Syncretism is seen as erased lines between cells, which share some morphological features, such as gender. Cells that share features are adjacent to each other in the chart. The source of syncretism is conceptualized as an operation at the level of Morphology, such as a change of a feature value, e.g.[+masc]→[-masc], in the matrix that constitutes a site for lexical insertion.

[8] Franks crucially relies on having Case assignment and not Case checking for his model to work.

As a result of such operation, an overlap in the featural composition between categories is created. Thus, in dat, loc, and instr pl we see one morphological gender class instead of three we see in nom sing. We account for that by positing a feature change operation, whereby masc(uline) N's with the features [+masc, -fem] and fem(inine) N's with the features [-masc.,+fem] both become [-masc,-fem], a combination characteristic of neuter N's. Hence, only one inflectional class is found in oblique pl.[9]

The chart shows that animate pl N's are characterized by acc/gen syncretism, while inanim pl N's by acc/nom .

(11)a. …kartiny et'**ix** sovremenn-**ix** xudozhnik-**ov**
painting-pl-ACC this-pl-**gen/GEN** contemporary-pl-**gen/GEN** artist-pl-**gen/GEN**
'… paintings of these contemporary artists.''

b. Ja lyublyu et'-**ix** sovremenn-**ix** xudozhnik-**ov**
I like this-pl-**ACC/gen** contemporary-**pl-ACC/gen** artist-**pl-ACC/gen**
'I like these three contemporary artists.'

(12) **Case/number inflections for the most common declension classes:**

	sing				**plural**			
	fem	**neut**	**masc.**		**neuter**	**fem**	**masc.**	
	inanim/anim	inanim	inanim	anim	inanim	anim	inanim	inanim anim
Nom	a	o		a				
Acc	u		ъ			i		
Gen	i		a		ъ		ov	
Dat	e	u			am			
Loc					ax			
Inst	oj	om			ami			

ъ indicates a Yer vowel

This suggests Animacy-induced gen is none other than ACC, assigned uniformly and realized as gen m-case. Once Animacy-induced GEN is reanalyzed as an instance of homogeneously assigned ACC, the Case-conflict account runs into a problem: even though ACC is structural, it blocks the assignment by the Num of GEN Q.

Thus, we have established that Num's 2-4 with animate N's induce a homogeneous Case assignment pattern. However, Num appear to assign GEN Q sing to inanimate N's. I referred to this anim/inanim split as the Animacy effect. This situation is difficult to account for at the level of syntax. In the next section, I will propose an analysis under which this problem is eliminated

[9] Not all phonological identity can be attributed to syncretism. Thus, phonological identity of the featurally distinct cells (not adjacent in the chart) is attributed to homonymy, e.g. fem sing nom and masc. sing gen.

and will show that inanimates syntactically behave in a manner parallel to animates, and the idiosyncrasy is morphological.

5. Dual in Russian?

As I described earlier, with inanimate N's, we have what looks like a heterogeneous pattern in ACC contexts. Compare (13) and (14). Except for the animacy status of the NP, they are identical. How, then, can we explain the heterogeneous case assignment in (14)?

(13) Ivan liubit eti-x tro-x sovremenni-x xudoznik-ov
Ivan likes this-pl-gen/**ACC** 3-gen/**ACC** contemporary-pl-gen/**ACC** artist-pl-gen/**ACC**
'Ivan likes these three contemporary artists.'

(14) Ivan liubit et-**i** tr-**i** sovremenn-**yje** portret-**a**
Ivan likes this-pl-**ACC** 3-**ACC** contemporary-pl- **ACC** portrait-**sing-GEN Q**
'Ivan likes these three contemporary portraits.'

I propose that it is the familiar homogeneous pattern with a twist. As was mentioned earlier, inanim pl N's are characterized by acc/nom syncretism. In (14) all members of the nominal, except N, are ACC/nom due to this phenomenon. If we reanalyze the N, standardly assumed to be gen. sing, as ACC/nom non-singular, homonymous with gen. sing, the pattern becomes homogeneous and completely predictable.

There are reasons to favor this analysis. First, while GEN Q sing inflection in (15) is identical to GEN sing (–a) in this declension class, in another declension class, it is also identical to acc/nom plural (-i). Thus, for fem nouns we find NP's in a NumP (15a), subjects (15b) and objects (15c) inflected identically.

(15)a. Daniela procitala tr-**i** knig-**i**
Daniela read 3-ACC book-?
'Daniela read 3 books.'

b. Knig-**i** lezat na stol'e.
Book-pl-**NOM** lie on table
'The books are (lying) on the table.'

c. Daniela procitila et-**i** knig-**i**
Daniela read this-pl-**ACC** book-pl- **nom/ACC**
'Daniela read these three books.'

It make sense to reanalyze the number category of the N modified by the Num 2-4 from sing (idiosyncratic) to plural (predictable). We know, however, that plural acc/nom inflection for these N's is different. Perhaps, the Number category we are dealing with here is neither sing nor plural, which would mean that the number distinction in Russian is not binominal (sing vs. plural) but trinominal: sing / plural/ paucal, with the latter denoting a small set. The

position maintaining that Russian in addition to sing and pl with their respective Case paradigms has paucal with a distinct Case paradigm is strongly supported by the historical data.

Old Russian had three number categories: singular, plural and dual. The noun was dual with the numeral 2 and plural with the numerals 3 and up. Eventually numerals 3 and 4 assumed the same pattern as 2 in controlling the feature 'dual' (Ivanov, 1964), thus forming a class that can be called 'paucal'. Interestingly, the numerals inducing 'paucal' number on N (2-4), as well as 'one', unlike 5-20, were adjectival. They did not assign Case to the NP, but agreed with it in Case and gender (the numerals 1 and 2 still have gender agreement in Modern Russian). These Num's behave this way in Modern Russian with animate nouns, as discussed in the previous section. The numerals 5-20, on the other hand, were substantive in that they could be modified by adjectives agreeing with the numerals in gender (fem) and the NP was assigned GEN pl.

Interestingly, for all 'dual/paucal' nouns, acc was syncretic with nom and the affixes were –á for [+masc] nouns and -i for [+feminine], the very same affixes we find on inanimate NP's modified with the numerals 2, 3, and 4 in Modern Russian! Thus, in OR dual ACC /nom and NOM was homophonous with GEN sing. I propose that they still are, and the category dual, which semantically evolved into paucal, still exist in MR.

The homogeneous Case assignment can now be explained by saying that the numerals 1-4 preserved their adjectival categorical status; hence they do not assign Case but agree with the noun in Case. What appears to be gen. sing in ACC context is no other than nom/ACC paucal. Thus, inanimate NP's modified by the numerals 2 – 4 behave in the same manner as animate NP's but with a different, but predictable pattern of syncretism: instead of acc/gen syncretism, inanimates are characterized by the familiar acc/nom syncretism, which for paucal N's is filled with a distinct inflection from acc/nom pl. The adjectival nature of these Num's is best illustrated by the Num 1,
Which displays acc/gen and acc/nom syncretism dichotomy: For Num's 2 – 4, the pattern is the same, but the N is not singular, but paucal.

(16)a. On luybit odn-**ovo** inostran-**ovo** student-**a**
He likes one-masc-**gen/ACC** foreign-**sing**-masc-**gen/ACC** student-**sing**-masc-**gen/ACC**
'He likes one student.'

b. On lyubit odin-**ъ** balet-**ъ**
He likes one-masc-**nom/ACC** ballet-**sing**-masc-**nom/ACC**
'He likes one ballet.'

c. On lyubit dv-**ukh** student-**ov** / dv-**a**
he likes two-**gen/ACC** student-**paucal-gen/ACC** two-**nom/ACC**
ballet-**a**
ballet-**pauc-nom/ACC**
'He likes two students/ballets.'

Only acc/nom paucal affix is distinct from pl.[10] All other forms for paucal (in OR in addition to nom/acc, there were also gen/loc, and dat/instr) were lost and are now syncretic with plural.

There is independent evidence for the preservation of the dual/paucal feature in Russian, as well as in other Slavic languages, such as the existence of phonologically distinct gen. sing with the stress on the stem and ACC/nom paucal (stress on the inflection) in a small class of nouns:

(17)a. Ivan prošel dva šag-à.
Ivan took 2-nom/ACC step-**paucal-nom/ACC**
'Ivan took 2 steps.'
b. bystrota šàg-**a/ ***šagà
quickness step-**sing-GEN**
'quickness of pace'

We find similar facts in other Slavic languages. In Ukranian, we find the dual inflection with numeral 2 preserved in fem and neuter nouns. With N's with movable stress we find the most consistent trace of preserved dual in: in the NOM position and in case of inanimate nouns also in identical to NOM ACC, the stress distinguishes dual from pl: (Durnovo, 1962).

(18)a. dva bratt-**ý** … b. bràtt**y** … c. bràt**a** …
2 brother-dual-NOM brother-pl-NOM brother-sing-GEN

Thus, we reanalyzed GEN Q sing with inanimate NP's modified by the numerals 2-4 as ACC, and hence for both anima and inanim N's, the Num 2-4 induce a homogeneous pattern of Case assignment, a pattern not predicted by the Case conflict theory.

This analysis explains why the Numeral effect, the number alternation (sing vs. pl) conditioned by the cardinality of the numeral, appears only with inanimate nouns. What we see with animate nouns is gen/ACC paucal, not distinct from plural. What we see with inanimate nouns is the preserved distinct nom/ACC paucal. After the numerals 5-20, we see plural with both animate and inanimate nouns as expected. It also explains why the Animacy effect does not apply in NOM: in NOM there is no longer Case syncretism distinguishing anim and inanim N's. Instead, all N's are NOM paucal.

(19)a. Tri malchik-**a** stoyali v biblioteke.
3-Nom boy-**paucal-NOM** stood in library
'Three boys stood in the library.'

[10] For the N's whose nom/acc pl is stressed –á, nom/acc paucal is unstressed –a, and vice versa: e.g. ókn**a** (windows-pl) vs. 2 okn**á** (2 windows-paucal), glaz**á** (eyes-pl) vs. 2 gláz**a** (2 eyes-paucal). For N's with the nom/acc pl –i, such stress shift only characteristic of a small group, such as s'óstr**i** (sisters-pl) vs. 2 sestr-**í** (2 sisters-paucal). For the rest of the N's nom/acc pl and paucal are identical.

b. Tri stol-**a** stoyali v biblioteke.
3-nom table-**paucal-NOM** stood in library
'Three tables stood in the library.'

A result of the emerged homogeneous pattern with the numerals 2-4 in ACC context is that Num's seem to fall into distinct classes in respect to their Case assigning properties. Num's 1-4 behave differently from 5-20 in several respects, in addition to their ability to induce heterogeneous Case assignment pattern and to control sing/paucal vs. plural feature, there is a difference in the behavior of the adjectives.[11] This suggests that the key to understanding the Case assignment in NumP's lies in understanding the nature of the two groups rather than in the properties of a-case. The question remains, why the latter group (5 – 20) exhibits the homo-/heterogeneous Case assignment dichotomy. In order to answer this question, we need to look at the pattern of Case assignment with other types of quantifiers.

5.1. Case Properties of Other Quantifiers

If we look at a list of quantifiers, we will see that they fall into 3 groups in respect to the Case assignment pattern: those who follow the homogeneous pattern, those who follow the heterogeneous pattern, and those that follow a dual pattern conditioned by the Case context. One generalization that can be made from this is that entities in the left-most column are adjectives, while those that are in the middle column are nouns, as indicated by both morphological and syntactic evidence. A question remains what the categorical nature of the entities in the right-most column is. Another question is whether the split between the homogeneous and heterogeneous patterns found with the items in the right-hand column can be handled along the familiar lines of the Case effect

(20). **Case assigning patterns of Russian quantifiers**:

Homogeneous pattern	Heterogeneous pattern	Dual pattern
numerals 2-4	tys'acha (thousand)	numerals 5 - 20
demonstratives	milion (million)	*mnogo* (many)
collective numerals	nouns of measure (killo, pack,etc.)	
ordinal numerals		
nekotoryje (some)		
wh-words (čej (whose),		
ves' (all)		
oba (both)		

First, let's demonstrate the adjectival nature of the elements in the left-most column. The morphological evidence includes the fact that the items in the left-most column follow the adjectival declension. Syntactic evidence would come

[11] I will not be able to address the distinct behavior of adj in the two group of Num's due to space limitations.

from demonstrating that the items in the left-hand column, display concord with the head noun in gender/number/Case. In the plural the gender feature gets neutralized and only number/Case concord is visible. Due to concord, the adjective would assume the pattern of syncretism characteristic of the N they modify: nom/acc if they modify inanimate N's and gen/acc if animate N's.

(21)a. …vs'-**u** et-**u** tolst-**uju** knig-**u**
all-**sing-fem-ACC** this-**sing-fem-ACC** thick-**sing-fem-ACC** book-**sing-fem-ACC**
'… all of these thick books'
b. vs-**ej** et-**oj** tolst-**oj** nig-**oj**
all-**sing-fem-INSTR** this-**sing-fem-INSTR** thick-**sing-fem-INSTR** book-**sing-fem-INST**
'… with all of these thick books'

Now let's look at the items from the middle column. These items are characterized by inducement of a heterogeneous Case assignment pattern including in OBLIQ contexts. Both morphological and syntactic evidence suggests that these items are substantive.

(22)a. On napisal tyc'ach-**u** stix-**ov**.
He wrote thousand-**sing-fem-ACC** poem-**pl-masc-GEN**
'He wrote a thousand poems.'
b. On znamenit tys'ach-**ej** stix-**ov**
He famous a-thousand-**sing-fem-INSTR** poem-pl-**GEN-masc**
'He is famous for a thousand poems.'
c. On napisal mnog-ije tyc'ach-**i** stix-**ov**.
He wrote many-**pl-nom/ACC** thousand-**pl-fem-ACC** poem-**pl-masc-GEN**
'He wrote many thousands of poems.'

The substantive quantifiers, unlike the adjectival ones, do not exhibit feature concord with the head N. Instead, they have inherent Gender (fem), inherent number (sing or pl), assigns GEN pl to its noun complement regardless of the Case context, and can be modified by adjectives agreeing with it in number/gender/Case. This behavior, as well as their inflectional morphology are exactly the same as that of nouns.

Thus, we have seen that for adjectival and substantive quantifiers in Russian the Case effect generalization is not applicable. Now we will try to understand what is responsible for creating the split in the Case assignment pattern for this last group of quantifiers and determine whether Case effect is a valid generalization and Case conflict a valid explanation of it.

5.2. How Real is Case Effect: the Case of 'Many'

Like the Num 5-20, *mnogo* ('many') seems to exhibit the Case effect:

(23)a. Ivan vstretil mnog-o lingvis-ov
Ivan met$_{ACC}$ many-**ACC/nom** linguist-pl-masc.**-GEN**
'Ivan met many linguists.'
b. Ivan vosxischen$_{INSTR}$ mnog-imi lingvist-ami.
Ivan admires many-**INSTR** linguist-pl-masc.**-INSTR**
'Ivan admires many linguists.'

On a closer examination, it turns out that in (23) we are dealing with two distinct quantifiers: an agreeing and non-agreeing (inflected with a default affix –o). As (23) demonstrates, in the ACC context, either form is allowed. The agreeing variety exhibits the homogeneous and the non-agreeing variety the heterogeneous Case assignment pattern in ACC contexts. The N is gen with both varieties, but the agreeing variety, which we know is syntactically ACC (as determined by the ACC-assigning verb) tells us that the whole nominal is ACC/gen.

(24). a. John videl$_{ACC}$ mnog-**ix** linguist-**ov**. / mnog-**o**
John saw many-pl-**ACC/gen** lingist-pl-**ACC/gen** many-**non-agr**
linguist-**ov**
linguist-pl-**GEN**
'John saw many linguists.'
b. John videl mnog-**ije** film-**i** /mnog-**o** film-ov
John saw many-pl-**ACC/nom** film-pl-**ACC/nom/** many-non-agr film-pl-**GEN**
'John saw many films.'

In OBLIQUE contexts, there is an asymmetry: we no longer have two forms, but only one – the agreeing one.

(25)a. John vosxischen mnog-**imi** linguist-**ami**/ film-**ami**.
John admires many-**pl-INSTR** linguists-**pl-INSTR** / film-**pl-INSTR**
'John admires many linguists/films.'
b. John vosxischen *mnog-**o** linguist-**ami** / film-**ami**.
John admires many-**non-agr** linguists-**pl-INSTR** / film-**pl-INSTR**
'John admires many linguists/films.'

What is causing the ungrammaticality of the non-agreeing doublet inserted in the OBL context? We will return to this question shortly.

As is expected, the agreeing doublet has morphological properties associated with plural adjectives (num/Case concord, adjectival declension), while the non-agreeing one has only one default non-agreeing affix *–o,* which we also see on other non-agreeing elements, such as adverbs or 'impersonal' predicates of expletives (null in Russian).

The two stems are homophonous: mnog$_1$- and mnog$_2$-. Each stem is compatible with a different set of affixes. The existence of two doublets of 'many' with only one of them, namely the agreeing one, being able to occur in OBLIQ contexts, creates an illusion of the duality of Case assignment pattern, when OBL is assigned uniformly, while ACC is not. In other words, what we

have instead of the Case effect, is a Doublet effect: concord (homogeneous pattern) with the agreeing doublet, and GEN assignment (heterogeneous pattern) with the non-agreeing one.

There is strong evidence that mnogo-$_1$and mnogo-$_2$ are indeed two different entities. One difference is semantics. The non-agreeing *mnog$_1$-o* can be paraphrased 'the cardinality of the set of linguists that John invited was large'. The agreeing *mnog$_2$-ikh* carries a presupposition of a given set and can be paraphrased as 'many of the linguists' or 'of all the contextually relevant linguists, John invited many '.

Another difference is that only 'mnog$_1$-o' has comparative and superlative and can be modified by degree words:

(26)a. Ivan imejet mnog$_1$-o knig, a Mariya bolsh-e.
Ivan owns many-ACC book-pl-GEN, but Mary more
'Ivan has many books, but Mary does more.'
a'. Ivan imijet mnog$_2$-ije knigi, * a Mariya bolsh-ije.
Ivan owns many-pl-ACC/nom books-ACC/nom, but Mary more-INS
'Ivan owns many of the books, but Mary does more.'

Next, only *mnog$_1$*-o can be part of a wh-phrase 'how many':

(27)a. Kak mnog-o knig imeyet Ivan?
How-ACC many$_1$-non-agr books-GEN owns Ivan
b. *Kakije mnog-ije knig-i imeyet Ivan?
How-ACC/nom many$_2$-ACC/nom books-ACC/nom owns Ivan
'How many books does Ivan own?'

Finally, only mnog$_1$-o can be used with the exclamatory operators:

(28)a. Ivan imeyet stolko/tak mnog-o knig!
Ivan owns so / such many$_1$-ACC books-GEN
b. *Ivan imeyet stolk-ije/tak-ije mnog-ije knig-i
Ivan owns so-ACC/nom/ such-ACC/nom many$_2$-INSTR books-INST
'Ivan owns so many books!

Both are adjectival: *mnog$_{2-}$* because of its adjectival declension and concord with the N, and *mnog$_{2-}$* because it has a comparative (*bolshe*)[12]and superlative form. Interestingly, in its superlative form it requires the presence of the overt noun 'number' (*kolitchestvo*) and behaves like a fully agreeing adjective:

(29) naibolsh-eje kolitchestvo film-ov
many-superl-neuter-sing-NOM quantity-neuter-sing-NOM film-masc-pl-GEN
'the largest number of films'

[12] There is stem allomorphy: mnog-o (many), bolsh-e (more), nai-bolsh-e-je kolitchestvo (the most).

If their category is the same, what causes their distinct behavior? I will adopt an assumption from Kayne (2002) that *tak mnogo* ('so many') is obtained by raising within DP, which must be licensed by an appropriate head. It is reasonable to conclude that this licenser is unavailable in Russian in case of $mnog_2$, but available for $mnog_1$ (the non-agreeing doublet). This head, as is proposed by Kayne for English 'many' and 'few', is a silent noun 'NUMBER', a quantity word that is modified by 'many' and which we hear in its superlative form.

For the non-agreeing stem '$many_1$-' there is a requirement that it modifies only the null element KOLITCHESTVO (NUMBER). This demystifies the heterogeneous pattern we see with this doublet, which as I mentioned earlier occurs only in ACC or NOM contexts. GEN pl on N that we see with $mnog_1$-*o* is assigned by the silent N NUMBER and hence is an instance of adnominal GEN. The incompatibility of the silent N with OBLIQ context accounts for $many_1$ being restricted to non-oblique contexts.[13]

6. Numerals 5 - 20

If the dualism of Case assignment pattern does not exist with 'many', but is only an illusion due to the existence of two distinct agreeing and non-agreeing doublets, then the numerals 5-20 remain the only group that seem to exhibit Case effect. To handle the heterogeneous pattern, we have to decide between assuming the numeral a Case assigning head or a modifier which does not modify the noun directly. These numerals lack substantive properties like those of '*thousand*' or the numerals 5-20 in Old Russian, which had inherent gender and number and could be modified by adjectives. It would be undesirable to postulate an entirely new category to accommodate the data of a small language-specific group of numerals. It is plausible that the numerals in question are adjectival, like their '$many_1$-'counterpart, and the dual Case assigning pattern is due to the existence of two doublets: one modifying N directly and the other that doesn't. Instead, the latter modifies a phonologically null element, along the lines of Kayne's (2002) unpronounced noun NUMBER, which assigns GEN pl to its complement noun as expected for a noun and as we discussed in the previous section for '$many_1$'. The numeral and the null N are assigned ACC by the verb. The null N assigns GEN pl to its complement DP. The numeral does not display concord with the animacy and the phi-features of the noun because it is outside of the DP. A number of syntactic tests support this analysis, but cannot be included here due to space restrictions. This analysis has the advantage over the previous analyses in being the most parsimonious and empirically accurate.

[13] The incompatibility of NUMBER and OBLIQE contexts can be handled by a difference in featural composition between oblique and nom: the former is specified for Case features, while the latter is default (unmarked in the Jakobsonian sense) containing no Case features. ACC is syncretic with NOM and therefore inherits its featural composition. The unmarked Case morpheme can be filled with a null element, while the marked one can't and requires an overt stem to anchor the obligatorily overt affix.

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