

Case and Agreement with Genitive of Quantification in Russian *

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Abstract: The paper examines case and agreement with Russian genitive of quantification, which is assigned within numeral NPs. I show that the central properties of Russian numeral NPs in which genitive of quantification is assigned (GQ NPs), including the optionality of agreement with GQ subjects and the impossibility of agreement with GQ subjects involving approximative inversion, can be accounted for while keeping the categorial status of GQ NPs constant, contrary to the standard analysis, where agreeing and non-agreeing GQ subjects are assumed to differ in their categorial status. The source of the optionality of agreement with GQ subjects is located in the numeral's case properties. I also show that several rather complex case and agreement paradigms in Russian can be accounted for while maintaining the hypotheses that Russian morphological case is a direct reflection of abstract Case and that Russian morphological agreement is a direct reflection of abstract agree(ment), which provides evidence for these hypotheses.

Keywords: abstract Case, agree(ment), acyclic adjunction, Burzio's generalization, defective intervention, morphological case

1. Introduction

The paper examines one of the thorniest issues of Russian morphosyntax, namely case and agreement with genitive of quantification (GQ). GQ is the term used to refer to the genitive case higher numerals in Russian assign to the noun that follows it in structural case contexts, GQ assignment being blocked in inherent case contexts. Example (1) illustrates GQ. The example illustrates another interesting property of Russian GQ NPs: when they function as subjects, they only optionally agree with the verb.

- (1) *Pjat' devušek rabotali/rabotalo tam.*
five girls(gen) worked(pl)/(sg) there

The goal of the paper is to examine structure and case/agreement properties of Russian numeral NPs. To account for the difference between inherent and structural case in the context of GQ, I will appeal to θ -theory and economy. Regarding the optionality of agreement with GQ subjects I will locate its source in the numeral's case properties, which will enable me to keep the categorial status of GQ subjects constant, contrary to the standard analysis, where agreeing and non-agreeing subjects are assumed to differ in categorial status. I will also explore consequences of my analysis for theories of agreement and case. In

section 2, I examine case, and in section 3, I turn to agreement. Section 4 is the conclusion.¹

2. Case

Examples in (2)-(4) show what happens when a numeral NP occurs in a structural case context in Russian. (Since the numeral *one* never assigns GQ and always agrees in case with the following noun, I illustrate only the case agreeing, non-GQ option for this numeral.)

- (2) *Ivan kupil odnu mašinu.*
Ivan bought one(acc) car(acc)
- (3) *Ivan kupil pjat' mašin.*
Ivan bought five cars(gen)
- (4) * *Ivan kupil pjat' mašiny.*
Ivan bought five cars(acc)

With *one*, both the numeral (Q) and the noun receive their case from the verb. However, with higher numerals like *five*, the noun receives genitive, referred to as GQ.² This pattern is traditionally interpreted as indicating that only higher numerals have the ability to assign GQ. As for inherent case contexts, when a numeral NP occurs as an object of an inherent case assigning verb, both the noun and the numeral (*one* as well as higher numerals) bear the inherent case in question.

- (5) *Ivan vladeet odnoj fabrikoj.*
Ivan owns one(instr) factory(instr)
- (6) *Ivan vladeet pjat'ju fabrikami.*
Ivan owns five(instr) factories(instr)
- (7) * *Ivan vladeet pjat' fabrik.*
Ivan owns five factories(gen)

The descriptive generalization is that GQ overrides structural ((3)-(4)), but not inherent case ((6)-(7)). It is well-known that there is a VP/PP parallelism in this respect, accusative assigning Ps patterning with accusative assigning Vs, and non-accusative Ps with non-accusative Vs.

- (8) *čerez odnu minutu/pjat' minut*
 in one(acc) minute(acc)/five minutes(gen)
- (9) *o odnoj knige/pjati knjigax*
 about one(loc) book(loc)/five(loc) books(loc)

There are many analyses of GQ. For space reasons I will discuss here only Franks (1994), which builds on the insights of Babby (1987) (on Russian GQ, see also Babby 1980, 1984, 1985, 1986, Bailyn 2003, Bošković in press, Corbett 1979, 1983, Franks 1995, 2003, in press, Franks and Pereltsvaig 2004, Halle 1994, Neidle 1988, Pesetsky 1982, Rakhlin 2003, and Rappaport 2001, among others). Franks takes Russian morphological case to be a reflex of abstract case. He assumes Chomsky's (1986) theory of the latter, on which structural case is assigned at SS and inherent case at DS, and proposes GQ is a structural case in Russian. In (3)-(4), both the V and Q could assign case to *books* at SS. The Q assigns its case because it is closer (i.e. it is a closer Case-assigning governor) to *books*.³ As for (6)-(7), here the V assigns its inherent instrumental at DS, before the case-assigning ability of the Q is activated. Hence, *factory* bears instrumental. Franks's analysis elegantly captures the above paradigm. However, it faces several theoretical problems. One obvious problem concerns its reliance on DS/SS, given Chomsky's (1995) arguments that these two levels should be eliminated. In the next section I will present a modification of Franks's analysis which does not require appealing to DS/SS (see also fn. 3). The analysis will still be in line with Franks's position that morphological case reflects abstract Case, which makes Russian, and more generally Slavic, a great tool for studying abstract Case. I will also follow Franks in assuming that locality is responsible for GQ in (3). In other words, the Q rather than the V assigns case to the following noun because it is closer to it. Before discussing how this locality effect exactly works, let us consider why the locality effect is apparently voided in inherent case context.

2.1. Genitive of quantification in inherent case contexts

Recall that Franks (1994) accounts for the overriding effect of inherent case on GQ by adopting Chomsky's theory of inherent case, which is crucially based on assuming DS, a theoretically problematic assumption. I will therefore adopt a modification of Franks's account of the overriding effect of inherent case which will also be based on Chomsky's (1986) approach to inherent case, but will not require appealing to DS. Following this approach to inherent case, I assume a verb that assigns inherent case will θ -mark its object iff it assigns it the inherent case in question. The GQ derivation from (7) then cannot converge because the

inherent case-assigning V will fail to θ -mark its object. Since economy of derivation compares only convergent derivations (see Chomsky 1993), the fact that case-licensing of *factory* is more economical in (7), where *factory* is case-licensed by the Q, than in (6), where it is case-licensed by the verb (more precisely, case-licensing of *factory* requires shorter movement in (7) than in (6), see section 2.2.) is irrelevant: the only available option is the one on which the verb assigns instrumental case to its object, i.e. (6). This option is therefore forced. The overriding effect of inherent case is thus accounted for without appealing to DS/SS. In the next section I turn to the overriding effect of GQ on structural case. I will also address the issue of the structural representation of numeral NPs in Russian.

2.2. Genitive of quantification in structural case contexts

Let us now consider more closely the claim that the Q rather than the V assigns case to the following N in (3)-(4) because it is closer to it. To see how the locality analysis works we will need to become more precise about the structure of the constructions under consideration.⁴

It is well-known that *one* in examples like (2) and higher numerals in inherent case contexts like (6) (that is, all non-GQ assigning numerals) are morphologically similar to adjectives, agreeing with the following noun in case and ϕ -features (gender and number). To represent this agreement, I adopt one of the traditional analyses of adjectives for such numerals, namely, I assume that they are APs located in SpecNP, undergoing spec-head agreement (SHA) with the noun.⁵

(10) $[_{NP} AP [_{N'} N]]$ AP pattern

For GQ assigning numerals, the simplest analysis seems to be to assume that they project a QP taking NP as their complement, which they case-mark, on a par with case-assigning verbs and prepositions.

(11) $[_{QP} [_{Q'} Q NP]]$ QP pattern

Franks (1994), however, argues that this analysis has to be modified to account for case properties of numeral NPs occurring in the complement of the distributor *po*. *Po* is a preposition whose complement is distributed over some individuated argument.

- (12) *Každyj učeník polučil po odnomu rublju.*
 each student received distributor one(dat) ruble(dat)

Franks argues that *po* assigns structural dative, which I also assume. With *one*, both the numeral and the N bear dative. As for *five*, both options in (13) are acceptable, while (14) is not.

- (13) *po pjat'/pjati rublej*
 dist. five/five(dat) rubles(gen)
- (14) * *po pjati rubljam*
 dist. five(dat) rubles(dat)

On the (somewhat archaic) dative option, *five* gets case from *po*. As for the *pjat'* option, Franks (1994) argues *pjat'* is a caseless form here since no case but dative can be assigned to it in this context. More precisely, being inside a PP, a PP-external case assigner cannot case-license it since outside case licensing relations quite generally cannot penetrate into a PP. On the *pjat'* option, (13) can be analyzed on a par with (3) (see (11)). The *pjati* option, however, raises an interesting problem. Assuming the same element cannot at the same time assign case and be assigned case, as Stowell (1981) argues,⁶ the dative option in (13) provides evidence that the Q does not itself assign GQ. Rather, Franks argues for the structure in (15), where *po* case-marks (in an ECM configuration) *five*, with a null head assigning GQ.

- (15) $[_{PP} [_P \text{Po} [_{QP} \text{pjati}(\text{dat}) [_Q \text{e NP}]]]]$

Adapting this proposal to the structures in (10) and (11), we get the following structures for the AP and the QP option respectively (I refer to the null, GQ assigning head as F for ease of exposition, leaving its precise nature open).

- (16) $[_{PP} [_P \text{Po} [_{FP} \text{QP} [_F \text{F NP}]]]]$ QP pattern (i.e. GQ pattern)
- (17) $[_{PP} [_P \text{Po} [_{FP} [_F \text{F} [_{NP} \text{AP} [_N \text{NP}]]]]]]$ AP pattern (i.e. case-agreeing pattern)

On the QP pattern, instantiated by (13), the numeral is located in SpecFP, with F assigning case to the NP. As before, on the AP option, instantiated by (14), the numeral is located in SpecNP, undergoing SHA with

the N. For the sake of uniformity, I propose that FP is always present on both the QP and the AP option.⁷ I furthermore propose that, similar to V (V+v for Chomsky 1995), F assigns case to its complement only if it has a specifier. In other words, I am extending the independently needed mechanism responsible for Burzio’s generalization to F.⁸ I furthermore assume that the feature that determines whether a numeral is adjectival or not is not present in the numeration (see Bošković 1997 for an analysis where some elements (i.e. functional elements) are not present in the numeration). A consequence of the assumption is that since they have the same numeration (and do not cause a truth-conditional difference), (16) and (17) “compete” with respect to economy of derivation.⁹ Let us then consider how case-licensing will proceed in the structures in question. We have several possibilities: First, case-licensing will be either covert or overt. If the former, the NP will either undergo feature movement to F in (16)¹⁰ and *po* in (17), as in Chomsky’s (1995) system, or covert phrasal movement, as in Chomsky’s (1993) system (see below for discussion of its landing site), or undergo Agree with the case assigners without actual movement, as in Chomsky’s (2000) system. If case-licensing movement is overt, the NP in (16) would undergo overt phrasal movement to (additional) SpecFP or to the Spec of an AgrP immediately dominating FP (if AgrPs are not eliminated from the grammar). As for (17), under the overt movement analysis, the NP would move to either SpecPP or the Spec of an AgrP dominating PP (AgrpP).¹¹ I will simply assume that case-licensing in the examples under consideration takes place through feature movement. The reader should, however, bear in mind that the gist of the analysis to be given can be maintained under the alternative accounts summarized above. Recall that under the Move F analysis, the NP in (16)-(17) undergoes feature movement to its case assigner. The non-GQ structure in (17), where the NP is case-licensed by *po*, will then have the derivation in (19), with the NP undergoing Move F to *po*. On the other hand, the GQ structure in (16), where the NP is case-licensed by F, will have the derivation in (18), with the NP undergoing feature movement to F.

- | | | |
|------|---|------------|
| (18) | $[_{PP} [_{P'} Po [_{FP} QP [_{F'} \overset{\boxed{\quad}}{F} NP]]]]$ | QP pattern |
| (19) | $[_{PP} [_{P'} Po [_{FP} [_{F'} F [_{NP} AP [_{N'} N]]]]]$ | AP pattern |

Obviously, the case licensing movement of the NP is shorter on the QP derivation than on the AP derivation. I therefore suggest that given economy of derivation, which requires every movement to be as short as possible, the availability of the former blocks the latter. In other words, the QP (i.e. GQ) pattern is forced in structural case contexts.¹²

To sum up, since case licensing is more economical on the QP than on the AP option, everything else being equal the QP (i.e. GQ) option is preferred, hence the ungrammaticality of (14). Note that, as in Franks’s

analysis, under the current analysis *pjati* is assigned dative by *po*, while *pjat'* is a caseless form in (13). This will become important in section 3, where I argue that *pjat'* is ambiguous between a syncretic nominative/accusative form (which is its standard analysis; note that it morphologically fits the paradigm as a nominative/accusative form) and a caseless form. An important distinction between the current and Franks's analysis in light of the discussion in section 3 is that under the current analysis, the object of *po* has the same categorial status on both the dative and the caseless option in (13). For Franks, the numeral is always in the Spec of a null Q, the QP being dominated by a DP only on the *pjat'* option. Due to the presence of the DP the numeral is too deeply embedded within the complement of *po* to be case licensed by it. On the dative option, the QP is not dominated by a DP, as a result of which the numeral is located in the Spec of the complement of *po*, a familiar ECM configuration. Positing a categorial distinction between the *pjati* and *pjat'* options to account for (13) is actually unnecessary. Franks assumes that *po* only optionally assigns dative, which suffices to account for the two options in (13).

The FP analysis can be easily extended to the VP ((3)-(4)) and the PP case ((8)-(9)). As in the *po*-construction discussed above, the AP option is less economical than the QP option (i.e. it requires longer movement) in the VP/PP contexts. The parallelism between *po* constructions and their VP/PP counterparts is in fact complete if we assume that *pjat'* is ambiguous between a caseless form and a syncretic nominative/accusative form. *Pjat'* in (3) and (8) can then be either a caseless form or an accusative form, on a par with the two options in (13). Recall also that the QP option is ruled out in inherent case environments like (6)-(7) and (9) for θ -theoretic reasons, as discussed earlier.¹³

To sum up the discussion so far, I have presented an account of the GQ paradigm in Russian that, in contrast to Franks's (1994) analysis, does not require appealing to DS/SS and adopting case assignment (instead of case checking) and case percolation (see fn. 3). Under the current analysis, the GQ option is forced in inherent case environments for θ -theoretic reasons, while the non-GQ option is forced in structural case environments by economy of derivation. Throughout the discussion I've maintained the assumption, also adopted by Franks, that morphological case reflects abstract Case, which makes Slavic, which abounds with case morphology, a perfect tool for exploring Case theory. The fact that we have been able to account for a rather complex paradigm while maintaining the assumption in question provides evidence that the assumption, which also seems inherently more interesting than its alternative (no relation between morphological and abstract case), is on the right track.

3. Agreement

I now turn to agreement in GQ constructions, confining myself to contexts where GQ is assigned (the QP option). As noted in Franks (1994), Russian numeral subjects only optionally agree with the verb.

- (20) *Dvadcat' samolětov pereleteli/pereletelo granicu.*
 twenty planes(gen) flew.across(pl)/(sg) border

Franks argues that on the singular (sg) option, the subject is a QP and stays in SpecVP, with SpecIP being filled by a null expletive (we are dealing here with a transitive expletive structure), while on the plural (pl) option, the subject is a DP and moves to SpecIP.¹⁴ He gives a number of arguments for a height distinction between sg and pl subjects (see also Pesetsky 1982 and Neidle 1988). Thus, he shows only pl subjects can bind subject-oriented anaphors (22) and control PRO in examples like (23)-(24). Furthermore, the Comtrace effect is operative only with pl subject extraction (25), which follows if pl subjects are extracted from SpecIP and sg subjects from SpecVP (see Koopman and Sportiche 1991).

- (21) *Pjat' ženščin smotreli/smotrelo na Ivana.*
 five women(gen) looked (pl)/(sg) at Ivan
- (22) *Pjat' ženščin smotreli/*smotrelo na sebja.*
 five women(gen) looked (pl)/(sg) at themselves
- (23) *PRO vozvraš čajas' domoj, pjat' mal'čikov zašli/*zašlo v magazin.*
 returning home, five boys(gen) dropped.in(pl)/(sg) to store
- (24) *Pjat' ženščin staralis'/*staralos' PRO kupit' ètu knigu.*
 five women(gen) tried (pl)/(sg) to.buy this book
- (25) *Skol'ko čelovek_i Ivan думаet čto t_i pročitalo/*pročitali ètu knigu?*
 how.many people(gen) Ivan thinks that read(sg)/(pl) this book

Though most of these tests are not completely conclusive and/or are based on phenomena that are not very well-understood (the strongest argument may be the one based on (25)),¹⁵ there does seem to be an issue to be accounted for here, so I will also assume a height difference between sg and pl subjects (see section 3.2. for an account of this difference that does not assume a difference in the categorial status between agreeing and non-agreeing numeral subjects).

3.1. Approximative inversion

Bearing this in mind, I turn to the approximative inversion construction (AXP), where the noun appears before a GQ assigning numeral and where the sg option is forced.¹⁶

- (26) *Studentov pjat' *sdali/sdalo èkzamen.*
students five passed(pl)/(sg) exam
'About five students passed the exam.'

To account for (26), Franks (1994) argues AXP involves NP adjunction and stipulates that an NP can adjoin to QP, but not to DP. (Recall that for Franks, a sg subject is a QP, and a pl subject a DP.) I'd like to propose an alternative analysis that maintains Franks's claim that AXP involves adjunction but eliminates the stipulation in question, always allowing AXP adjunction to the maximal projection of the numeral phrase. This is in fact a necessary step to take under the suggestion made in section 2 that all numeral NPs have the same categorial status (we then cannot make a distinction between sg and pl subjects with respect to their categorial status), which is certainly a simpler position to take than its alternative, on which different numeral phrases would have different categorial status. The alternative analysis of the obligatoriness of the sg option with AXP is based on Takahashi's (1994) claim that adjunction to the head of a non-trivial chain is disallowed, since as a result of such adjunction, the head of the chain and copies left by its movement would no longer be identical.¹⁷ Takahashi's ban rules out the derivation on which the numeral phrase moves to SpecIP (the agreeing option) and then the NP adjoins to it in (26). The problem does not arise on the derivation on which the subject stays in SpecVP (the non-agreeing option). What about the derivation on which NP adjoins to the numeral phrase before the latter moves to SpecIP? On this derivation the copies of the subject in SpecVP and SpecIP are identical, so that Takahashi's ban is not violated. However, this derivation is ruled out if adjunction not only can be acyclic (i.e. late), but in fact must be acyclic, as argued in Stepanov (2001a,b), since AXP adjunction then could not precede movement of its target to SpecIP. The current analysis of agreement in AXP should then be taken as providing additional evidence for Stepanov's late adjunction hypothesis.¹⁸ Note also that AXP is possible with objects, which is not surprising assuming that they need not move.¹⁹

- (27) *Ivan kupil knig pjat'.*
Ivan bought books(gen) five
'Ivan bought about five books.'

Interestingly, Franks (1995) notes that AXP is impossible with inherently case-marked numeral objects and objects containing *one*, which have the AP pattern structure (see (10)/(17). Note that (28)-(29) are acceptable without AXP.)

- (28) a. * *Direktor upravljaet fabrikami pjat'ju.*
 director manages factories(instr) five(instr)
 ‘The director manages about five factories.’
- b. * *Oni privezli tonnu odnu.*
 they brought ton(acc) one(acc)
 ‘They brought about one ton.’

I suggest the ungrammaticality of (28) should be related to the fact that AXP is impossible with (non-postposed) adjectives, as Yadroff and Billing’s (1998) (29) shows(see this work for relevant discussion).

- (29) * *knig pjat' starinnyx*
 books(gen) five old
 ‘about five old books’

Recall that under the current analysis, numerals in case-agreeing examples like (28) are treated like adjectives, i.e. they are located in the same position as prenominal adjectives. It is then not surprising that, like adjectives, they block AXP. (Note that under the proposal that adjectives and adjectival numerals are located in SpecNP, AXP in (28)-(29) cannot involve movement of a maximal projection. For relevant discussion, see also Bošković 2005a).²⁰

To summarize, in this section I have presented an account of the obligatoriness of the sg option with AXP based on Takahashi’s ban on adjunction to moved elements and Stepanov’s late adjunction hypothesis. We have also seen that, like case-marking properties of numerals in the complement of *po* and the binding/control data from (22)-(24) (see fn. 15), the obligatoriness of the sg option with AXP can be accounted for without assuming different categorial status for various numeral NPs. In the next section we will see that the same holds for the optionality of agreement with non-AXP numeral subjects.

3.2. On the optionality of agreement with Russian numeral subjects

I now return to the optionality of agreement in (20). Recall that on Franks's analysis, the categorial status of the subject differentiates the sg and pl options (more precisely, it is responsible for the height difference between the two kinds of numeral subjects, which is in turn responsible for the agreement difference). I would like to propose that what differentiates the sg and pl options is not the subject's categorial status, but whether or not nominative is assigned, in line with Chomsky's proposal (see George and Kornfilt 1981 for the original suggestion and Wurmbrand and Bobaljik 2003 for a recent discussion) that nominative and subject agreement are correlated. Strong evidence for the correlation is provided by (30)-(31) (see also Franks 1994 for relevant discussion).

- (30) *Pjat' ètix devušek rabotali/rabotalo tam.*
 five these(gen) girls(gen) worked(pl)/(sg) there
- (31) *Èti pjat' devušek rabotali/*rabotalo tam.*
 these(nom) five girls(gen) worked(pl)/(sg) there

In (31), where the nominative case is clearly assigned, the sg option (i.e. non-agreement) is unavailable, which provides strong evidence that assignment of nominative induces agreement (see below for a more detailed analysis of the case options for the demonstrative in (30)-(31)).

What about (30)? Under Franks's QP/DP analysis, where agreeing subjects are DPs and non-agreeing ones QPs (cf. also fn. 14), we can assume that the DP projected by a null D that dominates the numeral phrase bears nominative, which forces the agreement option, given nominative-agreement correlation. However, taking the morphological-case-as-a-reflex-of-abstract-Case hypothesis seriously disfavors positing a hidden nominative (see also Bošković 2005a for arguments against the presence of DP in Russian NPs). Moreover, I will show below that once we take the nominative-agreement correlation seriously, there is no need to posit a categorial distinction between non-agreeing and agreeing numeral subjects.

To that end, I will adopt the FP analysis from section 2, on which the categorial status of numeral subjects is kept constant not only in GQ constructions, but also in constructions where GQ is not assigned (i.e. on this analysis, all numeral NPs have the same categorial status). I will argue that in (30), the pl (agreeing) option is the only possibility in the presence of a nominative. The sg (non-agreeing) option is the only possibility in the absence of a nominative due to the correlation between nominative case and subject agreement. The analysis is based on the claim that *pjat'* is morphologically ambiguous between a syncretic nominative/accusative form, which is its standard analysis (recall that *pjat'* morphologically fits the case paradigm as a nominative/accusative form), and a caseless form, evidence for the latter being provided by

(13), where *pjat'* cannot bear either nominative or accusative, *po* being a dative case assigner (see the discussion in section 2.2).²¹ In light of the proposal, illustrated in (32), consider (33).

- (32) *Pjat'*: a. nominative b. accusative c. caseless
- (33) *Pjat' devušek rabotali/rabotalo tam.*
 five girls(gen) worked(pl)/(sg) there

The proposal is that on the sg option we are dealing with the caseless *pjat'*, and on the pl option with the nominative *pjat'*. In other words, subject-verb agreement is never optional. If *pjat'* bears nominative case it is obligatory, and if it is caseless it is impossible. In constructions like (31), the presence of the nominative then forces the pl option.

Let us spell out the analysis in more detail. Recall that the categorial status of numeral phrases is always FP, with F assigning GQ and the numeral (QP) located in SpecFP. Consider then the abstract structure in (34), which represents the agreement option for (33).

- (34) I [_{FP} QP [_F F NP]]]]
 {pl} {nominative, pl}

I agrees with the QP, which is plural, and checks nominative case of the QP. Given that, as argued by Franks (1994), agreeing subjects, like the one in the derivation under consideration, move to SpecIP, while non-agreeing subjects remain in SpecVP, there are now two options, which depend on the status of the EPP in Russian (or the grammar more generally).

- a. There is no EPP (or it does not hold in Russian), but nominative requires licensing in SpecIP, as argued in Bošković (2002, 2005b) and Epstein and Seely (1999).²² The QP, which needs to move to SpecIP, pied-pipes the FP the way the wh-phrase pied-pipes the whole DP in *Whose books did you buy?* (It is possible that F may be an affix on Q(P), just like 's is an affix on *who*, which would license pied-piping.)
- b. The EPP holds (or optionally holds in Russian, see below), and is correlated with agreement in Russian. QP, which agrees with I hence must move to SpecIP, pied-pipes FP (see above).

The non-agreeing option for (33), which involves a caseless Q, is represented in (35).

(35) I [_{FP} QP [_F F NP]]]
 {sg} {caseless, pl}

Since I does not case-check the QP it cannot agree with it. The numeral phrase does not move to SpecIP. We have the following options to complete the derivation of (35).

- a. There is no EPP (or it does not hold in Russian), so SpecIP remains unfilled. I bears default 3.p.sg.
- b. The EPP holds, SpecIP being filled by a null expletive. I either bears default 3.p.sg specification or agrees with the expletive (regarding agreement, on the latter option the expletive would behave like the agreeing French expletive *il* (and bear nominative), rather than English *there*).
- c. The EPP optionally holds in Russian, but it is correlated with agreement. Assuming that I bears the default 3.p.sg specification, since there is no agreement/nominative case-checking, the EPP would not hold in (35), hence SpecIP can remain empty.

The optionality of agreement in (33) is thus accounted for. The important feature of the analysis is that the category of the subject is kept constant. In contrast to Franks (1994), under the current analysis the numeral phrase has the same category in agreeing and non-agreeing constructions. What differentiates the two is the case of the numeral, a nominative numeral obligatorily leading to the agreement option and a caseless numeral to the non-agreeing option. The crucial ingredient of the analysis is the correlation between agreement and nominative case. We have seen that once the correlation, which has strong independent justification, is taken seriously there is no need to posit a categorial distinction between agreeing and non-agreeing numeral subjects. Recall also that, in addition to the optionality of agreement with numeral subjects, the obligatoriness of the non-agreement option with AXP subjects (see section 3.1.), the binding/control data from (22)-(24) (see fn. 15), and case-marking properties of numerals in the complement of *po* (see section 2.2.), all of which have been previously argued to require positing a categorial difference between various numeral phrases (see Franks and Pereltsvaig 2004), can be accounted for without positing such a difference.²³

Turning now to slightly more complicated examples, consider (36), which contrasts with (30).

(36) * *Pjat' èti devušek rabotali tam.*
 five these(nom) girls(gen) worked(pl) there

Why can't a post-numeral *these* bear nominative, in contrast to a pre-numeral *these* (see (31))? I suggest that we are dealing here with a defective intervention effect, on a par with English (37).

- (37) a. * Students_i seem it was told t_i that Mary knows French.
 b. * There seem it was told students that Mary knows French.

To demonstrate that (36) and (37) can be accounted for by the same mechanism, let us first consider Chomsky's (2000) account of (37). The relevant part of (37) is given in (38).

(38)	I	it	students
	ϕ -features (uninterp.)	ϕ -features (interp.)	ϕ -features (interp.)
		no case	case (uninterp.)

It prevents *students* from checking uninterpretable ϕ -features of I.²⁴ Given Chomsky's Activation Condition, which requires X to have an uninterpretable feature to be able to undergo movement/feature checking, *it* cannot check ϕ -features of I (its uninterpretable case feature, which would have made it visible for checking, has already been checked off). However, since *it* has ϕ -features and is closer to I than *students*, which could in principle check ϕ -features of I, *it* prevents *students* from entering into a relation with I. This is an example of *defective intervention* (it is defective because the intervener cannot do the job itself; still, it prevents another element from doing it.) (36) can be accounted for in the same way. Consider (39), which gives the relevant part of (36). (During the discussion below the reader should bear in mind that we can prevent I from licensing nominative on *these* by preventing it from agreeing with *these*, given the nominative-agreement correlation. Note that I will discuss only the caseless Q derivation, since if *five* checks I's nominative case there will be no source for the nominative on *these*, so this derivation is easily blocked.)

(39)	I	five	F	these
	ϕ -features (uninterp.)	ϕ -features (interp.)		ϕ -features (interp.)
		no case		case (uninterp.)

Just like I could not enter into a ϕ -feature checking relation with *students* in (38) due to the intervening *it*, I in (39) cannot enter into a ϕ -feature checking relation with *these* due to the intervening *five*, which asymmetrically c-commands *these*. Like *it* in (38), *five* in (39) itself cannot check ϕ -features of I since being caseless, it is inactive. Still, it prevents *these* from checking ϕ -features of I (the nominative case of *these* would be checked as a reflex of ϕ -feature checking) because *five* bears ϕ -features and is closer to I than *these*. (36) and (37) thus receive completely uniform accounts. In particular, we have seen that Chomsky's

defective intervention account of (37) readily extends to (36). This point is of some theoretical importance. Defective intervention is not particularly conceptually appealing. It seems that the null hypothesis should be that X blocks Y from entering into a relation with Z only if X itself can do the job in question, which is not the case with defective intervention. As a result, there have been attempts to analyze (37) without employing defective intervention, the hope being that this would enable us to dispense with the mechanism altogether. Particularly interesting is Vukić's (2003) analysis of (37), which makes no use of defective intervention. In fact, having accounted for (37) without defective intervention, Vukić argues that the mechanism in question should be dispensed with. However, since in his account of (37) Vukić crucially appeals to the expletive nature of the intervener, his analysis of (37) cannot be extended to (36). (36) thus may provide evidence that defective intervention is indeed needed (see also Chomsky 2000 regarding a somewhat different case from Icelandic and Boeckx 2000b for an analysis of the Icelandic data that does not involve defective intervention).

Note that the intervention problem from (36) does not arise in (31), where *these* also bears nominative but it precedes *five*, which means that *five* is not closer to I than *these*.²⁵ Notice also that, as expected, with demonstrative-initial numeral NPs, the agreement must be with the demonstrative, as Neidle's (1988) (40)-(41) show. (Note that the pl form of the verb cannot express gender distinctions.)

- (40) *Dvadcat' odin student prišel/*prišli.*
 twenty-one student(nom.masc.sg) came(masc.sg.)/(pl)
- (41) *Èti dvadcat' odin student prišli/*prišel.*
 these(nom) twenty-one student(masc.sg) came(pl)/(masc.sg)

Recall that *one*, and the same holds for higher numerals ending in *one*, does not assign GQ. Furthermore, numerals ending in *one* require the following noun to be singular, and the same holds for the verb agreeing with *one*-numeral NPs. This is illustrated in (40). Significantly, the presence of a nominative plural *these* forces plural agreement on the verb. This is expected under the current analysis. Adopting one of the options for the pre-numeral demonstrative from fn. 25, under the current analysis (41) has the structure in (42) (recall that *one*-numerals, which are adjectival in nature, are located in SpecNP).

- (42) $[_{IP} [_{FP} \text{Èti F } [_{NP} \text{dvadcat' odin student}]] \text{prišli}]$

Since the demonstrative asymmetrically c-commands the NP it is closer to I prior to movement to SpecIP,

hence the demonstrative, rather than the NP, undergoes agreement with the verb.

(41) is also interesting in that it represents a rare case of disagreement within a traditional noun phrase. Notice also that assuming that the maximal projection of the traditional noun phrase should be considered an extended projection of the NP, we cannot assume ϕ -features of the NP percolate upward to the extended projection of the NP (FP in (42)). If this were the case the FP in (42) would be masc.sg. Given Fukui's (1997) approach to locality, on which XP is closer to a c-commanding element Y than anything XP dominates, the verb (more precisely, I) would then also have to be singular.²⁶ I conclude, therefore, that the extended projection of the NP in (41) cannot have the same ϕ -feature specification as the NP itself. Finally, note that even in the case of disagreement within the traditional NP, the verb (more precisely, I) agrees with the structurally highest element bearing ϕ -features within the NP.

Interestingly, as noted in Franks (1994, 1995), in contrast to Russian, the demonstrative is marked for genitive in SC even when it precedes a numeral in a GQ configuration.

- (43) *Ovih/*ove pet djevojaka radi tu.*
 these(gen)/(nom) five girls(gen) works here

I suggest that the difference should be correlated with another difference between Russian and SC. As shown in (44)a, taken slightly modified from Franks (1995), and (44)b, inherent case must be preserved under passivization in SC, but not in Russian. (The verb in (44)a-b assigns instrumental case. The reader is referred to Fowler 1987 for relevant discussion of Russian).

- (44) a. *Fabrika/*fabrikoj upravljaet-sja našimi druž'jami.*
 factory(nom)/(instr) manages-refl. our(instr) friends(instr)
 'The factory is managed by our friends.' (Russian)
- b. *Fabrikom/*fabrika se upravlja od strane naših drugova.*
 factory(instr)/(nom) refl. manages by our(gen) friends(gen)
 'The factory is managed by our friends.' (SC)

We may be dealing here with a situation where two cases are assigned to the same NP, instrumental (before movement) and nominative (after movement). However, for morphological reasons only one can be overtly realized. SC realizes the first case (instrumental) and Russian the second case (nominative). The contrast between (43) and (31) can be accounted for on a par with (44): *these* receives two cases, genitive (in its base

position, presumably via SHA with the N) and nominative (after movement in front of the numeral; following Franks (1994), I assume that *these* is generated below the numeral, but can move to its left). As in the case of (44), in SC the first case (genitive) is morphologically realized and in Russian the second case (nominative). (For discussion of agreement with numeral subjects in SC, the reader is referred to Leko 1986, Franks 1994, 1995, Wechsler and Zlatić 2003, and Bošković in press.)

4. Conclusion

I have presented an account of GQ in Russian which, in contrast to Franks's (1994) account, does not require appealing to DS and SS, adopting case percolation and case assignment instead of case checking, and assuming different categorial status for various numeral subjects. Throughout the paper, I have maintained the hypotheses that Russian morphological case is a direct reflection of abstract Case and that Russian morphological agreement is a direct reflection of abstract agree(ment). The fact that we have been able to account for several rather complex case and agreement paradigms while maintaining these hypotheses provides evidence for the hypotheses in question, which, as noted above, seem inherently more interesting than their alternatives (no relation between morphological and abstract case, and morphological agreement and abstract agree(ment)). I have also provided additional evidence for the obligatory late adjunction hypothesis, the correlation between nominative case and subject agreement, and the mechanism of defective intervention.

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Notes

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1. The paper examines only GQ in Russian. GQ in other Slavic languages does not work in exactly the same way as in Russian. In fact, there are several rather interesting differences among Slavic languages regarding case and agreement in GQ constructions. The reader is referred to Bošković (in press) for relevant discussion of Serbo-Croatian (SC) (i.e. for an extension of the analysis of Russian GQ given below to SC) and Franks (1995, in press) for a broader Slavic perspective.

2. *Pjat'* is assumed to be either a syncretic nominative/accusative or a caseless form; see Franks (1994). For the moment I disregard the issue, returning to it in section 3. Note also that I ignore paucal numerals 2-4, due to the controversy regarding whether they pattern with *one* or *five*. (Compare Babby 1987 and Franks 1994 with Rakhlin 2003. Rakhlin argues that what is standardly analyzed as gen.sg. GQ with 2-4 is actually paucal nominative/accusative.)

3. See Franks (1994) for details of the analysis. Let me just note that assuming case assignment rather than Case checking and adopting case percolation are crucial ingredients of Franks's analysis, both of which are unnecessary under the analysis presented below. The reader is referred to Bošković (in press) for an argument that case checking is empirically superior to case assignment based on GQ in SC. I provide a case where a traditional case assigner (P) checks case against a traditional case assigner (V), a state of affairs which I show can be easily accommodated under the case checking theory, but not under the case assignment theory, due to the inherent asymmetry in the case licensing relation that holds under the latter approach.

4. Note that both the implementation of the locality analysis and the structure of numeral NPs adopted below are rather different from Franks's (1994) analysis.

5. The analysis to be given below can be restated under other analyses of adjectives, including Abney's (1987) A-as-the-head analysis. For discussion of the structural position of Slavic adjectives, which includes arguments against an Abney-style analysis for Russian and SC, see Bošković (2005a).

6. In the case-checking approach, such an element would have to be doubly lexically specified for case.

7.I thus differ from Franks (1994), who assumes his null Q head only for the *po* construction. For him, GQ numerals are sometimes specs and sometimes heads. For me, they are uniformly specs (see also Franks and Pereltsvaig 2004).

There is another reason (in addition to uniformity) to posit FP not only for all GQ examples, but also for the non-GQ structure in (17). Consider (i), where the predicative NP can be either nominative or instrumental.

- (i) *Ivan byl durak/durakom.*
 Ivan was fool(nom)/(instr)
 ‘Ivan was a fool.’

Franks and Pereltsvaig (2004) argue that on the instrumental option, the predicate NP is in fact a bare NP, while on the nominative option it contains additional functional structure. Significantly, even the presence of adjectival numerals forces the nominative option, although adjectives are in principle not incompatible with the instrumental option. (Note that higher numerals ending in *one* behave like *one* in relevant respects, i.e. they are adjectival. The numeral cannot be naturally used in the context in question. What is important for us is the nom/instr contrast. See section 3 regarding agreement with twenty-one.)

- (ii) a. *Oni byli ??dvadcat' odin umnyj mal'čik/*dvadcat' odnim*
 they were twenty one(nom) smart(nom.sg) boy(nom.sg)/twenty one(instr)
umnym mal'čikom.
 smart(instr.sg) boy(instr.sg)
 ‘They were twenty-one smart boys.’
- b. *Oni byli umnye mal'čiki/umnymi mal'čikami.*
 they were smart(nom.pl) boys(nom)/smart(instr.pl) boys(instr)

If Franks and Pereltsvaig’s proposal regarding the nom/instr alternation in (i) is correct, (ii) can be interpreted as indicating that the presence of a numeral forces the presence of a functional projection above NP, which I take to be FP. (It is possible that F and the numeral have to undergo feature-checking at some point, regardless of whether the numeral is a Q or an adjective.)

8. We can think of the Fs in (16)-(17) as the active (case-assigning) F (16) and passive/ergative (non-case assigning) F (17). (In work in preparation I extend the FP analysis from (16) to adnominal genitive, placing

its “assigner” in SpecFP.)

9.I appeal here to Chomsky’s (1995) assumption that only structures with the same numeration can be evaluated together with respect to economy of derivation.

10.Note that this would be shorter movement than movement to *po*.

11.See Bošković (2001, 2004b,c) for arguments for the existence of an AgrP in PPs. I argue case assignment “within” PP proceeds in the same way as “within” VP. More precisely, I argue for the existence of overt object shift (movement to SpecAgrpP) in the traditional PP, on a par with object shift (movement to SpecAgroP) in the traditional VP.

12.The above analysis relies on global economy (i.e. comparison of derivations). However, it is possible to eliminate the globality. If, being a potential case licenser, F always counts as a potential target for movement of the NP, movement to *po* for case licensing would be a dispreferred option even in (17) itself, i.e. no comparison with (16) would be needed. (However, failure of proper case licensing on the shorter derivation in (17) should not take it out of the comparison set).

Note also that I assume that the choice of case a noun is taking with from the lexicon, dative or genitive in the case in question (under the checking theory, the noun would enter the computation fully inflected for case, unless we assume Chomsky’s 2000 case valuation), does not affect syntactic computation. This is a standardly held assumption, motivated by (i), where Last Resort prevents a pronoun from moving from a case position to a case position although the original case position cannot license the case the pronoun is inflected with, and (ii), an instance of superraising where a nominative element is an intervener for accusative Case-licensing movement. (In other words, what matters for syntactic computation is that an NP has case, not which case it has. This is made explicit in Chomsky 2000.)

- (i) * He_i seems to t_i Peter is ill.
- (ii) * I believed him_i to seem it was told t_i Mary is sleeping.

13.I assume that an inherent case verb has to assign its case to the whole argument, including the N, to be able to θ -mark it. More precisely, I assume that FP is ignored regarding θ -role assignment (inherent case as well, given their association) since it is semantically inert. The relevant phrases, then, are those that are immediately dominated by FP (those where the first XP dominating them is FP), i.e. Spec and complement of FP. (This could be instantiated through θ -feature percolation from these positions to FP.) Note also that

assuming Freidin and Babby's (1984) Principle of Lexical Satisfaction, which requires verbs that are lexically specified as assigning inherent case to assign it, instead of Chomsky's (1986) approach to inherent case, which ties together inherent case and θ -role marking, would not suffice here since under the former (but not under the latter) approach we would incorrectly rule in (i), where the verb assigns instrumental, but not to the whole argument. ((ii) is also problematic; see also Franks 2003, in press.)

- (i) * *Ivan vladeet pjat'ju fabrik.*
 Ivan owns five(instr) factories(gen)

Note that argumenthood is irrelevant to *po*-constructions like (the dative) (13), since *po* is not a θ (and inherent case) assigner. (See Franks 1994. Recall that Franks argues *po* assigns structural dative). However, since *po* is not semantically inert it cannot be ignored like FP can (see the above discussion). This means that the instrumental case of the verb in Babby's (1986) example in (ii) has to be checked against *po*, which is impossible.

- (ii) * *Oni vladejut [_{PP} po inostrannym jazykom/ (pjat'ju/pjati) inostrannymi
 they know dist. foreign(instr) language(instr) five(instr)/five(dat) foreign(instr)
 jazykami].
 languages(instr)*

14. Franks thus assumes only DP subjects move to SpecIP (cf. also Pesetsky 1982). Note that adapting the proposal to the current analysis would entail positing a DP above the FP in (16) only on the agreement/movement to SpecIP option.

15. The problem with the anaphor test is that we find the same pattern with non-subject oriented anaphors.

- (i) *Pjat' studentov pomogali/*pomogalo drug drugu.*
 five students(gen) helped(pl)/(sg) each other

The anaphor in (i) is c-commanded by the matrix subject regardless of whether the latter is located in SpecIP or SpecVP. One way to account for (i) is to adopt Chomsky's (1986) anaphor movement hypothesis, assuming the anaphor undergoes LF movement to the matrix I. As a result, only the pl subject, located in

SpecIP, c-commands it. A similar analysis is applicable to (24) if PRO moves to the matrix I, as argued in Martin (1996).

16. Franks (1994) notes that, as expected given the discussion in the previous section, AXP subjects cannot bind subject-oriented anaphors and control PRO.

17. Takahashi demonstrates that the claim has ample empirical motivation. Among other things, he shows that it captures the subject condition effect and, more generally, the impossibility of movement out of moved phrases.

18. One of Stepanov's arguments for late adjunction concerns (ii). (i) shows that adjunction can be late. According to Lebeaux (1988), the condition C violation in (ia) arises before wh-movement. The problem does not arise in (ib) because the clause containing *John* is an adjunct, hence can be inserted acyclically after wh-movement. Stepanov argues that the fact that, in contrast to (iib), condition A is apparently violated in (iia) provides evidence that the adjunct clause must in fact be adjoined after wh-movement (given late adjunction, *the lawyers* cannot bind *each other* at any point of the derivation.) I refer the reader to Stepanov (2001a,b) for an explanation why adjunction must be late, which applies to both base-generated adjunction (as in (iia)) and adjunction via movement (as in (26)).

- (i) a. * Which argument that John_i is a genius did he_i believe?
b. Which argument that John_i made did he_i believe?
- (ii) a. * What evidence that each other_i's friends brought up at court did the lawyers_i refuse to talk about?
b. The lawyers_i refused to talk about the evidence that each other_i's friends brought up at court?

19. AXP also seems to be possible with scrambled elements, which is expected under base-generation analyses of scrambling such as Bošković and Takahashi (1998) (see also Bošković 2004a for its application to Slavic).

20. There is an alternative analysis of the contrast in (27)-(28). Suppose that Russian has overt object shift, i.e. that objects case-licensed by V move overtly to SpecAgroP (or SpecvP). Given that, as Stjepanović (1997) argued based on SC, inherently case-marked NPs do not differ from structurally case-marked NPs in this respect, the object in (28), which is case-marked by the verb, has to move overtly, in which case AXP

in (28) violates Takahashi's ban on adjunction to moved elements. (Note that inherent case-assigning Ps pattern with inherent case-assigning Vs in disallowing AXP to their complement, see Franks 1995:170. The above analysis can be extended to PPs given Bošković's 2004b,c arguments that case licensing by Ps proceeds in the same way as case licensing by Vs; more precisely, I argue that in languages in which verbal objects move overtly to SpecAgroP, prepositional objects move overtly to SpecAgrpP.) As for (27), it also violates Takahashi's ban on the derivation on which the numeral is case-licensed by the V since on this derivation the whole object has to move overtly (see section 3.2., where I argue that the case licensing movement of the numeral pied-pipes the whole numeral NP). However, (27) is grammatical on the caseless numeral derivation, on which no part of the object is case licensed by the verb, hence no movement to SpecAgroP takes place. The object shift analysis can also explain the fact that AXP is possible with adjuncts even when they bear inherent case (cf. Franks 1995), given the standard assumption that adjuncts never move for case reasons. (I assume that AXP in (ia) involves adjunction to the maximal projection of the traditional PP.)

- (i) a. *My pridëm časov v pjat'.*
 we arrive hours(gen) at five
 'We shall return at about five o'clock.'
- b. *Ubili ego vystrelami pjat'ju.*
 killed him shots(instr) five(instr)
 'They killed him with about five shots.'

This fact remains unexplained on the parallelism-with-adjectives analysis. On the other hand, this analysis can easily explain a contrast with AXP in argumental PPs, illustrated by Franks's (1995) (ii): while such AXP is fully acceptable with Ps that assign structural case (iib), it is degraded with Ps that assign inherent case (iia), where the numeral is adjectival. This contrast is problematic for the overt object shift analysis since PP arguments should not have to undergo overt movement.

- (ii) a. ?? *On rabotal zadačami nad pjat'ju.*
 he worked problems(instr) on five(instr)
 'He worked on about five problems.'
- b. *Ja verju bogov v pjat'.*
 I believe gods(gen) in five

‘I believe in about five gods.’

21. As discussed in Babby (1987), in Old Russian, *pjat'* was a feminine noun. In Modern Russian it has been reanalyzed as a Q. It is possible that the reanalysis has not been fully completed, the case-marked option for *pjat'* being a remnant of the Old Russian nominal *pjat'*. (Note that the reanalysis has been completed in SC, where higher numerals lack the case-marked option altogether, see Franks 1995 and Bošković in press.)

22. For arguments against the EPP in general, see Boeckx (2000a), Bošković (2002, 2005b), Epstein and Seely (1999), Grohmann et al (2000), and Martin (1999). (Note that, as argued in Stjepanović 1999, 2003, under certain well-defined circumstances nominative NPs that move overtly to SpecIP can be pronounced in a lower position in PF (through lower copy pronunciation), which means that PF realization in a lower position does not necessarily rule out the possibility of overt syntax movement to SpecIP for subjects. In fact, Slavic postverbal subjects may quite generally involve lower copy pronunciation, see Bošković 2005b and Stjepanović 2003.)

23. Franks and Pereltsvaig (2004) suggest that *bol'sinstvo* ‘majority’ is problematic for the current analysis. See, however, Bošković (in press) for an account of *bol'sinstvo* (and *tysjača* ‘thousand’) that is fully in line with the current, no-difference-in-the-categorial-status analysis.

24. Since Agree is a prerequisite for Move (see Chomsky 2000), I disregard below movement of *students* to SpecIP in (37)a (a violation occurs already when I undergoes Agree with *students*, see below), focusing on the agreement relation between matrix I and the NP, which is in fact the only relevant relation in (37)b.

25. There are several possibilities for analyzing (31). One possibility is that *these* is located in an additional SpecFP. Another possibility is that FP is dominated by another projection which hosts *these*. Note that the demonstrative still must be part of the subject, i.e. it does not move outside of the subject, since clausal adverbs cannot intervene between the demonstrative and *five*. Furthermore, movement to SpecIP still has to pied-pipe the whole subject.

- (i) * *Èti včera pjat' devušek rabotali/rabotalo tam.*
these(nom) yesterday five girls(gen) worked(pl)/(sg) there

26. Prior to movement to SpecIP, i.e. at the point when Agree between I and the numeral subject takes place, FP would be the closest element with ϕ -features to I. If FP is considered inactive to undergo Agree (see the

above discussion of the Activation Condition), it would still block Agree with a lower element, so that we should get here default 3.p.sg specification on the verb (the same point could actually be made with respect to (34)).