

The Case of Q*

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1. Introduction

The relationship between morphological form and syntactic structure has been of great interest recently in theoretical linguistics, especially with respect to morphologically-rich languages like the Slavic languages. Some views have argued for an independent morphological module, without which the grammatical description cannot be complete. Others, such as Starke (2001), are embarked on a program of reduction if not elimination of the morphological component. On such a conception, morphology can be entirely done away with, and its apparent effect shown to be part of the Syntax module. The implications are far-reaching, and it is too early to determine the exact consequences, but the project is startling enough to give it serious consideration. And it lies at the core of what I try to do in this article, namely reduce morphological case (at least in non-lexical instances) to syntactic features. In the end, I will *not* pursue the Starke-style approach but rather will adopt a version of the restrictive view of the inventory of functional categories, based on Chomsky 1995, 2000, whereby there is a limited set of functional categories, namely C, T, D, little *v*, Neg, Aspect, and Q, and will also assume the non-universality of projection of these categories argued for in Thráinsson 1996 and Bošković 1997.

The core idea is this--(Slavic) morphological case, is nothing more than the uninterpretable spell-out on nominals of the core functional categories. The approach is certainly not new, but the claim will be made in a form stronger than I have seen elsewhere for case in general, although it has important precursors for particular case instances.

The best known example concerns the relationship between Nominative case and Tense. Typically, since early GB days, the

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account has been that [+T] (INFL) *assigns* Nominative case. Within Minimalism, the framework changed to make it so that T *checks* Nominative case, and more recently, that (non-defective) T is a PROBE that seeks a NOM goal and Agrees with it, sometimes requiring movement. But I want to follow Pesetsky and Torrego (2001) who take it one step further and claim that Nominative case *is* (uninterpretable) Tense as morphologically manifested on Nominals. This is given in (1)

- 1) *The nature of nominative case* (Pesetsky and Torrego 2001: 361)
Nominative case is *u*T on D

(1) accounts directly for the well-known asymmetry of T-->C movement known from English WH-movement, given in (2):

- 2) a. What did Mary buy?
b. *What Mary bought?
c. *Who did buy the book? (without focus on *did*)
d. Who bought the book?

In (2d), the movement of the Nominative WH-phrase to SpecCP, *both* satisfies the WH requirement of C *and* the T requirement of C that (normally) trigger inversion in (non-Nominative) WH questions such as (2a). In Pesetsky & Torrego's account, Nominative case isn't *assigned* by T, Nominative case *is* T and so T-->C is unnecessary in subject questions.

With respect to case on internal arguments, Accusative has been linked to AspectP in various accounts. Thus Svenonius (2001) says "Pesetsky and Torrego 2001 have proposed that nominative case is uninterpretable tense; I suggest here that accusative (and dative, in Icelandic) is uninterpretable Inner Aspect, or Aktionsart." Richardson (2003) makes a similar case for Russian, linking Accusative with telicity through AspP.

My goal here is to try to add something to this discussion by taking seriously the possibility that *all* instances of morphological case in languages like Russian, except perhaps for purely lexical case, are simply the spell-out of features (usually) associated with particular functional categories. Thus I follow the spirit of Svenonius (2001) who claims, quite generally, that "case does not encode features of noun phrase interpretation, *but it is not uninterpretable either*" (emphasis mine). This central idea is presented in two differing forms in (3):

- 3) a. Each (non-lexical) morphological case is the (uninterpretable) spell-out of a core functional category.
- b. There is a single, unique feature-based source for all (non-lexical) cases

The claim in (3) has an important counterpart -- that cases do *not* break down into further features in the sense of Jakobson (1957), Franks (1995), Müller (2003) *in the narrow syntax* any more than the functional (and lexical) categories themselves do. The feature bundles adduced to account for syncretism are part of the morphological component, or are spell-out instructions, and play no role in the derivation from Numeration to Logical Form.

2.0 Genitive is Q

Following (3), this article investigates the possibility that just as Nominative case *is* T, and Accusative case *is* (inner) Aspect, so Genitive case *is* the uninterpretable spell-out of Q (in the sense of quantification), as shown in (4):¹

- 4) *The nature of Genitive case*: Genitive case is uQ on N/D^2

The core instances of genitive case that I want to include under (4) are given in (5-10) below, from Russian. The instances I have in mind I will label as Gen of Negation, Partitive Gen, Intensional Gen, "do-in-quantity" verbal Gen, Comparative Gen, Adnominal Gen, and Quantificational Gen.

- 5) Genitive of negation:

Boris	ne	čitaet	knig.
Boris	NEG	reads	books- gen
Boris doesn't read books."			

¹Note that I am not claiming this to be an isomorphic relationship, just as not all tensed sentences show Nominative case, so are there QP structures where no overt genitive is found. But I will try to maintain the unidirectional version, namely that all (non-lexical) Genitives are in QPs.

²I take no stand on the functional structure of nominals, as it does not bear on this article. For claims that both NP and DP can be case-marked, see Franks & Pereltsvaig (this volume).

6) Verbal argument genitives:

- a. Partitive: Ja xoču čaj.
 I want tea-**gen**
 "I want (some) tea."
- b. Intensional: My ždem peremen!
 we wait changes-**gen**
 "We are waiting for changes!"
- c. "do in quantity": narezali xleba / *xleb
 NA+cut bread-**gen** /*-Acc
 "We cut lots of bread."

7) Comparative genitive:

umnee Saši
 smarter Sasha-**gen**
 "smarter than Sasha"

8) Adnominal genitive:

- a. kusok xleba
 piece bread-**gen**
 "a piece of bread"
- b. razrušenie goroda
 destruction city-**gen**
 "the destruction of the city"

9) Quantificational genitive:

- a. mnogo problem
 many problems-**gen**
 "many problems"
- b. pjat' jazykov
 five languages-**gen**
 "5 languages"

In the next sections, I will address first the Genitive of Negation, then the other verbal genitives, comparatives and adnominals, and finally the quantificational genitive.

3.0 The Q-Account of the Genitive of Negation

Let us begin with the Genitive of Negation, because there have been important precursors of the Q account for Gen Neg, particularly Pesetsky 1982 and Pereltsvaig 2001. The major issue in the Russian genitive of negation is the distribution of the

construction's availability. As is well known, the Russian genitive of negation is possible, though not required, on the direct object of transitive verbs and on the subject of unaccusative verbs, and impossible on the subject of transitive and unergative verbs.

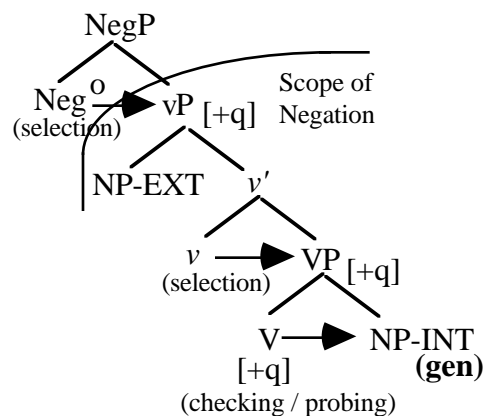
Pesetsky's (1982) idea was that Gen of Neg is assigned not by negation itself but by the (null) head of a QP phrase *licensed* by negation. This article, then, represents a kind of resurrection of the Pesetsky idea and its extension to a range of other instances of Genitive. First, we must review the important aspects of the Russian genitive of negation for any account (for discussion see Brown 1999), shown in (10):

10) What to account for in (Russian) **GenNeg**:

- A. Configurational restrictions (underlying objects only)
- B. Apparent optionality
- C. Existential interpretation of Gen-Neg

A possible first version of the configuration I have in mind for Gen of Negation is given in (11):

11) [q] approach to Gen Neg (version A)



I am assuming the unaccusativity hypothesis of Gen Neg, whereby the domain of Gen Neg is the underlying object position, which is generally (though not universally) agreed upon (Pesetsky 1982, Bailyn 1995, 1997, Babyonyshev 1996, Brown 1999, Harves 2001, 2002 and elsewhere.)

Notice that in (11) I have not (yet) included a QP with a null head, but have simply left the relevant Gen assigning [q] feature in the verbal head position (where it has been selected for by

higher negation). However the presence of an actual (null) Q head in the structure will in fact play a role in what follows.

The account, which I will refer to as the [q] approach, works in quite a simple fashion: The high Neg head in the structure has a particular selectional property, namely that it allows the selection of a VP (shell) with a [q] feature associated with it. This feature in turn is responsible for Gen Neg. In the absence of Negation, the VP (shell) lacks this feature and genitive on the object is impossible (unless the verb itself has a different instance of [q] associated with it, which we will see below is in fact exactly what happens with verbal argument Genitives). This feature is transferred to the verb from Neg by a "chain of selection," a process familiar from matrix verbs selecting, say, subjunctive CP complements, whose heads in turn select subjunctive TP complements, whose own heads in turn, finally select a certain kind of VP, with the appropriate head. Thus through this kind of selection chain, we move from the presence of the functional category of Negation high to Genitive case marking low.

There are several advantages to the [q] approach to Gen Neg. The first is that it maintains a configurational account of the exclusion of Gen Neg on external arguments because those arguments are simply out of the case-assigning domain of the genitive case, under a strict c-command approach. The older approach, which we can call the direct NegP approach, is found in various forms (Bailyn 1997, Brown 1999 and elsewhere). The difficulty for the direct NegP approach is that because it is committed to a direct relationship between NegP and Genitive case, it is stuck with the paradox that the distribution of the Genitive of Negation is simply not the same as the distribution of negative polarity items in Russian (the former excluding external arguments and the latter not). In Bailyn 1997 the case assigning category was NegP itself, and its proposed low position was the source of considerable criticism, mostly based, as I say, on the possibility of NPIs on external subjects, outside of the scope domain of negation on such accounts.

Brown (1999) solved the NPI problem by placing NegP above the base position of the external argument, allowing NPIs there just as in object position. But the mechanism required in Brown's account to then exclude GenNeg from *external* arguments is not much more than a restatement of the facts -- requiring features such as [Vmax] and [Pred] to allow Gen of Negation -- features that essentially restate the distribution -- (Vmax occurs only when an internal argument is involved and therefore "excludes" the external argument.) Such NegP

accounts fail because you can't have it both ways, unless the work is divided, and this is exactly what the [q] account achieves -- NegP is high in the tree, as most people working on the syntax of negation agree is necessary, but what is directly responsible for the genitive marking, though related to the NegP, is not NegP itself, but rather [q]. That restricts us to the selection domain, namely internal arguments, which is the result we need. And this is the part of the account that goes back to Pesetsky (1982) and is maintained, in different form, in Pereltsvaig (2001).

A further advantage of the [q] account is the ability to maintain an important aspect of Bailyn 1997 (in addition to configurational exclusion of External Arguments appearing in Gen Neg). I have in mind that these accounts associate Genitive and Accusative case occurrences with *distinct positions*, allowing us to analyze the differences in interpretation in a configurational manner, something any account of Gen Neg should be able to do. If Acc objects raise to a position outside of existential closure, the resulting chain can be interpreted as either existential or not, depending on whether the head or tail of the chain is involved. On the current account, the non-existential interpretation can be achieved by association of the Accusative itself with the higher Acc probing head, which I assume, following Richardson (2003), to be an AspP above the domain of existential closure. (The same will follow for Nominative, which is associated with T, also outside existential closure). Indeed, of the configurational cases, the only instance in which both the probe and the goal associated with the case are fully within the domain of existential closure is Gen Neg, and therefore the prediction would be that such arguments are always interpreted as existential, which is the general consensus for Gen Neg. So the Bailyn (1997) tree-splitting approach to getting the interpretation right on Gen Neg arguments can be maintained, and a system such as Harves 2002, involving *features* of existential closure, becomes unnecessary.

Third, the [q] account illuminates the comparative and historical situation. Recent linguistic theory has achieved significant results in our understanding of syntactic change and parametric variation, the strongest claim being that historical change does not (directly) involve change in constructions themselves, but rather involves changes in the internalized grammar of speakers, whose possible outputs then lead to apparent changes in individual constructions. The most promising work in this area, going back to Lightfoot 1979, and including Bailyn 1998, Whitman 2001 and others, is that

syntactic change derives (only) from change on particular lexical items, and that it is the feature make up of functional categories that are the locus of such changes, which start in small moments of reanalysis and lead to widespread surface changes in the grammar.

The Russian genitive of negation is characterized by its non-fully grammaticalized status, as opposed to Polish where it is essentially obligatory, regardless of interpretation, or Serbo-Croatian on the other hand, where it is essentially absent, except in the case of the negated form of *imati*.

12) Polish (obligatory) genitive of negation (Błaszczak 2001)

- a. Ewa czyta gazety / *gazet.
Ewa reads papers-**acc** / *papers-**gen**
'Ewa reads newspapers.'
- b. Ewa nie czyta gazet / *gazety.
Ewa NEG reads papers-**gen** / *papers-**acc**
'Ewa does not read newspapers.'

13) Serbo-Croatian (lack of) genitive of negation:

((a-b) from Franks & Dziwirek 1993)

- a. Nisam čitao ni jedan časopis
neg-aux read not even [one journal]-**acc**
"I didn't read even one journal."
- b. *Nisam čitao ni jednog časopisa
neg-aux read not even [one journal]-**gen**
"I didn't read even one journal."
- c. Nemam pojma
not have idea-**gen**
"I have no idea."
- d. *Nemam pojam
not have idea-**acc**
"I have no idea."

Clearly if the Polish/ Russian/ Serbo-Croatian Gen Neg have a common historical source, and if the recent ideas about syntactic change are on the right track, then we have to look for a *feature* of a functional category as responsible for the case's appearance. One could counter that the direct NegP accounts can achieve this result just as easily. But this would only be true if the cases of full disappearance of Gen Neg (as in S-C) or its full grammaticalization (as in Polish) had different properties. The trouble with a direct NegP account of the historical situation is that Polish has Long-Distance Gen Neg (as discussed extensively in Błaszczak 2000), as exemplified in (14):

14) a. Polish (Błaszczak 2000)

Polak	nie	ma	obowiazku	znac	jezyka
Pole	NEG	have	obligation	know	language
		francuskiego			
		French-GEN			

"A Pole has no duty to know the French language."

b. Russian

???Poljak	ne	objazan	znat'
Pole	NEG	obliged	to know
		francuzskogo	jazyka
		French	language-GEN

"A Pole is not obliged to know the French language."

(14) shows that in Polish Gen Neg is possible in an embedded clause in the presence of higher negation in the matrix clause. (The equivalent Russian sentences are not grammatical, as shown in (14b)). Błaszczak maintains that this is a problem within a Probe/Goal system for the cycle, or the Phase Impenetrability Condition (PIC), which says that elements inside a phase are not accessible to the outside. Here, the higher Neg head can reach down, as it were, into the embedded clause, which should not be possible. The [q] account resolves this issue by maintaining that the relationship between the [q] and the genitive marked Nominal is always local, in fact, it is the most local relationship available, namely that between a head and its complement. It is the *selection chain* that has to differ between Russian and Polish. The solution then is akin to claiming that Polish has "negative CPs" selected by the appropriate higher V, within which the [q] feature is transmitted down to the embedded verb by a selection chain, whereas Russian does not. There is no cycle or Phase problem here, and standard parameterization of selectional relationships will suffice to account for why a QP can be licensed in a Polish embedded clause by a matrix NegP whereas in Russian it cannot.³

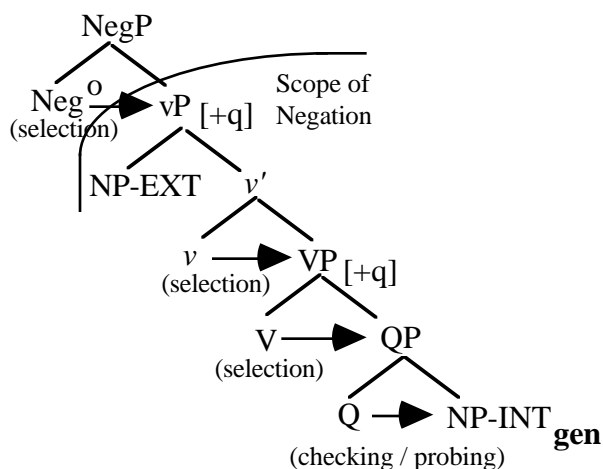
³With respect to SC *nemam pojma*-Gen ('I have no idea') (see ex. (13c)) it would appear that the restricted distribution of Gen Neg in SC can also be handled better by the [q] system than by the direct NegP system in that the necessary [q] feature can simply be associated lexically with the negated form

The advantages of the Q account over a NegP account are summarized in (15):

- 15) a. No additional features necessary to exclude Gen neg on external arguments
- b. Existential closure accounts of interpretation of Gen Neg can be maintained
- c. Distinct position account of (non) optionality can be maintained
- d. Historical change and micro-parametric variation can be accounted for

Notice that the picture given in (11) shows a [q] verbal complex *probing* for a genitive NP. There is, however, another way of looking at it, namely that the V complex with inherited [q] feature *selects* a QP object rather than an NP object, and it is the head of that QP that provides for genitive case on its NP complement, as is shown in (16):

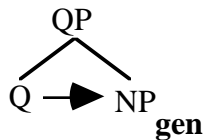
16) [q] approach to Gen Neg (version B)



of *imati*, (which is conveniently written as a single word as opposed to other instances of negation.) So NegP heads in this language simply do not have the same selectional properties as they do in Russian or Polish and only a lexical item with [q] in its feature bundle can probe for a genitive argument. So this is advantage 3 of the [q] account over the NegP account.

The difference between Version A (in (11)) and Version B (in (16)) is perhaps not crucial to the Genitive of Negation per se, but is crucial to the attempt to unite this genitive with the other kinds of genitives, especially the quantificational genitive, where all of the case assigning "action" occurs within a QP structure. In Version A, it is still the verb, with the [q] feature, that "assigns" or probes for Genitive. In Version B, it is the (null) head of QP that assigns or probes for genitive, which can then be extended to the other cases far more easily. In what follows I will assume a form of Version B. The basic unified structure of Genitive case, then, is shown in (17):

17) Unified configuration for genitives: (first version)



I next turn to the final major advantage of the [q] account over the direct NegP account, namely the possibility of extending it to the other cases of genitive given in (5-9) above, and perhaps others as well, and the subsequent possibility of universally relating (all) case occurrences to particular features.

4.0 Q-Account of Other Genitives

Suppose then that the [q] feature correlates with certain sub-aspects of the semantic make up of a verbal predicate. Let us simply assume that this unified set of features, however they are to be formalized, include a [q] feature. This will lead to the possibility of these verbs selecting a QP object, which is what is needed for Genitive. It is well known, for example, that verbs allowing Partitive genitive have certain semantic unity, and it has been shown that the complement of such verbs is a structural QP (Stojanović1995). Thus (18) is the structure of partitives:⁴

⁴The question arises how the 2 sub-instances of Genitive (*čaja* vs. partitive *čajju*) will be represented distinctly. I assume here that this is a morphological distinction reflecting more fine-grained feature structure of verbs and their QP complements, which is reflected during spell-out only.

- b. (non-intensional) Ja ždu podругu
 we wait girlfriend-acc
 "I am waiting for (my) girlfriend"

On the current account, the two sentences differ in the selectional properties of the verb, one takes a QP complement, leading to genitive case and the other of which takes an NP complement, leading to Accusative case. Genitive is still a spellout of [q], and the two sentences differ only in the internal structure of VP.⁵

"Do in quantity" verbs, shown in (6c), use the superlexical prefix *na-*, which changes the selectional properties of the head verb exactly as predicted: *na*-prefixed verbs take QP complements, which produce genitive case internally. Pereltsvaig (2004) provides independent evidence that *the prefix changes only the selectional properties of the verb*, and does not, as others have maintained, change the case-selection properties from structural Accusative to lexical Genitive. This can be seen by the fact that overt quantors such as *mnogo* ('many') do not themselves appear in the Genitive case (which they do in lexical genitive instances), but rather in the non-declined form found in structural case situations. This is shown in (21):

- 21) Vanya nakupil (mnogo / *mnogix) knig.
 Vanya NA+bought many-acc (/ *gen) books-gen
 "Vanya bought (up) many books."

Thus all that *na*-prefixation has done is changes the verb's selectional requirements to taking QP instead of an NP/DP.

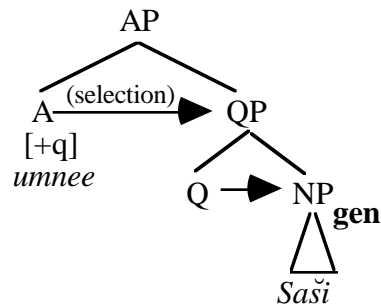
Thus far we have seen four instances of V selecting QP under various circumstances. The remaining cases involve QP interacting with different categories. First, the Comparative Genitive, repeated in (22):

⁵This jibes with recent literature on the structure of intensional verbs -- in particular with the account in Larson, Ludlow and den Dikken (1999) in which (all) intensional verbs have hidden sentential complement clauses. The account here does not rely on there being an entire (null) CP and TP structure in such cases, but still does have more structure in the complement domain than meets the eye. If it should turn out to be correct, in fact, that all intensional verbs have sentential internal structure, as LL&D argue, the QP account would remain intact -- there could be a TP complement of Q, and the genitive case would be assigned to the Spec of its complement rather than to the complement itself, something that requires no additional machinery in a probe/goal system.

- 22) a. umnee Saši
 smarter Sasha-**gen**
 "smarter than Sasha"
- b. umnee čem Saša
 smarter than Sasha-nom
 "smarter than Sasha"

In (22a), the comparative adjectival suffix endows the adjective with the [q] feature, allowing it to select a QP complement. The head of the selected QP is responsible for the genitive case in the usual way. The structure of (22a) is given in (23):

23) [q] approach to Comparative Genitive:



On the other hand, (23) appears not to capture the parallel with (22b). Why should a structure such as (23) alternate with a Nominative case construction, and only when the element *čem* is present? My claim is that they are not as parallel as they seem. I assume that *čem* is a complementizer selecting an embedded TP, whose other content is elided as proposed for German and English by Lechner (2001). One fact in favor of this approach is that a verbal continuation is possible in the nominative variant (24), but not in the genitive variant (25), suggesting that the former but not the latter is a reduced sentential complement:

- 24) a. Maša -- umnee čem Saša byl / budet
 Masha smarter than Sasha-nom was / will be
 "Masha is smarter than Sasha was/will be"
- b. Maša igraet na flejte lučše čem
 Masha plays on flute better than
 Saša igral / igraet
 Sasha-nom played / plays
 "Masha plays the flute better than Sasha did / does."

25) a. *Maša -- umnee Saši byl / budet
 Masha smarter Sasha-**gen** was / will be
 "Masha is smarter than Sasha was/will be"

b. *Maša igraet na flejte lučše
 Masha plays on flute better
 Saši igral / igraet
 Sasha-**gen** played / plays

"Masha plays the flute better than Sasha did / does."

Furthermore, in cases such as (26), the understood continuation of the elided phrase can always be related to the lower clause, as in the first reading, and to a certain degree to the higher clause (compare the English equivalent with *do*).

26) Saša kričal, čto Tanya pela gromče,
 Sasha yelled that Tanya sang louder
 čem Maša
 than Masha-nom

"Sasha yelled that Tanya sang more loudly than Masha did (sang)."

?"Sasha yelled that Tanya sang more loudly than Masha did (yelled)."

On the other hand, when the genitive is used, the second reading is unavailable, as shown in (27).

27) Saša kričal, čto Tanya pela gromče Maši
 Sasha yelled that Tanya sang louder Masha-**gen**
 "Sasha yelled that Tanya sang more loudly than Masha did (sang)."

*"Sasha yelled that Tanya sang more loudly than Masha did (yelled)."

This again implicates a full, reduced clausal structure for the *čem*+Nom cases and a very different structure for the genitive constructions. The idea is that the difference reduces to selection -- comparative adjectives can select either a QP or a CP.

Next there is the question of the adnominal genitive. This is the most widespread of genitives, and an entire syntactic problem in its own right, aspects of which are discussed in detail in Rappaport (2000). I will discuss the direction a Q account of

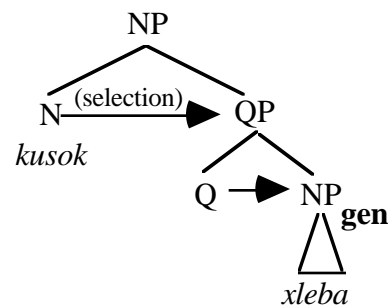
adnominal genitives would have to go to work in our terms, and leave more detailed discussion to further research, since semantic unification with the other cases is far from obvious. But our method leads us to make the attempt, and time will tell whether it is the right direction to go in.

First, it is well known that adnominal genitives can express a variety of semantic relations. (28) are from Rappaport (1992):

- 28) a. konec fil'ma o vojne
 end film-**gen** about war
 "the end of the film about the war"
- b. kusok xleba
 piece bread-**gen**
 "a piece of bread"
- c. krasota devuški
 beauty girl-**gen**
 "the girl's beauty"
- d. sosed kuzneca
 neighbor blacksmith-**gen**
 "the blacksmith's neighbor"

In all cases, this genitive serves to delimit the interpretation of the head noun, turning a common noun into a relational noun, in the sense of Partee and Borschev (2003). The strongest version will claim that the complement of an N head, in cases other than Nominalization of certain verbs that have a particular kind of specification of complement type, is always a QP. That is, N selects QP as its complement as the only (non-lexical) option. The structure of a basic adnominal genitive then fits nicely into our general pattern, as shown in (29):

29) [q] approach to Adnominal Genitive:

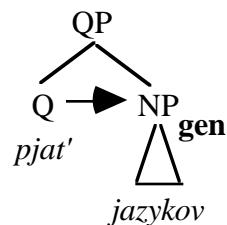


Finally, we turn to the Quantificational genitive itself. At first glance, these might appear to be the simplest cases, since they are the only ones in which the head of the proposed QP phrase appears to be overt. Thus (30) repeats the examples from (9):

- 30) Quantificational genitive:
- a. mnogo problem
many problems-**gen**
"many problems"
 - b. pjat' jazykov
five languages-**gen**
"5 languages"

The first version of how to handle this type of genitive in the framework under consideration would be something like (31):

- 31) [q] approach to Quantificational Genitive (first version):



However (31) does not help us with the well-known dichotomy between homogenous and heterogeneous patterns shown in (32):

- 32) a. Dijana znaet pjat' jazykov
Dijana knows five-nom/acc languages-**gen**
"Dijana knows five languages."
- b. Dijana vladeet pjat'ju jazykami
Dijana controls five-**instr** language-**instr**
"Dijana knows five languages."

The generalization is that in so-called direct (or structural)-case positions, the numeral is in its uninflected basic form, said to be Nominative or Accusative, and the QP complement is genitive, as in (32a). However when the entire phrase is the complement of a lexical case assigning verb or preposition, as in (32b), *both* the numeral itself and its apparent complement appear in the lexical case, here the Instrumental.

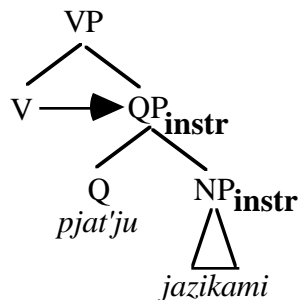
The problem of how to account for this paradigm has been discussed extensively in the literature, for example in Babby (1987), Franks (1995), (1998), (2001), with case conflicts and hierarchies or difference in level of application determining that in lexical case position, lexical case somehow overrides (structural) genitive on the complement.

In my system, genitive should *always* be possible on an NP if it is combined with a Q. And the phrases in (32) are usually analyzed as QP. So there is no principled reason why something like (33a) should be impossible, in which the gen NP is merged with the head of Q, which itself satisfies the lexical requirements of the verb (since we know from (32b) that the numeral can inflect for case.) However, (33a) is impossible in Russian:

- 33) a. *vladeet pjat'ju jazykov
 controls five-**inst** languages-**gen**
 "knows five languages"
- b. vladeet tysjačej jazykov
 controls 1000-**instr** languages-**gen**
 "knows 1000 languages"

The solution for these examples stems from an analogy with predicate instrumental case - where it is clear that only when the relevant functional category is *empty* can it check the relevant case (see Bailyn 2001). When a lexical item fills the head position, the case feature is absorbed, and case cannot be directly assigned and instead has to come from outside the local domain. So we then expect the numeral to be the head of the phrase only when genitive does *not* appear on the complement. If this is on the right track, then the relevant structures for (32b) is as in (34):

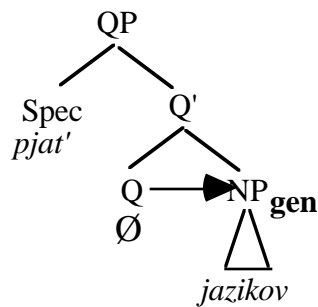
34) [q] approach to quantificational genitive (homogenous pattern)



We can imagine a scenario on which the homogeneous pattern emerges if we simply assume that any QP with a filled head has its case features absorbed by the overt element.⁶ Thus the Q head no longer constitutes a minimality domain, and both it and its complement are within the domain of the higher head.

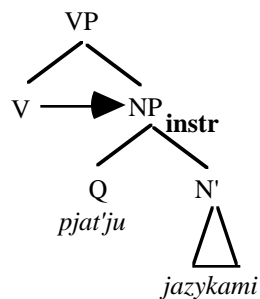
In the case of (32a), where the numeral stands in a direct case and the complement is genitive, the head of the phrase must be null, and the numeral sits in a Q-operator position, in effect licensing the presence of the QP, which is here not selected for by the verb. The proposed structure is given in (35):

35) [q] approach to quantificational genitive (heterogeneous pattern)



⁶It is also possible that we are dealing with some kind of "reprojection" in the sense of Hornstein & Uriagereka 2002. If so, then the appropriate labeling for the resulting structure might look something more like (i):

i) Reprojection version of (34):



I leave the implications of this possibility to future research, noting only that reprojection opens the possibility, within Minimalism, that the essential account of the difference between such cases and the heterogeneous ones provided in Babby 1987 is still on the right track.

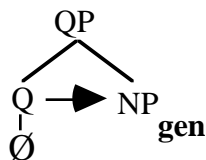
There is additional evidence that the quantificational elements in Q-Genitive constructions are, in fact specifiers. Consider (36):

- 36) a. Dijana znaet do xrena jazykov
 Dijana knows to horseradish languages-**gen**
 "Dijana knows a lot of languages."
 b. *Dijana vladeet do xrena jazykami
 Dijana controls to horseradish language-**instr**
 "Dijana knows a lot of languages."

In (36) we see that an idiomatic PP can serve the role of licensing the Q head. This is consistent with (35).

Several advantages of this account emerge. First, we can now maintain the even stronger version of (17) given in (37):

37) Unified configuration for genitives: (second version)



Second, we can now explain why it is that QPs that contain quantificational elements like *pjat'* ('five') can appear in any position and need not be selected for -- the Operator in the SpecQ position licenses the appearance of QP internally, and selection is not required. This is formally identical then to the structure proposed by Franks & Dziwirek (1993) in discussing genitive negated time expressions, which must appear with the element *ni* (or other such element) as shown in (38):

- 38) On ne spal *(ni) odnoj minuty
 he neg slept NI [one minute]-**gen**
 "He didn't sleep for a minute"

Because the phrase is an adjunct, the QP itself can only be licensed by the presence of the operator in the Spec position (which being an NPI, also derives the requirement that such expressions be under the scope of negation as well).

Third, if (35) is the correct structure for the heterogeneous pattern, we can explain why this pattern is unavailable with lexical case assigners, as seen in (33a) above -- as is well known, lexical case is directly associated with theta-role assignment. (33a) is impossible because there is no local head to which the theta-role of *vladeet* can be assigned.

Thus the Russian hybrid behavior reduces to the possibility that numerals like *pjat'* ('five') can behave as heads, absorbing the genitive case and leaving themselves and their complement in the (lexical) case domain of a higher head.

Imagine now that there were a language where this absorption could not take place (or where the numeral simply cannot fill the head of QP position). We would then expect only structures like Russian (35) and would expect only genitive complements of 'five', regardless of the external position of the phrase. And this is exactly what we find in Serbo-Croatian, as documented in Franks (1995) and (2001).

39) Serbo-Croatian:

- a. kupio sam pet knjiga
 bought aux 5 books-**gen**
 "I bought 5 books"
- b. sa pet knjiga /*knjigama
 with 5 books-**gen** / *instr
 "with five books"

(39) shows that in Serbo-Croatian only the heterogeneous pattern can be found. Therefore we can say that elements like 5 *only* serve as operators in SC and therefore genitive is always assigned by the null head of the QP, always producing structures like Russian (34).

In Serbo-Croatian, on the other hand, the numerals are never Q heads, and the homogeneous pattern does not occur. (40) presents the relevant parameter settings:⁷

⁷This proposal appears more minimalist in spirit than Franks 1995, 2001, since it involves only a lexical property, rather than Franks' (2001) attempt to capture the same distinction with the parameter in (i):

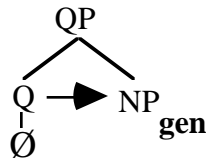
- i) (from Franks 2001)
- a. Q assigns [-oblique] genitive in Russian
 b. Q assigns [+oblique] genitive in SC

(40) seems preferable in that it allows us to exclude morphological features like [\pm oblique], which have no status in Minimalism, and reduces the difference to lexical properties of items like 'five'.

- 40) a. Serbo-Croatian: *pet* ('five') is a maximal projection only (specifier, operator only)
 b. Russian: *pjat'* ('five') is a head and can fill the Q position

To summarize, we are left with the following highly simple generalization:

- 41) a. Genitive case is uQ on N
 b. Structure of non-lexical genitive case

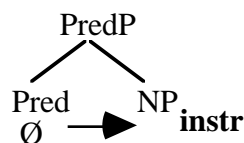


If we assume a bottom-up derivational system as in Epstein et al (1998), and assume that distinct morphological case forms have distinct features that must be satisfied either directly upon Merge by a head specifying that exact set of features (lexical case) or by merger with the appropriate functional category, we limit Genitives to configurations conforming to (40).

4.0 Extensions

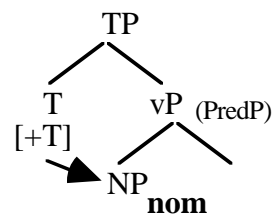
The null head relation is parallel with Instrumental case marking as well, on the general approach taken by Bailyn & Rubin (1991) and developed in subsequent work by Bailyn (2001) and also maintained, in slightly different form, in Richardson (2003). The details of this analysis have been debated elsewhere, but the general picture is clear -- Russian (predicate) Instrumental case results from the merger of a (null) functional category Pred with a case-bearing complement. The schema is given in general form in (42):

- 42) General schema of predicate Instrumental case in Russian:
 (Bailyn 2001)



Of course a feature-based theory of case, in the Minimalist sense, is not a new idea. As we saw at the outset, the tight connection between Nominative case and Tense is well-known and on most recent theories, also involves a configuration where c-command is the most relevant factor. Thus, we can maintain something like (43) for Nominative:

43) General schema of Nominative case: (Pesetsky & Torrego 2001, Richardson 2003)



Notice that the fact that the case is checked on the specifier of the complement and not on the complement itself is not important so long as there is no intervening case-checking head, and in fact such examples exactly serve to differentiate selection from case-checking (which look so similar in traditional accounts of genitive) and perhaps to differentiate fully structural case (Nominative and Accusative) from other instances as being related to configurational status: "structural" cases are assigned to elements in Spec positions, those in complement positions are either configurational (here Genitive, Instrumental) or "lexical".

As mentioned at the outset, I follow Richardson (2003) in assuming that (structural) Accusative case (on arguments) is related to (inner) Aspect. There is only one significant difference between my assumptions about Nominative and Accusative case and those of Richardson (2003) and this involves not Nominative and Accusative but rather dative case instances. I do not assume that Nominative and Dative have the same source (T), which has been the usual assumption since at least Franks 1990 and is maintained in Lavine 2000, Richardson 2003 and other places.

For one thing, there is a clear meaning distinction beyond the lack of overt tense in Franks (1990) examples in (44):

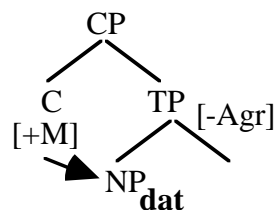
- 44) a. Gruzovik ne proexal
 truck-**Nom** neg went through: +PAST, +AGR
 "The truck did not go through."
- b. Gruzoviku ne proexat'
 truck-**Dat** neg go through: -TENSE, -AGR
 "The truck cannot go through."

I have always been surprised that the difference in *modality* rather than agreement is often ignored in discussion of such examples. It is certainly the case that the Dative marked infinitive constructions contain modality in their meaning (reflected in the English translation of such phrases) which is not represented in a structure that only has + or - agreement features of T. For one thing, we know that Dat and Nom arguments can cooccur, throwing doubt on the idea that they are associated with the same position. This is shown in (45):

- 45) Etomu mal'čiku nraŭjatsja gruzoviki
 this boy-Dat likes +pres, +pl trucks-nom PL
 "This boy likes trucks"

In (45) there is clearly agreement and tense present and yet we have a Dative argument (alongside a Nominative) one, so the idea that these two case instances are assigned to the same position appears suspect. And if we want to maintain a strictly feature-based source for all non-lexical cases I assume, then, that the Dative is associated with the SpecT position and its source is a higher C head, which is also the source of the modality in Dative infinitival constructions. In the absence of a higher C phrase, SpecT is open for EPP-movement of phrases from lower in the structure, producing a kind of "Inversion" structure which I have motivated elsewhere (Bailyn 2004). Thus the structure of Dative case might look something like (46):

- 46) General schema of (configurational) Dative case:



And of course there is evidence that the presence of C leads to the possibility of secondary datives on the famous semi-predicative elements *odin* and *sam*, which occur in an agreeing form otherwise. This is shown in (47):

- 47) a. Ivan xočet tancevat' odin / *odnomu
 Ivan wants to dance alone-Nom /*Dat
 "Ivan wants to dance alone."

- b. Ivan prišel, čtoby tancevat' odnomu / *odin
 Ivan arrived COMP to dance alone-Dat /*Nom
 "Ivan arrived in order to dance alone."

One other aspect of the dative case situation should be noted-- the one that led others to claim that defectiveness of T or lack of agreement -- the TPs in such construction are typically [-agr] as shown in (46), but not always as we have seen in (45). So it is not [-agr] that is directly responsible for the case assignment of Dative in these constructions, and yet there is often a correlation between Dative (esp. in modal usages) and an infinitival [-agr] TP. Once again we see a correlation between selection and case which is accounted for by the selectional properties of the case probing head. Empirical data tell us the two are not the same, but their source is the same, and thus it is a lexical property of the head that accounts for the correlation.⁸

The overall (canonical) non-lexical case appearance situation can thus be summarized as in (48):

- 48) Functional category relation of Russian non-lexical morphological case occurrences:

<u>Case</u>	<u>Functional category manifested</u>
Nom.....	T
Acc.....	Asp
Dat.....	C
Instr.....	Pred
Gen.....	Q

We can thus imagine the lexical entry of Nominals to include the usual formal feature matrix (FF) as envisioned in Chomsky 1995, 2000 and elsewhere, and for each Nominal also to include an uninterpretable functional category feature, which gets spelled out as the familiar morphological cases (T is spelled out as Nom,

⁸I do not discuss indirect object Dative here, although I have argued elsewhere that it results from a particular configuration as well, namely that of verbal complement in a system whereby Theme objects are generated in SpecVP. This is discussed in Bailyn (1995a,b). For now, I exclude these Datives, since they share the configuration of lexical case-marked arguments, although ultimately we'd like to include them in our system, and should be able to do so without added stipulation. However, in the chart that follows they are not included.

Asp as Acc etc). This is then a direct extension of the Pesetsky/Torrego idea that Nominative case *is* uninterpretable tense on nominals, to all the other cases. In the formal syntax, morphological case can be eliminated, and the traditional labels need be maintained only in the morphological component, although they could just as easily be renamed (Tense Case, Aspect Case, Comp Case, Predicate Case and Quantifier Case respectively). Thus the feature make up of a noun like *kniga* ('book') might look like (49):

49) Lexical entry for *kniga*:

Inherent features:

[PHON features] (phonological make up of root)

[SEM features] (what *kniga* means--includes argument structure)

[FORMAL features] (+N, +FEM)

Variant features

[PHI features]

(# and ASSOCIATED FUNCTIONAL CATEGORY)

So in the case of *knig* (the traditional genitive plural) -- the variant features would be a plural feature and a Q feature, requiring that the configuration the (projection of) the nominal appears in be compatible with plural (verbal agreement say) and that the nominal be in a position where it can Agree (in the probe / goal sense) with a Q head (or feature of a head) of a minimally c-commanding category. Whether or not this is always reducible to selection constitutes the main topic for further research in this direction. But certainly we can see how a purely derivational system, in the sense of Epstein et al (1998) might work with such lexical entries -- derivations are built up from the bottom, and the system of concatenation works as described in Epstein et al (1998) and Epstein and Seely (2002).

Some final observations are in order: first, the system in (48) is clearly too strong, for we know that the interpretable Tense corresponding to Nominative must have a positive value, the Aspect node must be [+telic], the C in question must be [+modal], the Pred must be phonologically null, and so on. It should now be obvious that the value of the features themselves does not necessarily match the traditional functional category label -- the +modal feature of Dative is housed in C in the discussion above and the [+telic] feature housed in (inner) Asp.

The [+T] feature must indeed be *plus* T and the [+Pred] category must be morphologically null.

(48) might thus be better reduced to something like (50) whereby no particular *category* is implicated, simply a feature -- and features can be associated with various categories.

50) Feature relation of Russian non-lexical morphological case:

<u>Case</u>	<u>Feature manifested</u>
Nom.....	[+T]
Acc.....	[+Telic]
Dat.....	[+Modal]
Instr.....	[+Ø Pred]
Gen.....	[+Ø Q]

(50) leads us to the final important consequence, the feature-based system allows us to take seriously the label-less system of Collins (2002), whereby there are *heads*, as determined by their feature make-up, but no *category labels*. In fact the only basic syntactic relations, all represented as relations among heads, are given in (51):

51) Basic syntactic relations:(Collins 2002, p. 22)

- a. Theta (X,Y) X assigns a theta-role to Y
- b. EPP (X, Y) Y satisfies the EPP feature of X
- c. Agree (X, Y) X matches Y, and Y values X
- d. Subcat (X, Y) X subcategorizes for a feature

(51a) reflects argument structure. (51b) results in displacement (movement). (51c-d) should then cover all case and agreement phenomena. However, without an approach to case such as (50), we would not be able to maintain a minimal system of this sort and still account for the full range of productive morphological occurrences we see.

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