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The Slavic Noun Phrase

0. Introduction

A *Noun Phrase* (NP) is a syntactic unit (*constituent*) resulting from expanding a lexical noun (the *head* of the NP) by the addition of a variety of arguments and modifiers (collectively termed *satellites* of the head). Some examples of NPs from contemporary Slavic literary languages are given in (1), with the head of the NP given in italics and a variety of satellites illustrated:

(1) a. Russian:
vse èti   bezzabotnye *ljudi*   vysokogo   rosta   v   očkax
all these carefree   *people* considerable$_{GEN}$ height$_{GEN}$ in glasses
'all these tall carefree *people* with glasses'

b. Ukrainian:
Vsi ci   visoki   bezturbotni *ljudi*   v   okuljarax
all these   tall   carefree   *people* in glasses
'all these tall carefree *people* with glasses'

c. Polish:
to   ciągłe   *zaczynanie* czegoś   ze   świadomością,
this   constant *beginning* something$_{GEN}$ with   awareness
że   się   źle   skończy
that REFL   badly   will.end
'this constant *beginning* something with the awareness that it will end badly'

d. Czech:
značná   *odolnost*   tohoto   materiálu   vůči   korozi
significant *resistance* this$_{GEN}$ material$_{GEN}$ vis-a-vis corrosion
'the considerable *resistance* of this material to corrosion'

e. Bosnian/Croatian/Serbian:
sve ove   Jovanove stare   *slike*   njegove   porodice
all these John's   old   *pictures* his$_{GEN}$ family$_{GEN}$
'all of these old *pictures* of John's of his family'

f. Bulgarian:
uveličivane na   produkcijata   od   rabotnici
increase   of   production$_{DEF}$ by   workers
'an *increase* in the production by workers'

In this paper, we attempt two things: a) to survey the structures found in Slavic NPs from a taxonomic point of view, and b) to describe the theoretical issues involved in describing

the morphosyntax of these NPs and their properties. For convenience, we use Russian to illustrate properties typical of the Slavic languages as a whole. We will not consider detached modifiers or the special problems of relative clauses, nor can we give quantifiers (including numerals) anything like the attention they deserve.[1]

The following themes will be highlighted in our discussion of the structure and interpretation of NPs:[2]

(2) • Configurational structure and grammatical function
     • Argument structure (diathesis): thematic roles and syntactic realization
     • Case assignment
     • Morphology and syntactically-formed words: Possessive nouns and pronouns
     • Concord in formal features: case, number, gender
     • Word order
     • Extraction

These themes cannot be considered in isolation from each other. Correspondingly, discussion of the topics listed in (2) often unfolds in parallel, rather than in series.

We assume a model of generative grammar essentially like that described by Chomsky and Lasnik 1995. Many aspects of that model remain a matter of research and debate, so that there can be no assumption of a canonical analysis. Furthermore, more recent developments along that line, identified as the *Minimalist Program* (see, for example, Chomsky 1995, chapter 4; more recently, Chomsky 2000, 2001, 2004, 2008), recast the overall architecture of the theory in a way that is profound, but often with only a minor effect on the subject at hand. While we will utilize certain concepts of Minimalism, we will try to avoid or suppress those controversial aspects of this program which have little substantive relation to our topic. In general, when the desiderata of explicitness and conceptual elegance conflict, we will err in favor of the former for the sake of accessibility.

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[1] On detachment, see Rappaport 1984; on numerals, see especially Babby 1987, Franks 1995, and Mel'čuk 1985 for both analysis and surveys of the literature. On relative clauses, we refer only to Zaliznjak and Padučeva 1979 and, for some discussion and further references, Rappaport 1984.

[2] We consider only the formal aspect of NP-internal syntax and morphosyntax, leaving aside much of interest. For a survey of the Slavic Noun Phrase with special emphasis on referential properties, see Topolińska 1981; Padučeva has written extensively on the referential properties of the Russian NP and its contribution to sentence-level semantics (e.g., 1974; 1985; 1986). On definiteness as a semantic and formal category, see Nikolaeva 1979, as well as Mayer 1988 on the Bulgarian definite article.

1. Preliminaries: Configurational Structure, Grammatical Function, and Lexical Representations

In this section, we present some background assumptions of phrase structure and lexical representations which underlie our investigation of the configurational structure of the Slavic NP. The two issues of phrase structure and lexical representations are intimately connected. Lexically-specified *arguments* must be located and identified in phrase structure, and the proper way to specify the former depends upon how the theory of syntax defines the properties of the latter.

We assume that a head combines with its satellites to form larger, inclusive categories, called its *projections* of the head. In the tradition of *X-bar theory*, satellites of a head fall into one of three types, defined in terms of their generalized grammatical function with respect to the head (regardless of the latter's category): *complement*, *adjunct*, or *specifier* (often abbreviated Comp-of-X, Adj-of-X, and Spec-of-X, respectively). Complements and specifiers are arguments of the head (i.e., they are *selected* by the head), while adjuncts are not. Lexical items are defined in terms of their arguments and therefore can only be understood when those arguments are identified; an adjunct, on the other hand, represents supplementary and facultative information.[3] A standard assumption, which we will begin with, has been that all complements form a single constituent with the head X and that the specifier forms a constituent with a projection of the head to form the maximal projection XP of that head. Complements are correspondingly called *internal arguments*, while a specifier is called an *external argument*. On these assumptions, binary branching is not obligatory. The addition of adjuncts, in contrast, is recursive, forming projections which contain any complements but not the specifier. The generalized phrase structure given in (3) applicable to any category X illustrates (we ignore word order):

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[3] But see Przepiórkowski 1999, who argues that the distinction is not configurational in nature.

(3)
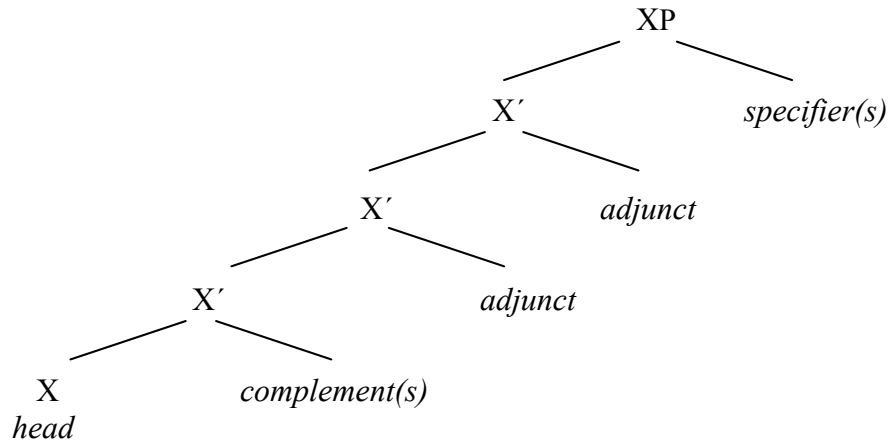
We assume further that a lexical representation for a head includes the latter's predicate:argument structure, specifying, for example, that the verb *fall* ascribes some property (that of falling) to some entity; that is, *fall*: [V], <x>.[4] While the property is defined in the lexicon, the reference of the entity bearing that property corresponds to an argument which must be identified in the syntactic structure framing the lexical item. The term *diathesis* is used to refer to the mapping of semantic arguments onto syntactic structure (and *voice* denotes grammaticalized patterns of diathesis). We adopt the *VP-Internal Subject Hypothesis*, according to which the eventual subject of a clause is moved there from an argument position within the Verb Phrase (VP).

Recent work in *Bare Phrase Structure* within the Minimalist program takes the apparatus of X-bar theory as derivative and unnecessary. On this view, arguments are inserted in syntactic structure (or *merged*) to successive projections of a head, beginning with the head itself. Thus, 'complement' and 'specifier' would mean no more than the first merge and second merge of arguments. If, as is standard, the verb *fall* is taken to be unaccusative, i.e., its eventual subject is merged as an internal argument, as the complement of the verb (Comp-of-V), then this consequence of Bare Phrase Structure provides the correct prediction. On the other hand, a verb like *work* (with, in contrast, an agentive subject) is normally considered to be unergative, i.e., its subject is merged as an external argument, in specifier position, as is the subject of a transitive verb. If, as is the

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[4] At this point we identify the category of the lexical item (here, with "V" to designate a verb) in square brackets, followed by its argument structure, given in angle brackets. Additional information about the identified arguments will be added, as discussed below. Despite a difference in notation, our treatment of argument structure is, in our understanding, consistent with that of Babby 2010. For more on the argument structure of lexical items and how it is mapped into syntax, see Babby 2009.

case in Bare Phrase Structure, it is not possible for a first merge to be in the specifier position, then unergatives must be assigned a dummy object in order that the subject merge conform to that of a transitive verb. Alternatively, we will simply stipulate the difference between unaccusatives and unergatives by specifying that its argument is merged as a specifier (Spec-of-V); we indicate this by underlining the argument: *fall*: [V], <u>x</u>>.

Consider a more complicated example. The Russian verb *verit´* 'to believe' (as in, e.g., *ja verju, čto ty poterjalsja* 'I believe that you got lost') is only meaningful when a believer and that which is believed are identified in the syntactic structure (or context). We identify these arguments in terms of their *thematic role* (sometimes called *θ-role*); in particular, the believer is an Experiencer, and the believed is a Proposition. The assignment of thematic roles is called *s-selection* (*semantic selection*). The categorial requirements imposed on arguments (e.g., that the external argument is a nominal while the internal argument is a clause) constitute *c-selection* (*categorial selection*). The argument structure of this verb, then, could be represented as *verit´*: [V], <x, y>, along with additional information defining c-selection and s-selection requirements for the two arguments: x = [N], Experiencer; y = [finite clause], Proposition.[5] These arguments must then be mapped onto syntactic structure. In particular, the diathesis of the verb in question must distinguish *y* as an internal argument (Comp-of-V), and *x* as an external argument (a specifier), the latter ultimately moving on to the position of clause subject. The lexical representation of the Russian *verit´* 'to believe', then, takes the form [V], <<u>x</u>, y>, where *x* corresponds to the Experiencer and *y* to the Theme (as above); underlining the former identifies it as the external argument.

The lexical representation of a word must contain any information pertaining to *inherent case marking* (in the terminology of Freidin and Babby 1984 and Babby 1986, *lexical case marking*). Inherent case marking is the assignment of case by a head to an argument in association with the assignment of a thematic role to that argument. For example, the lexical representation of the Russian verb *pomoč´* 'to help' would include the following information: [V], <<u>x</u>, y>, where *x* = [N], Agent and *y* = [N, Dative], Goal.

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[5] It would obviously be desirable to avoid stipulating both c-selection and s-selection requirements for each lexical item; see Bošković 1997, chapter 2 for an attempt to do so. Here, however, we will for explicitness follow Babby 2010, who argues at some length that c-selection must be stipulated in lexical representations.

In some cases the choice of morphological case is semantically motivated (for example, Experiencers and Goals tend to take the Dative in Slavic), but the real definition of inherent case marking is that an N is lexically specified to get its case and thematic role from the same category. In the theory of Bare Phrase Structure, heads are defined by their feature set (phonological, semantic, formal); their category (N, V, etc.) is not privileged, but rather represents one of the (formal) features. All nouns must have case, and just as a verb can select a noun as a direct object, it can select a noun of a particular case by the same mechanism, referring to the formal features of that complement. More generally, what has been called *c-selection* should in fact be viewed as *f-selection* (for *formal feature selection*), with category and case being among the formal features of a lexical head. Inherent case marking contrasts with *structural case marking* (what Freidin and Babby 1984 and Babby 1986 have called *syntactic case marking*), in that the latter divorces case assignment from thematic-role assignment. The distinction will be drawn in more detail as we proceed.

2. Simple Nominals: Structure and Analysis

For the purposes of the present exposition, the Slavic nouns are partitioned into two classes. *Process nouns*, describing an action or state (in the terminology of Grimshaw 1990, 'complex event nouns'), will be taken up in section 3. We use the term *simple nouns* for the remainder, which includes the following:

(4) a.   physical objects, inanimate or animate: *karandaš* 'pencil', *kot* 'cat',
         vrač 'doctor'
    b.   concepts and abstractions: *svoboda* 'freedom', *točnost'* 'accuracy'
    c.   collective nouns: *gruppa* 'a group'
    d.   simple event nouns: *sobytie* 'event', *poezdka* 'a trip', *prodaža* 'sale'

Category (4a) can include objects defined in terms of an event. Two such objects are particularly salient. One is the agent or actor of an event (*pevec* 'singer'); the other is the result of an event (*izobretenie* 'an invention, that which has been invented', *ošibka* 'an error, the result of someone erring'). The latter category, called *result nouns*, includes 'picture nouns' (*kartina* 'picture') with a potential Agent and Theme.[6] Simple event

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[6] The term 'picture noun' is standard in generative linguistics lore, but rarely defined. We understand the term to denote a transitive result noun (with the potential to select an Agent and Theme) not derivationally related to a verb. Thus, *a/the/my collection (of books)* and *a/the/my picture (of refugees)* are both result nouns, differing only in that while *collection* is morphologically related to the verb *to collect*, *picture* has no such morphological base.

nouns differ from process nouns in that the former are presented as closed events without internal aspectual structure, while the latter retain the internal structure of a verbal predicate in a way that is transparent to syntactic modification (for further discussion, see the analysis of process nominals below). The present section is devoted to developing a formal proposal for the structure of simple nominals (i.e., projected from simple head nouns). Process nominals will be taken up in section 3.

We begin with the descriptive task of identifying how the three grammatical functions performed by satellites of a nominal head (complement, adjunct, specifier) are syntactically expressed. Next a more general and refined analysis is proposed, based on the functional category Determiner.

2.1. The NP-internal Grammatical Functions of Simple Nominals

A complement, by virtue of being an argument, is lexically selected; that is, it is identified in, or *licensed by*, the lexical representation of the head. As Vinogradov 1960 (hereafter, AG60) succinctly puts it, the bond of a complement to its head follows from (*vytekaet iz*) the lexical meaning of that head (p. 241). The typical form of a complement is a non-agreeing category: an NP, Prepositional Phrase (PP), or clause (finite or nonfinite). NPs can be in the genitive, dative, or instrumental case:

(5) a. *Genitive NP:*
    stado olenej 'herd of deer$_{GEN}$'
    million dollarov 'a million dollars$_{GEN}$'
    stakan vody 'a glass of water$_{GEN}$'
    graždanin Sovetskogo Sojuza 'a citizen of the Soviet Union$_{GEN}$'
    dym kostrov 'the smoke of campfires$_{GEN}$'
    teplo tela 'body$_{GEN}$ warmth'
    točnost´ raboty 'precision of work$_{GEN}$'
    zavoevatel´ Arktiki 'the conquerer of the Arctic$_{GEN}$'
    kollekcija marok 'a collection of stamps$_{GEN}$'
    konspekt lekcij 'lecture$_{GEN}$ notes'

  b. *Dative NP:*
    pamjatnik Puškinu 'a monument to Pushkin$_{DAT}$'
    cena ljudjam 'the price of people$_{DAT}$'
    korm skotu 'feed for livestock$_{DAT}$'
    vernost´ muža i ej i delu 'the fidelity of the husband to her$_{DAT}$ and
        to the cause$_{DAT}$'

  c. *Instrumental NP:*
    nedovol´stvo žizn´ju 'dissatisfaction with life$_{INST}$'

    d. *PP:*
       blizost´ k gorodu 'proximity to the city'

    e. *Clause:*
       obeščanie prijti 'a promise to come'
       uverennost´, čto pridet vesna 'the confidence that spring will come'

A complement is identified in the lexical representation of its head by thematic role and category. The lexical representation also specifies inherent case selection. As noted above, we treat the assignment of thematic roles as s-selection, and combine categorial and inherent case selection in f-selection. For example, the lexical representation of *pamjatnik* in (5b) would be [N], <x>, where x=[N, Dative], Goal.

Adjuncts of NPs are traditionally called *attributives*. The most typical attributive is the familiar lexical adjective, exemplified in (1a-e). Lexical adjectives are subject to a rule of *φ-feature Concord*, copying the formal (hence, 'φ') agreement features of case, number, and gender of the modified head onto the adjective and spelling those features out in the (inflectional) morphology of the adjective. Certain non-agreeing categories can function as adjuncts as well:[7]

(6) a. *Genitive NP:*
      kaftan žestkogo šelka 'a kaftan of rough silk$_{GEN}$'
      čelovek dela 'a man of action$_{GEN}$'
      slezy vostorga 'tears of joy$_{GEN}$'
      medved´ srednej veličiny 'a bear of average size$_{GEN}$'
      zdanija dymčatogo cveta 'buildings of a smoky color$_{GEN}$'

    b. *Instrumental NP:*
      usy kostočkoj 'a moustache like a brush$_{INST}$'
      kazak dušoj 'a Cossack at heart$_{INST}$'

    c. *PP:*
      besedka v sadu 'a summer-house in the garden'
      ošibki iz-za rassejanosti 'mistakes due to absent-mindedness'

The assignment of case to bare NPs functioning as attributives (6a,b) is not easily treated within the model assumed here; Freidin and Babby 1984 and Babby 1986 have described such constructions (among others) as entailing *semantic case*. We will assume that the attributive genitive has no special status, and stands alongside the instrumental as being

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[7] In colloquial Russian, infinitives can be used as adjuncts, e.g., *bilet exat' v Moskvu* 'a ticket to go to Moscow'; see Rappaport 1987 for examples and discussion.

the result of a derivational rule which derives modifiers of certain types by adding a case feature to a noun.[8]

There are tests which distinguish the grammatical functions of complement and attributive. Attributives can normally function as predicates, so that a test might be a simple transformation:

(7) NP *kaftan žestkogo šelka* 'a kaftan of rough$_{GEN}$ silk$_{GEN}$' $\Rightarrow$
S *Ètot kaftan —žestkogo šelka* 'This kaftan is of rough$_{GEN}$ silk$_{GEN}$'.[9]

Attributives provide a coherent answer to the question *kakoj* 'what kind (of)'

(8)   -*Kakoj kaftan ty kupil?* 'What kind of kaftan did you buy?'
-(*Ja kupil kaftan*) *žestkogo šelka* '(I bought a kaftan) of rough$_{GEN}$ silk$_{GEN}$'.

And bare NP attributives necessarily have indefinite reference, and so cannot be replaced by a personal pronoun (cf. *nedovol'stvo im* 'dissatisfaction with it' vs. *usy kostočkoj/*eju* 'a moustache like a brush/*like it/one'). The generalized phrase structure displayed in (3) indicates that complements stand closer to their head than do adjuncts. Of course NP-internal word order exhibits considerable flexibility (see section 5 below), but when both a Comp-of-N and Adjunct-of-N are expressed by adnominal genitives, the complement must precede the adjunct, suggesting that this is the default order imposed by configurational structure (Englehardt and Trugman 1998a cite *konspekt ego lekcii podrobnogo soderžanija* 'detailed notes of his lecture' (literally, 'notes [his$_{GEN}$ lecture$_{GEN}$] [detailed$_{GEN}$ content$_{GEN}$]') versus the ungrammatical reverse order **konspekt podrobnogo soderžanija ego lekcii*). And categories performing these different functions cannot be coordinated with each other (**konspekt ego lekcii i podrobnogo soderžanija* 'notes of his lecture and in great detail').

The specifier can be expressed by an adnominal genitive. Typical interpretations of specifiers are Possessor, Inalienable Relation, and, in the case of 'picture nouns' and simple event nouns, Agent:

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[8] Two possible formal accounts for semantic case naturally suggest themselves. One is a null preposition, assigning case but without phonological expression. The other is analogous to the account of bare NP adverbials developed in Larson 1985, whereby a noun exceptionally assigns case to itself. We will not pursue this question here.

[9] A textual example:
(i) Napomnim, čto otnošenie posessivnosti byvaet dvux semantičeskix tipov.
'Recall that the possession relation is of two$_{GEN}$ semantic $_{GEN}$ types $_{GEN}$.'

(9) a. kniga sestry 'sister's$_{GEN}$ book'
         xozjajstvo otca 'father's$_{GEN}$ estate'

     b. nožka stola 'a leg of the table$_{GEN}$'
         ruka bol´nogo 'the patient's$_{GEN}$ hand/arm'
         tetka otca 'father's$_{GEN}$ aunt'

     c. roman Tolstogo 'Tolstoy's$_{GEN}$ novel' [= a novel by Tolstoy]
         kartina Repina 'Repin's$_{GEN}$ picture' [= a picture by Repin]
         reč´ otca 'father's$_{GEN}$ speech'
         poezdka diplomata 'the diplomat's$_{GEN}$ trip'

Specifiers and adjuncts exhibit different properties. The interrogative corresponding to an animate nominal specifier is *čej* 'whose', while that corresponding to an adjunct is *kakoj* 'what kind, which'; also, when both are expressed by adnominal genitives, an adjunct stands closer to its head than a specifier (cf. Englehardt and Trugman 1998a: *konspekt otličnogo oformlenija moego brata* 'notes in an excellent format (literally, 'excellent$_{GEN}$ format$_{GEN}$') of my brother' versus its ungrammatical inversion **konspekt moego brata otličnogo oformlenija*). Of special interest are possessive adjectives, specifiers with agreeing adjectival morphology which are morphologically derived from nouns (AG60 cites such Russian forms as *sestrina kniga* 'sister's book' and *otcovo xozjajstvo* 'father's estate') as well as pronominal forms (e.g., Russian *moja mat'* 'my mother'); these forms are opposed to the corresponding paradigmatically expected *kniga sestry, xozjajstvo otca*, and **mat´ menja* 'mother of me'. We will take up special properties of these specifiers in section 2.2.2 below.

   Finally, a NP can contain any of a range of determiners, which modify the referential or quantitative properties of the nominal:

(10) a. Demonstratives: *ètot*/*tot* 'this/that', *takoj* 'such a'
      b. Agreeing Quantificational Expressions: *vse* 'all', *každyj* 'each', *odin* 'one', *nekotorye* 'some'
      c. Quantifiers (including numerals): *dva* 'two', ... *pjat´* 'five'; *mnogo* 'many'
      d. Emphatic marker: *sam* 'itself'

While undergoing Concord, these modifiers differ in various ways from attributives. While the unmarked position of an attributive is after a possessive pronoun, that of Demonstratives and (Agreeing) Quantificational Expressions is before it. Quantifiers enjoy default positions either before or after the possessive pronoun, with a difference in interpretation. The emphatic marker, along with the quantifier *vse* 'all', is compatible

with a pronoun (unlike attributives). The emphatic marker can stand equally naturally before or after a noun, while the latter position for an attributive is marked. Examples:

(11) a. èta moja novaja teorija 'this new theory of mine'
          každoe naše predloženie 'every proposal of ours'
          vse èti tvoi risunki 'all of these drawings of yours'

      b. èti pjat´ tvoix studentov 'these five of your students
          èti tvoi pjat' studentov 'these five students of yours'

      c. vse oni/oni vse 'all of them
          on sam 'he himself'

      d. sam professor/professor sam 'the professor himself'

We will return to the configurational position of Determiners in section 4.

2.2. A Determiner Phrase Analysis of Simple Nominals

2.2.1 Source of the Genitive Case

We begin with the following examples of simple result nominals. In each, a noun is followed by two adnominal genitive NPs.

(12) a. fotografija krest´jan Smirnova
          'the photograph of the peasants$_{GEN}$ of Smirnov$_{GEN}$'

      b. tablica èlementov Mendeleeva (Padučeva 1984)
          'the table of the elements$_{GEN}$ of Mendeleev$_{GEN}$'

      c. interpretacija poèma Šklovskogo
          'Shklovskij's interpretation of the poem'

The genitive case marking on the first adnominal genitive in each nominal phrase (e.g., *krest'jan* 'peasants$_{GEN}$' in (12a)) is an instance of inherent case not only because the source of its case marking and thematic role are the same (the head noun *fotografija* 'photograph'), but the choice of case is actually related to the thematic role assigned. For example, the noun *fotografij*a naturally suggests the question of its content: a photograph of what? This use of the genitive is consistent with the use of the genitive in quantificational constructions, designating the component part(s) of a collective whole. As noted above, inherent case is identified in the lexical representation of the head which assigns it, along with a thematic role. The head nouns in (12), then, have a lexical representation of the form [N], <x>, where x = [N, Genitive], Theme.

How, then, are the sequentially second adnominal genitives illustrated in (12) licensed? In each example, the second adnominal genitive designates an Agent, identifying the originator or creator of the entity resulting from an event. This *Agent*

interpretation results from the semantic nature of the noun, which, according to our definition (cf. note 6), are picture nouns.

There is another interpretation in (12a,b) as well (pragmatically less likely in (12c), although not ruled out). In this other interpretation, the genitive phrase in question is easily interpreted as designating a Possessor of the head noun.[10] In this regard these constructions are no different from, say, *stakan vody klienta* 'the client's$_{GEN}$ glass of water$_{GEN}$' A possessor clearly is not implicated in the argument structure of a head, unlike the complements, so that we cannot look to the head noun as the source of the thematic role Possessor. And correspondingly that head cannot be a source of inherent case for the Possessor.

The notions of possessors and agents are not mutually exclusive: one could easily speak of a photograph taken by X, but belonging to Y. But in fact a third adnominal genitive in (12) is completely impossible. Thus, while the source of the thematic role differs in the two cases, their co-existence needs to be ruled out as a matter of principle. We propose that this can be done by assuming that while Agents and Possessors constitute two distinct thematic roles (resulting from two distinct syntactic structures), there is but one source of the genitive case shared by the two. In order to formalize this state of affairs, we turn to the theory of functional categories as presented in Chomsky (2000; 2001). A brief digression is required in order to establish the mechanisms of case assignment at the clausal level before returning to case assignment in the nominal phrase, which parallel the former. We necessarily focus more on the mechanics, referring the reader to the source papers for justification.

A transitive verb in the active voice is represented by a lexical category V which itself is the complement of a light verb *v*. The lexical category V merges with all arguments except the canonical subject, its external argument, which is introduced as the specifier of the light verb *v*. This light verb *v* assigns the thematic role of Agent to its specifier and the structural accusative case to the direct object (accounting for 'Burzio's

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[10] See Ivanov 1989 for further discussion of possession as a special case of a more general relation. For the range of varieties of possession, see Kiklewicz 1997. From a generative perspective, Higgenbotham (1983, 397-8) speaks of nominal Specifiers of NP in English in such examples as *John's cat*, *John's beliefs*, *John's purchase* as being associated with a single thematic role, which he identifies merely as 'R, some contextually-determined relation'.

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generalization': a verb assigns the accusative case only if there is a subject).[11] A transitive verb in the passive voice has V as in the active, but with *v* replaced by a functional category *Prt* (Participle), introducing the passive morphology and replacing the source of the underlying subject and the accusative case licensing a direct object. These structures are in turn embedded in a Tense phrase. In the transitive construction, T attracts the subject to its specifier (Spec-of-T), the clause subject position; in the corresponding passive, T attracts the direct object. In both cases, the NP attracted to Spec-of-T is assigned the Nominative case. That is:

(13)

    a.   John saw Mary.
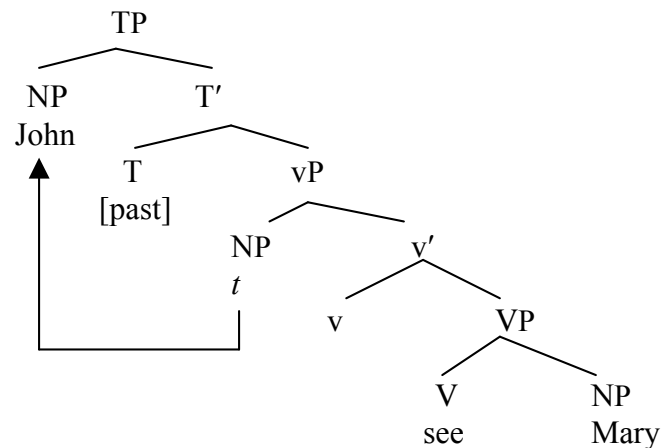
    b.   Mary was seen.
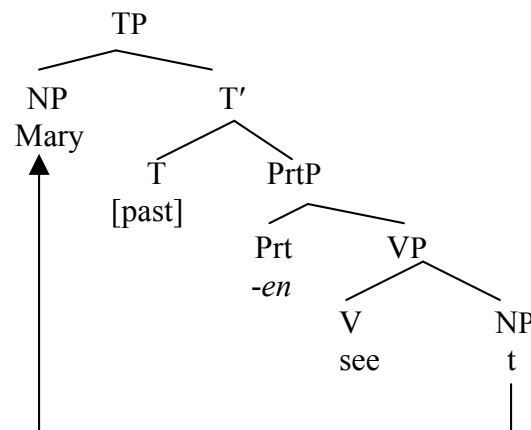
Thus, the underlying subject in (13a) and the direct object in (13b) are placed in the subject position (i.e., raised to Spec-of-T) in the same way. T attracts and assigns the

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[11] This generalization is prima facie falsified in Slavic by impersonal constructions such as *menja tošnit* 'I$_{ACC}$ am.nauseous'; see Babby 1989.

Nominative case to the highest NP in the verbal phrase. In each instance the source of the Nominative case and that of the thematic role assigned to the corresponding noun are different.

Aside from the lexical representations assembling these structures, an operation *Agree* plays a role in the linguistic processes just described. Replacing earlier notions of feature checking, Agree works as follows. Features may in principle be valued or unvalued. A valued feature identifies a category and a value; for example, [person: third]. An unvalued feature identifies a category alone, but one which requires a value; for example, [person:]. Unvalued features are uninterpretable; the need to assign values in their absence drives syntactic operations. Simplifying somewhat, the operation Agree applies between a head (the *probe*) and a category it c-commands (the *goal*) if both are 'active', i.e., contain uninterpretable features. One effect of Agree is to copy the value of any valued feature in either the probe or goal onto a matching unvalued feature in the other. So if T has the uninterpretable unvalued feature [person:] and the Spec-of-v has the interpretable matching valued feature [person: third], Agree assigns the value 'third' found in the goal to the unvalued feature [person:] in the probe. An ancillary effect of Agree, crucial to our discussion, is that certain probes in the form of functional categories assign structural case to an unvalued case feature in the goal. NPs have a case feature, possibly valued (for selection purposes) and possibly not (to be assigned structural case). Probe T assigns Nom(inative) case to an unvalued feature [case:] in the goal, and *v* assigns Acc(usative) to the same feature. Finally, T has an 'EPP' feature which additionally requires that Agree move the goal to the specifier of the probe.[12]

In (13a), then, *v* is added to VP to introduce the Agent and the source of case assignment to the direct object: *v* Agrees with the NP *Mary* and assigns the value Acc to its feature [case:]; no movement takes place. Later in the derivation, T Agrees with the NP *John*; the latter is assigned the value Nom to its feature [case:] and raises to Spec-of-T in order to satisfy the EPP requirement of T. In (13b), on the other hand, there is no *v* to assign structural case to the direct object NP *Mary*. Therefore, when T functions as the

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[12] The term 'EPP feature' refers to the requirement of some categories that their specifier position be filled by a non-argument; this replaces an earlier element of the theory, the Extended Projection Principle, hence the abbreviation, but the principle itself is no longer part of the theory. The EPP feature has been more recently recast as an `edge feature'.

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probe of Agree and seeks a goal, it sees not Spec-of-v, but Comp-of-V, and Agrees with it. The result is case assignment and raising of the direct object to Spec-of-T. The operation Agree is subject to *intervention effects*, or the *shortest link principle*, meaning that it applies to the first (structurally highest) potential goal. This explains why T does not Agree with Comp-of-V in (13a): Spec-of-v intervenes.

We return now to our problem: how to license the second adnominal genitives in (12) by a single source of case, while permitting them to be assigned a thematic role by either of two distinct sources, one assigning the thematic role of Possessor, and the other – of Agent. We combine the agreement and case assignment apparatus just outlined for clausal structure with the *Determiner Phrase hypothesis*, widely assumed in current work (although we examine controversies surrounding the application of this hypothesis to Slavic below, in section 2.2.3). According to this hypothesis, what are typically called NPs are in fact complements of a functional category Determiner (D), parallel to the way that a VP is a complement of a functional category (*v* or T). D assigns the referential properties to a nominal phrase which make it eligible to be an argument (Longobardi 1994; see also Rappaport 2000b). In addition, the functional category D performs certain grammatical duties: it is analogous to v and T in assigning case under Agree.

For the Agentive interpretation of (12a), we propose the following structure of the nominal phrase:

(14)   a.
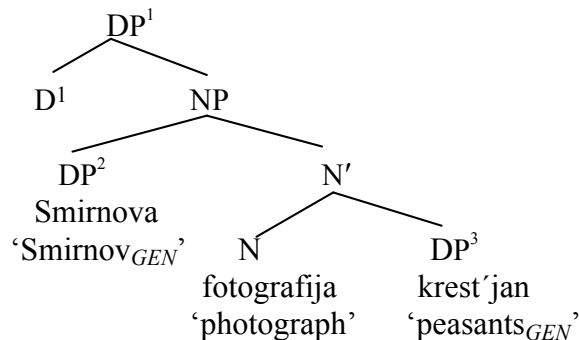
The head noun *fotografija* 'photograph' is a result nominal with two arguments: y = [D, Genitive], Theme and x = [D], Agent. Argument y expressed by DP^3 is merged as Comp-of-N, with a valued case feature [case:Genitive] selected by its head. This is an instance of inherent case, as both the case value and thematic role are licensed by the head N. In contrast, argument x, expressed as DP^2 and merged next as Spec-of-N, has an unvalued case feature [case:]. While DP^2 receives its thematic role from the head N, its case is

assigned by the functional category D^1 when the latter Agrees with it. Since the category licensing case is not the source of the thematic role, this is an instance of structural case assignment. DP^3 is invisible as a potential goal to probe D1, since DP^2 intervenes.

In the Possessor interpretation of (12a), we assume a functional category Poss(essor) which is analogous to *v* of (13a) in assigning a thematic role to its specifier without assigning it case.[13] The following structure results:

(14) b.

```
                        DP¹
                       /    \
                     D¹      PossP
                           /       \
                        DP²          Poss′
                     Smirnova       /     \
                  'Smirnov_GEN'   Poss     NP
                                         /    \
                                        N      DP³
                                   fotografija  krest´jan
                                   'photograph' 'peasants_GEN'
```
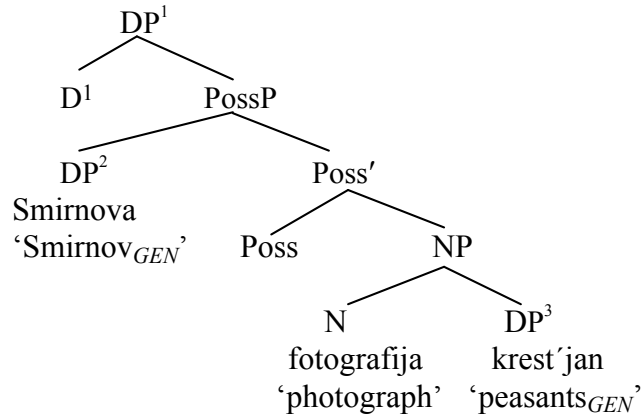
In this construction, of the two potential arguments of the head noun, only the one corresponding to the Theme is realized, as above in the form of DP^3 assigned inherent case. DP^2 is assigned the thematic role Possessor by its head Poss, but structural case by D^1, as above. Again, DP^3 falls outside the picture of structural case assignment by D^1, because DP^2 intervenes. If a triple adnominal genitive construction is attempted (e.g., a photograph of peasants taken by Smirnov and belonging to Ivanov), both Spec-of-Poss and Spec-of-N are merged with unvalued case features, but only the former (because it is higher) can be assigned structural case (by D^1); the latter is left with an uninterpretable feature ([case:]), causing the derivation to crash.

2.2.2 Possessive Adjectives

Now we return to the possessive adjectives mentioned in section 2.1, be they derived from pronouns (e.g., Russian *moj* 'my', *tvoj* 'your$_{SG}$'; *naš* 'our', *vaš* 'your$_{PL}$') or nouns formed by the suffixes *-ov, -in*.[14] As is well-known, there are considerable restrictions on the derivation of possessive adjectives from nouns: the nominal base must be a) animate,

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[13] A functional category Possessor is assumed in Slavic work inter alia by Schoorlemmer 1998b.

[14] See especially Babyonyshev 1998; Corbett 1987; Kopčevskaja-Tamm and Šmelev 1994; Padučeva 1984; Rappaport 2000b on possessive adjectives.

b) singular, c) definite, and d) a head (not a phrase). Furthermore, while possessive adjectives share with adjectives the property of undergoing Concord with the head noun of the phrase, the former exhibit referentiality in a way not characteristic of the latter: possessive adjectives can be the antecedents of both pronominal and anaphoric pronouns. For example, Chvany 1977 draws the following contrast:

(15) a. Ja xotel vzjat' knigu Lizy/Lizinu knigu, no ona mne ee ne dala.
          'I wanted to take the book of Lisa/Lisa's book, but she [i.e., Lisa]
          didn't give it to me.'

      b. *Vanja privez čudnye amerikanskie sapogi. Kstati, vy tam byvali?
          ('Vanya brought wonderful American boots; incidentally, have you ever
          been there [i.e., to America]?')

And possessive adjectives serve as possible antecedents for a reflexive pronoun contained in the same NP (Rappaport 1986b):

(16) a. Ja videl [vaš$_i$ portret svoix$_i$ detej].
          'I saw [your$_i$ portrait of your$_i$ children].'

      b. On čital [moju$_i$ stat'ju pro sebja$_i$].
          'He read [my$_i$ article about myself$_i$].'

In contrast, a relational adjective derived from a noun is not an eligible antecedent for a reflexive pronoun:

(16) c. On$_i$ rasskazal [amerikanskij$_j$ anekdot pro sebja$_{i,*j}$]
          'He told [an American joke about himself/*America].'
          On$_i$ kupil [avtorskij$_j$ èkzempljar u sebja$_{i,*j}$]
          'He bought [an author's copy at his own place/*at the author's place].'

How can these adjectival forms be licensed in the Spec-of-N and Spec-of-Poss positions, normally occupied by nominals in the genitive case, and differentiated in both respects from relational adjectives, which would stand in adjunct position?

We submit that possessive adjectives are "hidden", or "covert" genitive DPs. The justification for this view is that there are a range of constructions in which possessive adjectives function in parallel with genitive nominal phrases in category and case. Simile expressions based on the preposition *kak* 'like, as' introduce an NP agreeing in case with the standard of comparison (11a) (Rappaport 1986a). When such a construction is applied to a possessive pronoun, the complement of the preposition is an NP in the genitive case (11d):

(17) a. *On* letit kak *ptica*.
      '*He*$_{NOM}$ flies like a *bird*$_{NOM}$.'

  b. On *menja* ub´et kak *muxu*.
      'He will kill *me*$_{ACC}$ like a *fly*$_{ACC}$.'

  c. Pomogaju *emu* kak *bratu*.
      'I am helping *him*$_{DAT}$ like a *brother*$_{DAT}$'

  d. [*Vaša* pervaja zadača, kak *Evropejcev*], budet…
      '[*Your* first task as *Europeans*$_{GEN}$] will be…'

The normal possessive form may be replaced by a genitive pronominal form in order to permit a contrastive structure with a lexical noun:

(18) a. On stavit pod somnenie vašu kompetentnost´ (*kompetentnost´ vas)
      'He is placing your competence (*the competence of you$_{GEN}$) in doubt.'

  b. On stavit pod somnenie kompetentnost´ *vas* kak *biografa*. (Padučeva 1984)
      'He is placing your competence as a biographer [lit., 'the competence of *you*$_{GEN}$ as *a biographer*$_{GEN}$'] in doubt.'

NP appositives referring to possessive pronouns also appear in the genitive case:

(19)   Ja ničego ne pisala radi, tak skazat', svoej žizni, žizni *menja*, *Marii Veniaminovny* [letter to *Novyj mir*, 1969]
      'I wrote nothing for the sake of, that is to say, my own life, the life *of me*, *Marija Veniaminovna*.'

Note finally the case parallelism in coordinated structures such as the following, in which an NP in the genitive case is treated as syntactically parallel to a possessive pronoun:

(20) a. Èto *moja* i *moej ženy* mašina.
      'This is my and my wife's car.'

  b. Èto kol´co ne *moe*, a *otca*.
      'This ring is not *mine*, but (*my) father's*.'

  c. Ja *Mjatleva Ivana*, a ne *tvoja*, bolvana. (from a poem)
      'I am the puppet of *Ivan Mjatlev*$_{GEN}$, not *yours*.'

One finds in Russian on a restricted basis constructions such as *teti Mašiny deti* 'Aunt Masha's children' or *Mar´i Ivanovnin dom*, in which the compound *tetja Maša* or *Mar´ja Invanovna* is expressed by forming a possessive form for the second part, and genitive for the first part. Parallel phenomena are more regularly found in other Slavic languages, such as Upper Sorbian (see, for example, Corbett 1987). As shown in (21a), possessive nouns are readily formed alongside the usual adnominal genitive possessor. More complicated are (21b,c), where the possessor is expressed by a nominal phrase: the suffix is attached to the nominal head, and remainder of the phrase is in the genitive case:

(21) a. dźěći bratra   ~   bratrowe$_{NOM}$ dźěći$_{NOM}$
           'the children of brother$_{GEN}$' ~   'brother's children'

      b. basnje Jurija Winarja   ~   Jurija Winarjowe$_{NOM}$ basnje$_{NOM}$
           'the poems of Jurij$_{GEN}$ Winarj$_{GEN}$' ~   'Jurij$_{GEN}$ Winarj's$_{NOM}$ poems'

      c. dźěći mojeho bratra   ~   mojeho bratrowe dźěći
           'the children of my$_{GEN}$ brother$_{GEN}$' ~   'my$_{GEN}$ brother's$_{NOM}$ children$_{NOM}$'

The genitive agreement in the form *Jurija* 'Jurij$_{GEN}$' and *mojeho* 'my$_{GEN}$' reflects agreement with the following possessive noun, which includes no such expression of the genitive case (its agreement morphology is determined by the head of the phrase). Such constructions provide yet another argument that possessive adjectives are syntactically associated with the genitive case.

How, then, to capture the blend of properties exhibited by possessive adjectives? They are referential, are associated with the genitive case, and can function syntactically like nominals (more precisely, DPs), but they have the agreement morphology of adjectives (undergoing Concord). We assume that the possessive adjective, whether derived from a noun or pronoun, is a DP in either Spec-of-Poss or Spec-of-N, like the corresponding adnominal genitives (cf. 14a,b). As for the internal structure of this DP, it is headed by the content features for number, animacy, and definiteness. Following the A-morphous morphology architecture of Slavic pronouns developed in Rappaport 2000a, we assume that post-syntactic morphology can, under the appropriate morphological conditions, spell out the feature set [singular, animate, definite, genitive] as {-in} (or, less productively in Russian, {-ov}) in the general case, with, unsurprisingly, considerable suppletion for the pronouns. That the relevant features are associated with the functional category D but expressed morphologically in the form of the noun has its parallel at the clause level to tense and agreement features being associated with the functional category T but being expressed morphologically in the verb form.[15] The possessive suffix is associated with the feature [Adj], rendering the form sensitive to Concord. While the third person possessives in literary Russian (*ego* 'his', *ee* 'her', *ix* 'their') do not express

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[15] Minimalist analysis has dispensed with the mechanism of head movement, whereby the lexical categories in question could raise to the higher functional head and be incorporated there, checking (effectively, matching) features. A detailed analysis along these lines is developed by Babyonyshev 1998. A somewhat different approach is developed in Veselovská 1998. Minimalism would place this feature sharing outside the syntax proper in Phonological Form, sensitive to the contiguity of the two heads. If the Sorbian facts are as restricted as the cited examples suggest (to appositional and possessive structures,. excluding ordinary attributive constructions), they could be incorporated in such an approach.

agreement, substandard forms assimilating them to the pattern found in the other persons have developed; cf. *evonyj* (*evojnyj*) 'his', *jejnyj* (*eenyj*) 'her', *ixnij* 'their'.[16]

Some of the South Slavic languages permit the use of the NP-internal possessive dative instead of the possessive form for pronominal possessors (e.g., Serbian/Croatian/Bosnian *sestra mu* 'his sister', literally, 'sister him$_{DAT}$' alongside *njegova sestra* 'his sister').[17] The possessive form in this construction is straightforward, with the direct substitution of the dative for the genitive as a means of expressing a pronominal specifier, thereby obviating the rule deriving possessive pronouns. This approach is particularly unsurprising when one keeps in mind the expansion of the genitive at the expense of the dative within the NP in the history of the Slavic languages: AG60 cites such forms as *svidetel´ delu* 'a witness to the affair', *pričina postupku* 'the reason for the deed', *gonenija Ljubon´ke* 'the persecutions of Ljubon´ka', characteristic of nineteenth century Russian, as opposed to the genitive which would be encountered today.

2.2.3 The DP hypothesis

The first published work on generative grammar (Chomsky 1957/2002) assumed that clausal structure includes a free-standing syntactic element representing verbal agreement which stood in the position of Aux(iliary). The idea was that a transformation of Affix Hopping would then ensure that this morpheme would be attached to the appropriate verbal lexeme. As Lasnik 1999, 98 has observed, 'Much of the apparent chaos of [English verbal morphology-GR] was rendered systematic by the fundamental insight that the tense-agreement inflectional morpheme ("C") is syntactically independent, even though always a bound morpheme superficially'.

In later work this formative developed into an INFL(ectional), AGR(eement) or T(ense) node, and more broadly, served as the prototype for a theory of functional categories in clausal structure, categories which were relevant to syntactic processes, but inherently neither lexical nor associated with a lexical category. Lasnik noted further (ibid.) that a standard assumption of the Government-Binding model of the 1980's was

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[16] The last form, the plural *ixnij*, is much less marked stylistically in the contemporary language than the singular forms. See Rappaport 2000a for more details on the morphology and category of possessive pronouns in Slavic.

[17] This is unlike French, which is restricted neither to pronouns (*la mère à Marie* 'Mary's mother') nor to NP-internal position (*ce livre est à Marie* 'This is Mary's book.').

that the clause ('S') is the maximal projection of the inflectional morpheme INFL (='C' of Chomsky 1957/2002).

Szabolcsi 1983-4 took the fact that in Hungarian a noun accompanied by a possessor expresses agreement with that possessor (in the nominative or dative case) to propose for Hungarian an INFL node in NP structure analogous to its eponymous counterpart in clause structure: the former bears agreement morphology expressed on the nominal stem and assigns nominative case to the possessor. The nuances of an additional, dative possessor construction in Hungarian suggested a KOMP node (analogous to COMP(lementizer)) which is the site of the dative possessor.

Abney 1987 took as a starting point the 'Poss-ing' gerundive construction of English, such as *John's building a spaceship*. Noting that (on the nominal reading) it functions syntactically in its larger context as a NP, Abney asked what the head of such a construction is. In other words, how can a gerundive construction be considered the projection of a nominal element, which we would expect it to be if it looks like a noun from the point of view of its external syntax. Abney went on to consider the Hungarian facts and those of other languages with NP-internal agreement (especially Turkish) to extend Szabolcsi's conclusion to additional languages and constructions that there is a functional category in nominal structure analogous to the INFL of the clause and heading all nominal phrases. The '*s*-genitive' of English possessives (as in *John's book* and *John's crying*) was viewed as a case assigned by this nominal agreement category, analogous to the nominative case assigned to the subject of an English clause. Thus, this nominal agreement category could a) facilitate the agreement of a noun with its possessor and b) assign case to the possessor, both analogous to INFL of the clause. Abney was quite clear (p. 40) that the existence of a functional head of the noun phrase and the categorical identity of that head (should it exist) are separate questions. As for the second question, he asked, if modals are the lexical class of clausal INFL, what is the lexical class of the nominal counterpart he was postulating? He concluded that it was the set of determiners, so that the postulated functional category in the nominal phrase is a D(eterminer). The Determiner par excellence in English, of course, is the article, whether definite (*the*) or indefinite (*a(n))*, but includes such elements as demonstratives (*this,*

that), quantifiers (e.g., *every*), and personal pronouns.[18] It followed that what has traditionally been considered a nominal phrase is actually a Determiner Phrase which includes the familiar NP, now the complement of D. Typical arguments for the Determiner Phase can be distinguished as follows:

a) X-bar theoretic arguments: fitting all nominal-like constituents into the structure assumed by X-bar theory, with a head which determines the essential properties and distribution of the constituent supplemented by adjunct and complement satellites. Abney's original argument based on English Poss-ing constructions is of this type.

b) Providing a site (in the form of a functional head) associated with nominal-phrase-internal grammatical processes such as

i) nominal-phrase internal agreement, as observed in some languages (cf. the Hungarian case noted above)

ii) case assigned to subject-like arguments, such as agents and possessors (cf. the *'s*-genitive in English)

iii) representing the site of a nominal phrases referential and formal properties (e.g., Abney 1987, p. 226)

c) Providing a site for both initial merge of syntactic elements and a landing site for movement which can account for structural regularities in word order, whether for maximal projections or head movement; on the latter, see Babyonyshev's 1998 analysis of possessive pronouns in Russian (in which the noun denoting the possessor raises to D, occupied by the possessive suffix) and Pereltsvaig's (2006) account of approximative inversion in Russian (in which, for example, *minut pjat'* 'about five minutes' is derived from *pjat' minut* 'five minutes' by the raising of the quantified noun to D).

d) Provide a layer of structure, or shell, which can block movement which is otherwise expected.

Between the obvious extreme positions of 1) all languages have a functional category in every nominal phrase and 2) there is no functional category in any nominal phrase, there are various hybrid positions. For example, Longobardi 1994 argued that a nominal phrase is associated with a functional category D if and only if it is an argument, since D

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[18] Determiners seem to be intimately related to possessors (e.g., articles and possessors are in complementary distribution in English: *the my book), but the precise relation is not obvious and may depend on the language (cf. Italian *il mio libro* 'the my book').

imbues the phrase with reference. Corver 1992 proposed the *Parameterized DP Hypothesis*, according to which some languages have DPs while others do not; the distinction is seen in more limited syntactic extraction from nominal phrases in the former case. Zlatić 1997 went further in this direction to claim that languages with articles have DPs, while those without articles do not. Among Slavic languages, Bulgarian and Macedonian are considered to have articles (in the form of a clitic: contrast *čovek* 'person' with *čovek"t* 'the person', and *dob"r čovek* 'good person' with *dobrijat čovek* 'the good person'). The extent to which these languages differ from other Slavic languages has correspondingly been an active area of research.

DPs in various Slavic languages are assumed or supported, for example, in Babyonyshev 1998, Dimitrova-Vulchanova 1998, Englehardt and Trugman 1998a, b, Fowler and Franks 1994, Pereltsvaig 2007, Progovac 1998, and Rappaport 2000b. Arguing (to varying degrees) that these languages do not exhibit DPs are Bošković 2005, 2008, Willim 1997, 1999, 2000, and Zlatić 1997.[19] The issue remains unresolved not only because of differences in theoretical assumptions, but in resolving subtle matters of grammatical detail. Bošković (op. cit.) in particular has developed a sweeping picture of contrasts between languages with articles and those without, which he attributes to DPs in the former and the (possible) absence of a DP in the latter. Until various empirical claims are better documented and the advantages of the alternative analysis are provided with an adequate explanation, the question can be expected to remain a field of lively and productive debate.

3. Process Nominals: Structure and Analysis

Having defined the internal structure of the Slavic NP in general terms on the basis of simple nominals, we now turn to *process nominals*: deverbal nouns denoting an action or state.[20] Such nominals have attracted special attention primarily for two reasons. First,

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[19]Rozwadowska 1995b, 1997 discusses the DP hypothesis, but frames her own detailed analysis of Polish NPs without it.

[20] Grimshaw 1990 uses the term "process nominal" (equivalently, "complex event nominal") to denote any nominal, regardless of morphology, with a true argument structure consisting of both thematic and aspectual dimensions. There are semantic nuances that we abstract away from to the extent possible. Process nominals can focus on manner (*Vaše ispolnenie Shopena bylo velikolepnoe* 'Your performance of Chopin was wonderful'), on the fact that an event occured (*Ispolnenie vami Shopena bylo ochen' umestno* 'Your performance of Chopin was very appropriate'), and on the aspectual nature of the event itself *Vaše ispolnenie sonaty dlilos' polčasa* 'Your performance of the sonata lasted a half hour.' Spencer and Zaretskaya 1999 reports on a data base project

their paraphrase relationship with clauses (e.g., *the enemy destroyed the city* versus *the enemy's destruction of the city*; *the city was destroyed by the enemy* versus *the city's destruction by the enemy*) raises questions of how to capture the formal differences on the background of the lexical, semantic, and structural similarities. Second, there is the question of how to describe the fact that phrases projected from process nominals have the external syntax of NPs (they function as NPs in the greater context of the clause), while their internal syntax exhibits (to varying degrees) properties more typical of VPs. As above, we survey the relevant structural properties of process nominals before making a formal proposal.[21]

3.1. The NP-internal Grammatical Functions of Process Nominals

We begin by considering the following continuum of English structures:

(22) I was surprised by
    a. [John immediately *refusing* the offer]
    b. [John's immediately *refusing* the offer]
    c. [John's immediate *refusing* of the offer]
    d. [John's immediate *refusal* of the offer]

The italicized head of the bracketed phrase can take the morphological form of a *gerund* (in *-ing*) or a *derived (action) nominal* (here, in *-al*). The Agent of the nominalized action in (22) can be expressed by a bare NP or a possessive form in *'s* (an alternative in the latter case is a possessive pronoun, e.g., *his*). The Theme can similarly be a bare NP or be accompanied by a marker of obliqueness (in this case, the preposition *of*). Certain other structural properties are correlated with the form of the Theme. A bare NP Theme (as in 22a,b) is incompatible with an article ((*the) *refusing the offer*), admits an aspectual auxiliary (*John/John's having refused the offer*), and entails an adverbial modifier (**John/John's immediate refusing the offer*); a Theme accompanied by the obliqueness marker *of*, on the other hand, admits an article (*the refusing of the offer*), is incompatible with an aspectual auxiliary (**John's having refusing/refusal of the offer*) and requires an

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classifying deverbal nouns in terms of several parameters, including the semantic sub-types just noted. See Schoorlemmer 1998a for a detailed analysis of the grammatical and semantic properties of process nominals in Russian. Result nominals (e.g., *izobretenie* 'invention = that which has been invented') are simple nominals, as noted above. Simple nouns also include simple event nouns (e.g., *poezdka* 'trip'), which differ semantically from a process nominal in that the former describes an event without a thematic and aspectual dimension, Strictly, according to Grimshaw, a simple event has participants, not arguments. For simplicity, we use the term 'argument' for both concepts.

[21] See Kopčevskaja-Tamm 1993 for a cross-linguistic typological survey.

adjectival modifier (*John's immediately refusing of the offer). The phrase in (22a) is most like a VP in terms of these properties, while that of (22d) in these respects has the structure of a Noun Phrase. The other two structures (22b) and (22c) are transitional in blending NP-like and VP-like properties.

   Slavic exhibits some such variation among process nominals, but to a lesser degree than does English. While a structure analogous to (22a) is unknown in Slavic, something like (17b), called a *gerundive nominal* (or a *POSS -ing construction*) in English, is found in Bulgarian and Macedonian (see Revzin 1973 and Dyer and Fowler 1988). For example, Bulgarian distinguishes derived nominals in orthographic *-nie*, which are unproductive formations of Old Church Slavonic origin, from productive process nominals in orthographic *-ne*. The latter can take a complement introduced by the preposition *na* (corresponding to the genitive case of other Slavic languages and English *of*) or a bare NP; the latter structure resembles that of the gerundive nominal of English. (23a,b) illustrate the two *–ne* structures for Bulgarian:

(23) a. Ivanovoto četene na knigata
          'Ivan's reading of the book'
      b. otgleždane piletata ot esennoto ljupene…
          'raising the chickens from the autumn hatching…'

These two constructions contrast in several ways. The former takes adjective modifiers and permits a definite article (in this example, *-to* cliticized to the specifier of the nominal). The latter takes adverbial modifiers and permits no definite article (the definite articles *-ta* and *-to* are associated not with the head noun, but with the embedded NPs *pileta* 'chickens' and *eseno ljupene* 'autumn hatching', respectively). Although the construction without *na* is apparently receding from the language, it is still encountered in journalistic prose. We will return to the theoretical significance of this construction below.

   The situation in Russian, in contrast, is more typical of the Slavic languages. We distinguish two kinds of process nouns, defined by their morphological model. Those formed by the suffix {-(e)n´ij-}/{-t´ij-}) (e.g., *vospitanie* 'upbringing', *lišenie* 'depriving', *otkrytie* 'discovering') will be called *-n/-t* nominals, in shorthand reference to the forms of this suffix. *Derived (action) nouns* are formed from verbal stems by any of a large number of unproductive suffixation processes (e.g., *zaščita* 'defense', *stirka*

'laundering', etc.).[22] Nominal phrases head by both types of process noun exhibit the internal syntax of a standard NP (analogous to (22d)), as discussed above: they take adjectival modifiers, a genitive complement, and the usual range of agreeing specifiers. That they appear only in the singular follows from their lexical nature as 'mass' (not 'count') nouns: they do not denote discrete entities.

The syntactic realization of arguments found at the VP level is retained in process nominals, but it is transmuted into the grammatical relations of NP structure. Examples are given in (24) and (25). Both the specifier and direct complement positions are expressed by the genitive case (an alternative in the latter case is a possessive adjective, as discussed below); the so-called "subject genitive" (the *genitivus subiektivus* of traditional grammar) is illustrated in (24a)/(25a), and the "object genitive" (*genitivus obiektivus*) is illustrated in (24b)/(25b). Oblique complements corresponding to their formal expression in the original verbal form are given in (24c)/(25c):[23]

(24) a. nastuplenie zimy 'the arrival of winter$_{GEN}$'
          žurčan´e vody 'the murmuring of the water$_{GEN}$'

      b. perevypolnenie normy 'overfulfilling the norm$_{GEN}$'
          vospitanie patriotizma 'inculcation of patriotism$_{GEN}$'
          čtenie moego prostrannogo zajavlenija 'the reading of my lengthy
              application$_{GEN}$'

      c. služenie ljudjam 'serving people$_{DAT}$'
          zanjatie muzykoj 'the pursuit of music$_{INST}$'
          izbranie ego mèrom 'electing him$_{GEN}$ mayor$_{INST}$'

(25) a. šopot vetra 'the whispering of the wind$_{GEN}$'

      b. rubka lesa 'the chopping down of the forest$_{GEN}$'
          zaščita otečestva 'the defense of the fatherland$_{GEN}$'
          stirka bel´ja 'washing linen$_{GEN}$'
          priem ranenyx 'the reception of the wounded$_{GEN}$'

---

[22] Ambiguity abounds. The –n/-t suffix found in process nouns is also used to derive simple nouns (especially denoting result), in which case the result is not a process nominal (e.g., *zavoevanie* may denote the result of conquest as well as the process of conquering). Similarly, a derived action nominal can represent a simple or process noun (e.g., *pod″ezd* 'entrance to a building' versus 'approach'). On the morphological structure of derived action nominals in Russian, see Dulewiczowa 1976.

[23] The correspondences illustrated in (20c) are direct, but there are indirect correspondences as well. For example, *ljubit´ rodinu* 'to love the motherland' ~ *ljubov´ k rodine* 'love for the motherland$_{DAT}$' is not isolated, but rather illustrates how an Experiencer subject (as opposed to an Agent) can result in a different syntactic expression of the Theme argument; cf. also *interesovat´sja grammatikoj* 'to be interested in grammar$_{INST}$' ~ *interes k grammatike* 'interest in grammar$_{DAT}$'.

  èvakuacija učreždenij i skladov 'the evacuation of institutions$_{GEN}$
   and warehouses$_{GEN}$'

 c. pomošč´ sosedjam 'help for the neighbors$_{DAT}$'
  torgovlja narkotikami 'traffic in narcotics$_{INST}$'
  vera v čeloveka 'belief in man'
  družba s tovariščem 'friendship with a comrade'

As is well-known, ambiguity between the two interpretations of the adnominal genitive
can result:

(26) a. vozvraščenie detej 'the return of the children'
  b. proverka mestkoma pokazala… 'the verification of the local committee
   showed…'
  xarakteristika starosty byla položitel´noj 'the evaluation of the deputy was
  positive'

  There is some controversy about whether such adnominal genitives represent one
syntactic position (configurationally and relationally defined) or two. It would be easy to
demonstrate that they represent two if they could co-exist. Typical, however, are
categorial statements such as the following: "Deverbal nouns never combine
simultaneously with one genitive case noun with subject meaning and another with object
meaning" (AG60, 241). The result is a sharp contrast with simple NPs: process nominals
do not permit double adnominal genitives, while simple nominals do. Contrast the double
adnominal genitives associated with simple nouns in (12) with their impossibility in the
following process nominals:

(27) a. *fotografirovanie krest´jan Smirnova
   photographing peasantse$_{GEN}$ Smirnov$_{GEN}$
  ('Smirnov's photographing of the peasants')

  b. *otkrytie   periodičeskogo zakona Mendeleeva
   discovering periodic$_{GEN}$ law$_{GEN}$ Mendeleev$_{GEN}$
  ('Mendeleev's discovery of the periodic law')

  c. *stirka bel'ja   studenta
   laundry bed linen$_{GEN}$ student$_{GEN}$
  ('a student's laundering of bed linen')

  The ungrammaticality of (27) has suggested to some investigators that there is but
one adnominal position available to process nominals, a subject position, with apparent
instances of an object interpretation in fact being the result of passivization within the NP
converting the underlying object into a subject (Revzin 1973; Veyrenc 1972). Two
arguments have been cited in favor of this analysis. First, as AG60 notes (p. 241), in

order to avoid the double genitive, the Agent (and, to a more limited degree, an Experiencer) can be expressed by an instrumental NP, as in the passive:

(28) a. ispolnenie romansa pevicej
         'performance of the romance$_{GEN}$ by the singer$_{INST}$'

    b. čtenie proizvedenija avtorom
         'reading of the work$_{GEN}$ by the author$_{INST}$'

    c. my vosprinimaem X kak Y v silu znanija nami togo èkstralingvističeskogo
         fakta, čto…
         'we understand X as Y as a result of the knowledge by us$_{INST}$
         of the extralinguistic fact$_{GEN}$, that…'

For example, (28a) is a nominal paraphrase of the clausal passive *Romans byl ispolnen pevicej* 'the romance$_{NOM}$ was performed by the singer$_{INST}$', and the derived subject of the nominalization is then expressible by the adnominal genitive.[24] Revzin also points out that the instrumental is possible only with transitive nominals (e.g., *priezd otcom 'the arrival by father'), which would follow from the impossibility of intransitive passives in Russian. Second, while intransitive verbs derived from transitive verbs are identified by the suffix -*sja*, process nominals in Russian do not morphologically differentiate the two forms. Thus, while at the clausal level one can distinguish *strana razvivaet sel´skoe xozjastvo* 'the country develops the agricultural economy' and *sel´skoe xozjajstvo razvivaetsja* 'the agricultural economy develops', the deverbal noun phrase *razvitie sel´skogo xozjajstva* 'the development of the agricultural economy' is ambiguous between these two interpretations (which can be dispelled by the addition of an agent, e.g., *stranoj*). The argument is that the lack of a morphological marker of NP-level passivization conceals the fact that this syntactic process has taken place, accounting for the ambiguity of constructions as in (26). The object interpretation of the genitive NP results from an active construction at the NP level (with an implicit, or PRO, subject (e.g., *vozvraščenie detej ~ kto-to kuda-to vozvraščal/vernul detej* '(someone) returned the children (somewhere)'; the subject interpretation results from a passive or middle construction at the NP level: *vozvraščenie detej ~ deti vozvraščalis'/vernulis'* 'the children (were) returned'. We will return to the issue below in the context of our formal proposal.

    Before moving on to that proposal, a comment about a parameter of cross-linguistic morphosyntactic variation is appropriate. Although process nouns are derived from

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[24] The stative (28c) is less amenable to such a paraphrase.

verbal stems, and the NPs headed by these nouns can have clausal paraphrases, certain properties are lost in their "compression" into nominal structure. Tense, agreement, mood and the regular expression of negation in particular are not expressed in nominal forms, even in their most "verbal" forms of Bulgarian and Macedonian. However, the two grammatical categories common to all verbal forms, aspect and voice, appear in –n/-t process nouns (although not in derived action nouns) to varying degrees in various Slavic languages. While not completely productive, clear aspectual distinctions are found in many Polish process nominals (Fokker 1966):

(29) a. Ksiądz kategorycznie odmówił *nadania* takiego imienia.
          'The priest categorically refused *to give*$_{PF}$ such a name.'
          Telewizja Czechosłowacka rozpoczęła *nadawanie* kursów języków obcych.[25]
          'Czechoslovak television has started *broadcasting*$_{IMPF}$ foreign language courses.'
      b. Cały urząd śledczy postawiono na nogi dla *odnalezienia* sprawczyni
          tej potwornej zbrodni.
          'The entire investigation division was mobilized *to find*$_{PF}$ the woman
          who committed this monstrous crime.'
          Był to rok *odnajdywania* bliskich lub ostatecznej pewności, że już nie wrócą.
          'That was the year of *finding*$_{IMPF}$ one's beloved or of the final certainty that
          they would no longer return.'

Also, a voice distinction expressed by the presence versus absence of the clitic *się* can also be carried over from the verbal deriving base to the process nominal in Polish: *przyglądać się Hani* 'to observe Hania$_{DAT}$' ⟹ *przyglądanie się Hani* 'observing Hania$_{DAT}$'. Damborský 1973 notes that *się* is often optional, but obligatory in certain cases: in reflexiva tantum verbs (*banie się* 'being afraid', *spodziewanie się* 'expecting'*; Autorzy opisują zachowanie się premiera* 'The authors describe the behavior of the premier'), when the nominal takes oblique complements (*wstydzenie się czegoś* 'being ashamed of something'*, martwienie się czymś* 'being worried about something'*, przypatrywanie się czemuś* 'observing something'), and when disambiguation is required (*uczenie* (*się*) 'teaching/studying', *porozumienie* (*się)* 'understanding something/each other'*; Przejdę do właściwego przedstawienia się* 'I will move on to a proper introduction of myself'). According to Damborský, Czech carries the voice distinction over from verbs to nouns only in the last category. Such facts are undoubtedly related to

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[25] The lexical distinction here is irrelevant: the aspectual pair *nadawać:nadać* means both 'to assign'and 'to broadcast', with neither meaning favoring one or the other aspect.

the fact that process nominals are generally not only more productive morphologically in Polish (and Czech) than in, say, Russian, but they are found in a wider variety of syntactic contexts, where, for example, Russian might use an infinitive, if anything at all.

The greater productivity of these verbal morphological characteristics of the Polish process nominal is reflected in their syntax as well. Among the Slavic languages, Polish most freely permits the regular combination of (clitic) pronouns in the genitive case to combine with a process noun, just as in a VP: *przypatrywanie mu się* 'looking him over', *zwolnienie go* 'firing him', *upokorzenie cię* 'humiliating you', *przeniesienie go* 'moving him/it'.[26] Moreover, Damborský cites the normative grammarian Doroszewski as seeing a "rather frequent" error in the use of the accusative for the complement of a process noun, which characterizes both bureaucratic and colloquial speech. He gives (30a); (30b) is a contemporary textual example:

(30) a. Proszę o [zwolnienie z pracy dwie pracownice].
          'I request [the release from work (of) two workers$_{ACC}$')].
      b. Proszę Pana również o [ułożenie te podania w miarę możności w hierarchii ...]
          'I also ask of you [the ordering (of) the applications$_{ACC}$ to the extent possible according to ...]'

Damborský also notes adverbial modification of process nouns: *Konspiracja polega na chodzeniu cicho* 'Conspiracy relies on getting around quietly' (cf. *cichym chodzeniu* 'quiet getting around'), [*To*] *skłania widza do zainteresowania się bliżej twórczością wielkiego klasyka* '[This] inclines the viewer to get more closely acquainted with the work of the great classic figure' (cf. *bliższego zainteresowania* 'a closer acquantance').[27] Unless such facts are merely dismissed as performance errors, they suggest that the Polish process nominal may approach, even exceed, that of Bulgarian and Macedonian in its VP-like behavior.

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[26] Analogous constructions are found even in Russian, which does not have pronominal clitics; we will return to this issue below, in discussing the possessive forms.

[27] For more discussion of the use of adverbs with -n/-t nouns in Polish, see Puzynina (1969, 154-55). AG60 cites adverbial uses of the instrumental case with Russian process nominals, such as *rubka toporom* 'chopping with an axe' and *progulki večerami* 'strolls in the evenings', but limited adverbial modification is possible even with simple nouns (*Moskva noč ́ju* 'Moscow at night'). The observation in the text applies to qualitative modification by lexemes which can take either adjectival or adverbial form (e.g., *bližšij* 'closer' versus *bližej* 'more closely').
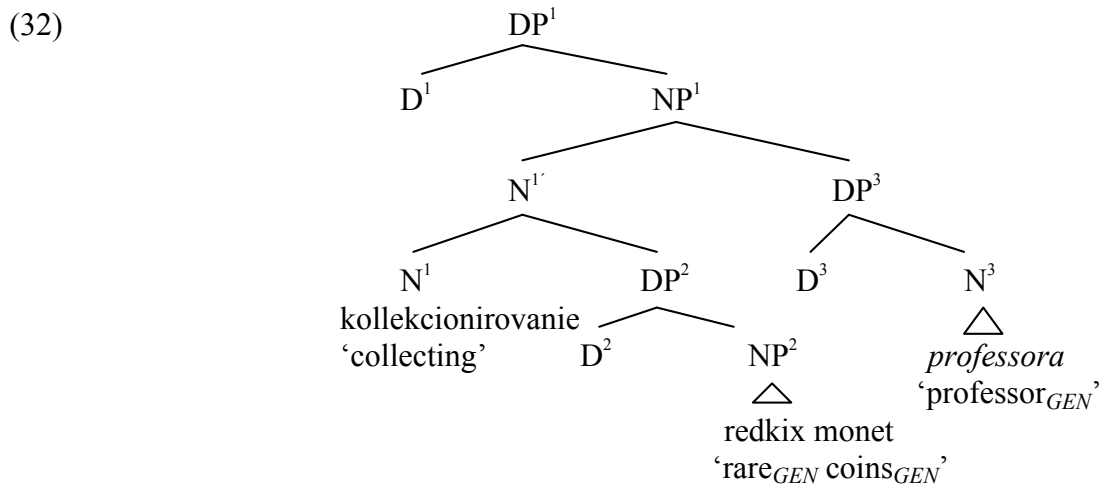
3.2. A Determiner Phrase Analysis of Process Nominals

3.2.1 Structural Case Assignment in Process Nominals

Consider again the impossibility of double adnominal genitives with process nominals, as in (31) (from Englehardt and Trugman 1998b):

(31)   *kollekcionirovanie   redkix monet professora
          collecting rare$_{GEN}$coins$_{GEN}$ professor$_{GEN}$
        ('the professor's collecting of rare coins')

Both the subject and object genitives are arguments of the head noun, and so by assumption are merged with that head and contained in its maximal projection. Such an initial representation is parallel to the VP-Internal Subject Hypothesis, mentioned in section 1. The argument structure of the process noun *kollekcionirovanie* 'collecting' is identical to that of the corresponding verb *kollekcionirovat´* 'to collect', except for its category: [N], <x, y>, where *x*=D, Agent and *y*=D, Theme. These arguments are realized, respectively, in the Spec-of-N and Comp-of-N positions, to give the following initial configurational structure:

(32)

$$DP^1$$

$$D^1 \qquad NP^1$$

$$N^{1'} \qquad DP^3$$

$$N^1 \qquad DP^2 \qquad D^3 \qquad N^3$$
kollekcionirovanie
'collecting' $\quad D^2 \quad NP^2 \qquad$ *professora*
'professor$_{GEN}$'

redkix monet
'rare$_{GEN}$ coins$_{GEN}$'

Our task is to to account for the impossibility of two adnominal genitives in process nominals. In fact, we already have an account, under the assumption that a Determiner head assigns structural case when it Agrees with an eligible probe. The basic idea is that there is only one assigner of structural case, D, but (due to the nature of structural case) it is indifferent to whether it assigns it to Spec-of-N or Comp-of-N: it Agrees with whichever is closer. If two nominals with the unvalued feature [case:] are merged with a process nominal, only one can be assigned case.The Slavic NP, then, differs from a clause in having only one source of structural case, while a clause has two (under

standard assumptions, T(ense) assigns Nominative to the subject in Spec-of-T position, and a light verb *v* assigns Accusative to Comp-of-V). Note that the Determiner selecting a process nominal does not differ from than selecting a simple nominal, which also Agrees (and assigns the Genitive to) the closest DP, whether it is Spec-of-Poss, or, in the absence of that category, Spec-of-N (cf. section 2.2.1). In all cases, D assigns structural case on Agreement independently of the assignment of thematic roles, which are licensed by different heads (Poss or N). Recall that this was the approach to the active:passive contrast in clauses, displayed in (13). This is also the essence of the 'ergative' pattern of case marking in nominals noted by traditional grammarians, who have pointed out (cf. Barxudarov 1973) that in nominal phrases, the counterpart to an intransitive subject is realized with the same form as that used by the counterpart of an object (the genitive, as in the ambiguous *ispolnenie Šopena* 'the performance of Chopin'), while the counterpart of a transitive subject is realized differently (cf. the instrumental in *ispolnenie Šopena Киссиным* 'the performance of Chopin by Kissin'). This pattern of case marking differs from the 'accusative pattern' found in the Slavic clause, in which it is the transitive object which is distinguished (by the accusative) from the other two sentence parts (realized in the nominative).

There are prima facie cases of clearly acceptable double adnominal genitives with process nominals:

(33) a. ožidanie   detej   otpravki   domoj
          expectation children$_{GEN}$ sending$_{GEN}$ home
          'the children's expecting to be sent home'

      b. lišenie   brata   nasledstva
          depriving   brother$_{GEN}$ inheritance$_{GEN}$
          'depriving brother of (his) inheritance'

The difference betwen (33), where a double adnominal genitive is permitted, and (27), where it is not, is that the verbs underlying the process nominals in the former take the genitive case (*ožidat´ čego* 'to expect something$_{GEN}$'; *lišit´ čto čego* 'to deprive something$_{ACC}$ of something$_{GEN}$'). Thus, the complement genitives in (33) represent inherent case, and are thus licensed in a way completely parallel to the way that the Dative and Instrumental case are licensed in (34), by selection:
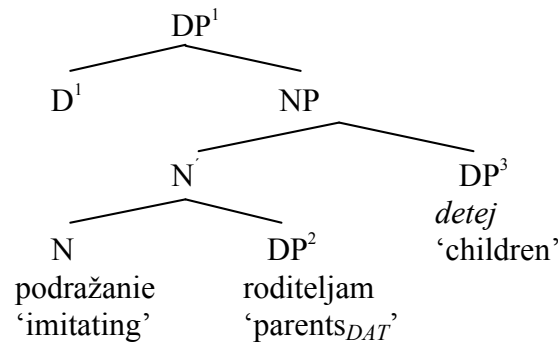
(34) a. podražanie roditeljam   detej
imitation   parents$_{DAT}$ children$_{GEN}$
'the parents' imitation of the children'

b. nedovol´stvo   žizn´ju   detej
dissatisfaction life$_{INST}$ children$_{GEN}$
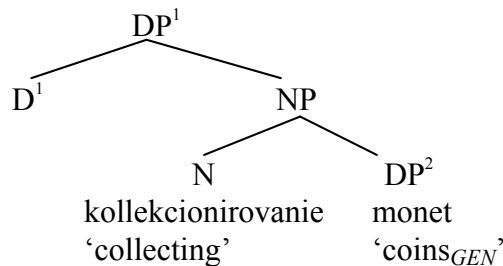'the children's dissatisfaction with life'

Passive cannot apply in any of these cases, just as it cannot in their clausal counterparts (*roditeli byli podražani det´mi 'the parents were imitated by their children'): such nominal phrases are merged with a valued case feature, rendering them 'inactive', or invisible to the operation Agree.

It follows from our analysis, then, that Spec-of-N can receive the genitive case in (35a), and Comp-of-N can receive it in (35b):

(35) a.

```
                          DP¹
                     ┌─────┴─────┐
                    D¹           NP
                          ┌───────┴────────┐
                         N´               DP³
                     ┌────┴────┐          detej
                    N         DP²         'children'
                podražanie  roditeljam
                'imitating' 'parents_DAT'
```

b.

```
                          DP¹
                     ┌─────┴─────┐
                    D¹           NP
                          ┌───────┴────────┐
                         N               DP²
                   kollekcionirovanie    monet
                   'collecting'        'coins_GEN'
```

Thus, unless merged with a valued case feature (inherent case, licensed by selection, as in (33) and (34)), Comp-of-N competes with Spec-of-N for the same source of structural genitive case: D. If both require structural case, as in (27), the construction is ungrammatical. Double adnominal genitives in simple nominals are, as argued in section 2.2.1, analogous to (33): only one of the two genitives is structural.

Since there is only one source of structural case, there is no NP equivalent of (13a) *John saw Mary*. There are two ways a nominal phrase can overcome this limitation and express both primary arguments. One is to internalize (make 'implicit') the Agent and express it as an oblique constituent, as discussed by Grimshaw 1990 and Babby 1997;

e.g., *ispolnenie vami Šopena* 'the performance by you of Chopin'. On this strategy, a noun is lexically associated with an Agent (e.g., *ispolnenie* 'performance', corresponding to *vy ispolnili Šopena* 'you performed Chopin') but no syntactic object associated with that Agent is present in the noun's argument structure ([N] <x>, where x=D, Theme. The other is to employ a possessive adjective to represent the Agent. This latter strategy has its subtleties, and the next subsection is devoted to it.

We have not argued against the (obligatory) passive analysis of process nominals, but only shown that under our assumptions it is not necessary. Engelhardt and Trugman (1998a; 1998b) incorporate the obligatory passive analysis into the Determiner Phrase hypothesis, along with one other element: the derivation of process nominals from VPs. On this approach, the structure for (31), for example, would be as follows:

(36)
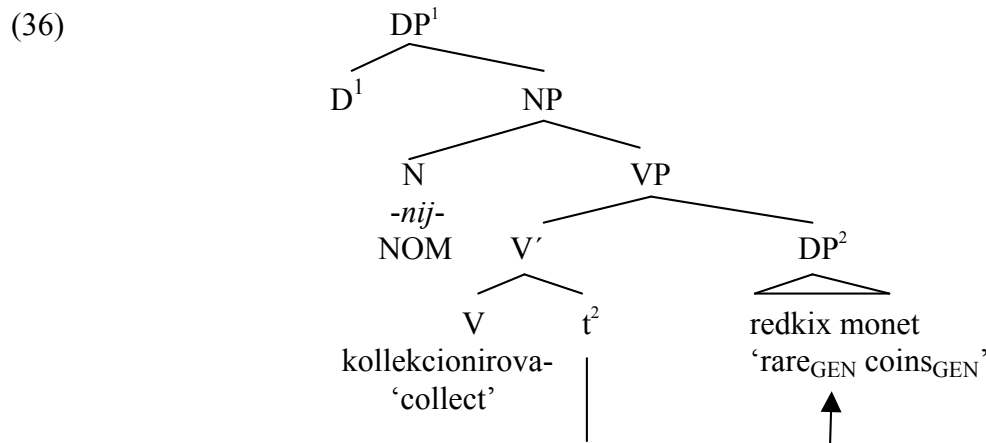
A VP is selected by a noun in the form of a nominalization suffix, itself selected by a D. Passive applies within the VP, raising the Theme DP^2 to Spec-of-V. From there it raises (covertly, in pre-Minimalist theory) to Spec-of-D, where it is assigned case. The V must raise to N and incorporate there with the nominalization suffix.

There are several problematic aspects of this analysis. First, the process nominal of Russian does not exhibit enough VP properties to justify the presence of this phrase. Recall from (22) that the English gerundive nominal, for example, is modified by adverbs (not adjectives) and retains the aspectual marking of the perfect and progressive. Neither of these is true of the Russian process nominal: adverbial modification is very limited (**mazol'no/✓mazol'noe kollekcionirovanie monet* 'the *meticulously/✓meticulous collecting of the coins') and aspectual distinctions are vestigial. And yet (36) is

essentially Abney's analysis of the gerundive nominal, intended to capture just such VP properties. Second, the Bulgarian/Macedonian and substandard Polish nominalizations with accusative complements would not invoke Agreement of the analogue of DP^2 with D in (35b). Structure (36) proposed by Englehardt and Trugman 1998a would be more appropriate to such constructions, since if the complement of the noun appears to get its case in the same fashion as the direct object of a clause VP, then there must be a light verb *v*, and therefore a VP and a higher nominal head responsible for the nominal properties of the phrase. Their analysis, adopting (36) for the standard Slavic process nominal, leaves open the question of how to account for these constructions. Third, there is no account of what drives the passivization of the VP. Obviously the Theme needs to acquire case, but raising it to Spec-of-V does not accomplish this, so this stage of the derivation is unmotivated.

The notion of NP-internal passive is actually impossible within the theoretical framework we assume here. A classic passive construction has three elements: the expression of an underlying direct object as the subject, expression of an underlying subject as an oblique constituent, and some sort of morphological marking of the predicate (*the enemy destroyed the city ~ the city was destroyed by the enemy*; *vrag razrušil gorod ~ gorod byl razrušen vragom*). Recall that in Minimalist analysis (as in Chomsky 2000; 2001 and illustrated in (13)), the light verb *v* introduces (and assigns the Agent thematic role to) the underlying subject and assigns the structural accusative case to the direct object; the passive replaces *v* with a functional category *Prt* (Participle), introducing the passive morphology and eliminating the source of the underlying subject and of the accusative case licensing a direct object. Thus, the underlying direct object (Comp-of-V) is raised to Spec-of-T just as the underlying subject (Spec-of-v) would have been raised: on Agreement with T. But we assume none of T, v, or Prt within the nominal phrase. There is only the internalization of the Agent thematic role, part of a lexical rule which removes the corresponding argument from the lexical representation.[28]

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[28] On the internationalization of a thematic role, or making an argument 'implicit', see Babby 1997 for discussion and references. The approach proposed here fits nicely with Babby's analysis of the suffix *-en*, which generalizes the use of the suffix to process nominals, passive, and causatives in terms of thematic theory. In fact, Babby assimilates the apparent passive properties of process nominals to the diathesis of causative structures, rather than to that of the passive.

The passive analysis which we are rejecting offers an account of how a phrase such as *proverka mestkoma* 'the verification of the local committee' can be ambiguous. On both interpretations the adnominal genitive DP stands in Spec-of-V position; on the subject interpretation this is the underlying position (with a null object), while on the object interpretation passive has applied so that the DP merged as Comp-of-V is raised to Spec-of-V (with the optional expression of an oblique Agent). Alternatively, the underlying structures could be claimed to remain unchanged, but that would require X-bar concepts of specifiers and complements as primitives, so that the DP in question could be merged as Spec-of-V in the absence of Comp-of-V.

This approach is not, however, compatible with the theory of Bare Phrase Structure. As we have noted, on these assumptions a constituent can only be merged in specifier position if the complement position is already filled. The contradiction can be resolved by a lexical approach, such that the problem of such ambiguous structures of part of a larger picture. We first turn to that larger picture.

In the general case, when a process nominal is accompanied by a single adnominal genitive DP, that DP necessarily has an object interpretation:

(37) a. izpol´zovanie soseda kak pomoščnika
          'utilization (by someone) of a neighbor$_{GEN}$ as an assistant'
     b. obsuždenie soseda
          'discussion (by someone) of a neighbor$_{GEN}$'

That is, the morphological rule deriving a process noun from the corresponding verb leaves the Theme argument intact, while the Agent is optional; e.g., *izpol´zova-* [V]: $\langle x, y \rangle$, x=D, Agent, y=D, Theme → *izpol´zovanij-* [N]: $\langle (x), y \rangle$. Since argument *y* is obligatory and not assigned inherent case, argument *x* can be expressed only if it does not block *y* from receiving structural case from D, i.e., if it takes the form of a possessive adjective (e.g., *tvoe izpol´zovanie soseda* 'your utilization of the neighbor'). What appears to be the passive involves no change in the configurational position of argument *y*, while argument *x* is rendered implicit, with possible expression as an oblique constituent (e.g., *izpol´zovanie soseda načal´nikom* 'the utilization of the neighbor by the supervisor'). Interestingly, Padučeva 1984 notes that there is a semantic difference between nominal phrases with the two forms of expressing the Agent argument *x*: the possessive adjective elicits a manner interpretation (*Vaše ispolnenie Šopena bylo*

velikolepnoe 'Your performance of Chopin was wonderful', while the bare instrumental DP elicits a factive interpretation (*Ispolnenie vami Šopena bylo umestno* 'The performance by you of Chopin was appropriate').[29] In the absence of a convincing syntactic account of this distinction, we propose that the rule deriving process nouns in their morphology and argument structure is sensitive to this semantic distinction. If the process noun is to have a manner interpretation, the resulting argument structure is that proposed above: $<(x), y>$, where x can be expressed by a possessive adjective. On the other hand, if the process noun is to have a factive interpretation, the resulting argument structure is $<y>$, y = D, Theme, with the Agent rendered implicit (possibly expressed as an oblique instrumental bare NP).

Padučeva (1984, 54) notes that cases of ambiguity, like the *proverka mestkoma* 'the verification of the local committee' constitute the exception rather than the rule. While further research could well show semantic regularities, there seem to be arbitrary minimal pairs such as the unambiguous *obsuždenie sosedej* 'the discussion (by someone) of the neighbors' versus the ambiguous *osuždenie sosedej* 'the condemnation of the neighbors', in which the adnominal genitive DP expresses either the Agent or Theme. We assume that the Agent interpretation represents a marked result of the rule deriving process nouns, taking the original argument structure of the transitive verb $<x, y>$ and rendering it as $<x>$, x=D, Agent, with an unexpressed (if implicit) Theme.[30]

It follows from our analysis that despite similarities in the mechanism of (structural) case assignment, the possessor of a simple nominal has a different origin than does the 'subject' of a process nominal: the former is merged as Spec-of-Poss (getting its thematic rule Possessor from Poss), while the latter is merged as Spec-of-N (getting its thematic role of Agent or Experiencer from N). This distinction is significant because it holds in

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[29] The same observation is made for Polish by Puzynina (1969, 146).

[30] Babby 2002 discusses the suppression of arguments in noun phrases as instances of controlled *pro* (phonologically null, but syntactically present constituents). The matrix predicate plays a crucial role in argument suppression (defining the properties of control). This phenomenon is distinct from the variation we are discussing here, which is independent of syntactic context. For example, *Amerika rasčityvaet na podderžku Japonii* 'America is counting on the support of Japan' entails argument structure $<x, y>$, where y is present (in the form of *pro*), but suppressed under identity with the clause subject. Cf. the following minimal pair, based on Padučeva's examples given in the text, which highlights the lexical distinction between two process nominals revealed in the same syntactic context:

(i)   Ego postupok, kažetsja, vyzval osuždenie/*obsuždenie kolleg.
      'His act, it seems, elicited the condemnation/*discussion of (his) colleagues.'

languages (e.g., Russian) in which the process nominal has relatively few VP characteristics. Moreover, there is independent justification for this distinction. Zlatić 1997 points out that process nominals behave differently than do simple nominals (typically, "picture" nouns) with respect to defining the *binding domain* within which the antecedent for a reflexive pronoun must be found. She illustrates the point with the following Serbian examples: (38a) with a simple nominal is ambiguous, the constructions in (38b) headed by process nominals are not:

(38)　a.　Jovan$_i$ je pročitao/izgubio [Marijin$_j$ članak o sebi$_{i,j}$].
　　　　　'John$_i$ read/lost [Mary's$_j$ article about self$_{i,j}$].'

　　　b.　Mi$_i$ smo se svi iznenadili [Jovanovim$_j$ vraćanjem dece svojim$_{*i,j}$ roditeljima].
　　　　　We$_i$ were all surprised at [John's$_j$ returning the children to self's$_{*i,j}$ parents].
　　　　　Jovan$_i$ je primetio [lošu$_j$ brigu ovih žena$_j$ o sebi$_{*i,j}$]
　　　　　'John$_i$ noticed [these women's$_j$ poor caring for self$_{*i,j}$].'

This point holds for Russian as well; the ambiguous (39a) with a simple nominal contrasts with the unambiguous (39b), headed by an process nominal:

(39)　a.　Dissidenty$_i$ čitali [naši$_j$ stat´i o sebe$_{i,j}$]
　　　　　'The dissidents$_i$ read [our$_j$ articles about selves$_{i,j}$].'

　　　b.　Oni$_i$ udivilis' [našej$_j$ otpravke detej k svoim$_{*i,j}$ roditeljam].
　　　　　'They$_i$ were surprised at [our$_j$ sending the children to self's$_{*i,j}$ parents.'

Zlatić's proposal, couched within the framework of Head-Driven Phrase Structure Grammar, makes direct reference to argument structure: roughly, an anaphor must be bound within a category which contains a subject which is an argument of the head whose maximal projection contains the anaphor. The NP specifiers in (38a) and (39a) do not satisfy this condition, since they are not arguments. As a result, the binding domain of the reflexive is the entire clause, rather than the object NP. Explicit reference to the argument status of a category is not possible in the framework assumed here, but the distinction can easily be incorporated in the binding theory approach presented in Rappaport 1986b, in which the binding domain is delimited by the presence of a SUBJECT, which is a generalized superset of clause subjects. Zlatić's observation reduced to the fact that the notion SUBJECT includes Spec-of-N, but not Spec-of-Poss. This categorial distinction between N and Poss also accounts for another fact of binding: possessors cannot antecedent anaphors (Rozwadowska 1995a; Willim 1995). Thus, in Russian, for example, *kniga poèta o sebe* 'the poet's book about himself' can mean only that the poet wrote the book about himself (Spec-of-N of a picture noun), not that he

owns a book about himself written by someone else (Spec-of-Poss). The operational distinction for binding purposes between the specifier of a lexical category (N) and that of a functional category (Poss) might elicit the objection that binding at the clausal level is defined over the domain T, a functional category. While that is the traditional interpretation of T, Chomsky 2001 concludes that T is a 'substantive' (i.e., lexical) category, in contrast to the functional category C(omplementizer) (cf. the relations D:N = v:V = C:T).

3.2.2 Possessive Adjectives and Process Nominals

The possessive adjective can denote an Agent because, as shown in section 2, it has nominal reference. The following examples illustrate its ability to serve as the antecedent of a reflexive pronoun contained in the same NP:

(40) a. Oni soprotivljalis´ [našej$_i$ otpravke detej k svoim$_i$ roditeljam].
'They resisted [our$_i$ sending the children to our$_i$ parents].'
b. Ja byl svidetelem [ego$_i$ uniženija pered svoej$_i$ ženoj].
'I was a witness of [his$_i$ humiliation in front of his$_i$ wife].'

And the association of possessive adjectives with the genitive case is confirmed by examples like the following, which parallels those cited in section 2 for simple nominals:

(41) My ždem [*vaše* pojavlenie kak *arbitra*].
'We are awaiting [*your* appearance as a *judge$_{GEN}$*]'

Thus, the structure for *moe kollekcionirovanie redkix monet* 'my collection of rare coins' would simply be (32), an active structure in which the first person singular pronoun standing in the position of DP[3] instead of *professor* 'the professor'. As a result, the structure of (42a), then, would resemble (42b):

(42) a. moe kollekcionirovanie redkix monet
'my collection of rare coins'

b.

$$\text{DP}^1$$

(tree diagram)

D^1 NP^1

N$^{1'}$ DP^3

N^1 DP^2 *moj*
kollekcionirovanie   'my'
'collecting'   D^2 NP^2

redkix monet
'rare$_{GEN}$ coins$_{GEN}$'
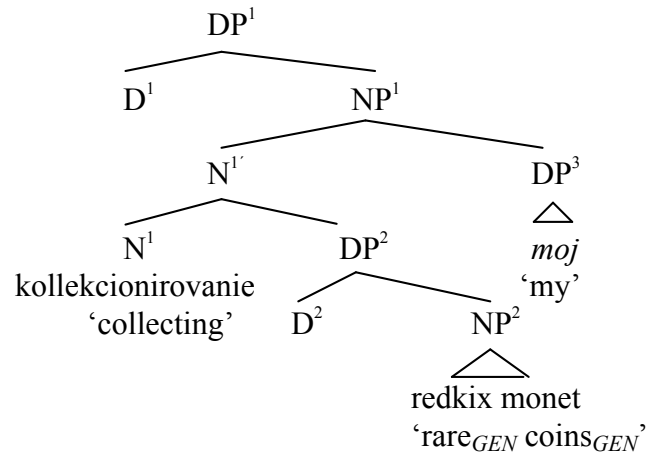
But what is the source of the Genitive in DP^3? We propose that, utilizing one of the mechanisms mentioned for licensing semantic case, a possessive adjective is inserted *with* the genitive, rather than being assigned it on agreement with D^1. D^1, as we have assumed, Agrees with, and assigns structural Genitive to, an inactive category it c-commands. The DP it assigns the genitive to is inactive by virtue having an unvalued case feature [case:]. If the possessive pronoun is inserted in DP^3 with the genitive case feature, it has no unvalued feature and is not active; therefore, D^1 cannot agree with it. Moreover, it does not impede D^1 from Agreeing with DP^2 (i.e., DP^3 does not invoke intervention effects), assigning structural genitive case to the latter.

It follows from the analysis presented so far that possessive adjectives and adnominal genitives are interchangeable: either could stand in the positions Spec-of-Poss, Spec-of-N, or Comp-of-N. But the reality is more complicated than that, and we offer the following remarks without pretensions of a definitive solution.

One essential characteristic of the possessive adjective (noted by Padučeva 1984) is that while it can have an object interpretation (as in 43a), that interpretation is ruled out in the presence of an adnominal genitive (43b):[31]

(43) a. Èto bylo už posle [moego priema na rabotu].
'That was already after [my being hired].'
Ja byl svidetelem [ego uniženii].

---

[31] Translating the examples of (43a) into English illustrates an important point made above. The English gerundive nominal clearly distinguishes active and passive voices in a way not paralleled by Russian: cf. *my having hired the workers* versus *the worker' having been hired by me*. And this is exploited in the translating the examples here to make the sense clear. However, the Russian constructions do not have the aspectual and voice markings of the English translations. This difference is formalized in our analysis by associating the gerundive nominal in English with more of a clausal structure (including a full verbal phrase and auxiliary verbs) than even the process nominal of Russian.

      'I was witness to [his being humiliated].'

   b. Èto bylo už posle [moego priema inostranca na rabotu].
     'That was already after [my hiring of a foreigner$_{GEN}$].'
     Ja byl svidetelem [ego uniženii inostranca].
     'I was witness to [his humiliation of a foreigner$_{GEN}$].'

Another, complementary observation by Padučeva (1984, 64) is that while a possessive adjective can have a subject interpretation (as in (40), (42a) or the ambiguous (44)), a pronominal adnominal genitive cannot (45):[32]

(44)   ee ispolnenie [ee = arija or pevica]
        'its performance' (*it* = an aria or a singer)

(45) a. Posle [ob″edinenija nas v brigadu] rabota pošla lučše.
      'After [unifying us into a brigade], work went better.'
   b. ispolnenie ee [ee = arija, not *pevica]
      'the performance of it' [*it* = an aria, but not *a singer]

On the analysis of possessive adjectives developed at length in Rappaport 2000a, pronouns are merged (inserted in syntactic structure) as a set of grammatical features, without lexical semantics or phonological shape, to be 'spelled out', or assigned phonological shape, after the syntax. It was proposed there that the morphological rule spelling out possessive adjectives (e.g., converting the feature complex <D, person: first, number: singular, case: genitive> as the phonemic sequence {*moj*} can only apply in the specifier position (Spec-of-Poss or Spec-of-N). This would account for both of the generalizations just mentioned, under the assumption that the object interpretation of the possessive adjective resulted from a passive-like change in diathesis within the NP.

    However, as we have noted above, this approach is inconsistent with the Bare Phrase Structure approach assumed here, whereby notions of X-bar theory have no status as primitives and a specifier, say, is no more than a second merge (with a complement being the first merge). On our assumptions, both *ispolnenie pevicy* 'the performance of the singer' and *ispolnenie arii* 'the performance of the aria' have the same phrase structure, differing only in the lexical representation of the head noun: [N], <x>, where x=D, Agent or x=D, Theme, respectively. We cannot appeal to a configurational account of why it is that if we replace the lexical adnominal genitive with a pronoun, the former takes the

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[32] Norman 1999 expresses reservations about the object interpretation of possessive adjectives outside the third person in Russian, but Padučeva 1984 cites numerous examples. Rozwadowska (1997, 34) and Puzynina (1969, 146) make the same observation about Polish that Norman does about Russian: possessive adjectives cannot have an object interpretation.

form of a possessive pronoun, and the latter – a personal pronoun (*ee ispolnenie* 'its performance' versus *ispolnenie ee* 'the performance of it'). Moreover, the configurational approach to the morphological distinction faces an empirical problem: adding an instrumental rules out the object interpretation of a possessive adjective, leaving the sentence ungrammatical (Padučeva 1984):

(46)   *Posle [našego ob″edinenija (*načal'stvom) v brigadu] rabota pošla lučše.
         'After [our unification (*by the supervisers$_{INST}$) into a brigade] work went better.'

The ungrammaticality of (46) is particularly unexpected on the passive analysis, and linking the possessive adjective with a specifier position provides no account for it. All three of these generalizations follow, however, from an account which takes individual thematic roles as primitives and utilizes a hierarchy of thematic roles argued by many to be linguistically significant.[33] For the case at hand, it is sufficient to note that an Agent is more prominent than a Theme (Agent > Theme). It could be stipulated that no other constituent of an NP can be higher on this *Thematic Hierarchy* than a possessive adjective. The subject interpretation of the possessive adjective in (43b) is thus forced when it 'competes' with an adnominal genitive because otherwise the latter would be higher on the Thematic Hierarchy. In (46), it is the oblique Agent in the instrumental which would be higher on the hierarchy. The genitive form of the personal pronoun is subject to an absolute constraint rather than a relative one: the corresponding feature complex of a pronoun cannot be spelled out as a personal pronoun if it denotes an Agent.[34]

It was noted above (section 2.2.1) that while a simple nominal phrase can have a double adnominal genitive (one structural case assigned by D and the other inherent case selected by N), a triple adnominal genitive is impossible, because there would be no third source of the genitive case. Interestingly, this limitation can be circumvented when

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[33] Cinque 1980 proposes this hierarchy to assign the proper thematic roles to arguments in the Italian nominal phrase. On Slavic, for example, see especially the studies on Polish (in contrast to English) by Rozwadowska 1989 and on Bulgarian by Dimitrova-Vulchanova 1998 and Dimitrova-Vulchanova and Giusti 1998.

[34] The reservations about the object interpretation of possessive adjectives cited in note (32) suggest that for some speakers the possessive adjective is subject to an absolute constraint as well, ruling out the thematic role of Theme.

possessive adjectives are utilized. Dimitrova-Vulchanova 1998 cites the following Bulgarian example:

(47)   mojat Rembrandov portret na Aristotel
        my-the Rembrandt's portrait of Aristotle
        'my portrait of Aristotle by Rembrandt'

This construction is consistent with the configurational analysis presented in section 2.2: the possessive pronoun (Possessor) is Spec-of-Poss, the possessive noun (Agent) is Spec-of-N, and the PP (Theme) is Comp-of-N. The last receives inherent case from its head, a result noun; the possessive adjectives are merged with valued case features associated with their morphology. Multiple possessive adjectives are not generally possible; for example, in Russian, *moj tvoj portret* is impossible, whether intended to mean 'the portrait you took owned by me' or 'the portrait depicting you owned by me'. We raise this issue of simple nominal phrases here, because it suggests an even broader role for the Thematic Hierarchy, whose fuller form is Possessor > Agent > Theme. Clearly Russian differs from Bulgarian in the application of this hierarchy. In Russian, each instance of a possessive adjective must be highest on the hierarchy, effectively limiting constructions to one such adjective. Bulgarian dispenses with such a definition in exclusive terms, relating the linear order of possessive adjectives to the hierarchy: no form to the LEFT of a possessive adjective PA can be lower on the hierarchy than is the PA itself.

4.   **Constituent Order and Configurational Structure**

Much of the 'free word order' for which the Slavic languages are known is preserved within the noun phrase. Nevertheless, there are limitations to reordering and there are usually clear distinctions between marked and unmarked constituent order. Deviations from unmarked order can involve both sentence-level discourse factors and noun phrase internal distinctions of emphasis and stylistic register. There is a general tendency for constituents undergoing Concord to precede the head (by the *Concord Principle*) and those not undergoing Concord (PrepPs and bare NPs assigned structural, inherent, or semantic case) to follow. While this generalization cuts across arguments and non-arguments, we will treat these two categories separately to address more fine-grained principles of linearity.

4.1 Arguments

The default order among arguments requires that complements follow the head, in accordance with the Concord Principle. The default order of complements with respect to each other in Russian is given in (48a), with 'X ⇨ Y' meaning that X precedes Y. The Spec-of-N is placed either before the head, or last among bare NPs, as determined by the Concord Principle. The categorial nature of the latter constaint is displayed in (48b), where angle brackets indicate alternative positions. Examples are given in (49):

(48) a. head ⇨ NP[genitive] ⇨ NP[instrumental/dative] ⇨ PrepP ⇨ clause (finite or nonfinite)
      b. <Spec-of-N> ⇨ head ⇨ NP complements ⇨ <Spec-of-N> ⇨ complements of other categories

(49) a. nedovol´stvo žizn´ju molodyx ljudej
          'the dissatisfaction of young people with life'
      b. vernost´ delu muža
          'the husband's loyalty to the cause'
      c. naša prodaža mašiny turistu
          'our sale of a car to the tourist'
      d. namerenie dissidenta ne vozvraščat´sja
          'the dissident's intention not to return'

While flexibility is possible, there seems to be one inviolate limitation: if there are two adnominal genitives, whatever their function, they must occur in the sequence given in (50); examples follow:[35]

(50) complement ⇨ adjunct ⇨ specifier
      a. stado olenej srednej veličiny
          'a herd of deer of average size'
      b. kaftan žestkogo šelka Teti Maši
          'Aunt Mary's kaftan of rough silk'

Contemporary Polish exhibits a regular phenomenon, especially characteristic of colloquial speech, in which an adnominal genitive can be fronted; as a result, the stricture against two adnominal genitives with process nouns ceases to apply (Topolińska 1984, 366):

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[35] Zlatić 1997 makes this observation in relation to Serbian and attributes it to an adjacency requirement of a type known in English. However, given the greater freedom in constituent order in Slavic, this observation begs the question of why there is such an adjacency requirement only in this case.

(51) a. to wieczne Romka kiwanie głowy
'this constant nodding of the head of Romek's'

b. I wtedy zaczęło się [to Jana codzienne krytykowanie Hanki i Basi].
'And then began [this daily criticism of Hanka and Basia of Jan's]'

The conditions on this pre-head position are identical to those on the formation of possessive adjectives, requiring that the noun be single, definite, and consisting of a single word. Migdalski 2000 has proposed on this basis that these conditions suggest that a structural movement is involved, in particular, head-raising from N to D (cf. arguments by Babyonyshev 1998 for analogous raising underlying the derivation of possessive adjectives, mentioned above).

Bulgarian exhibits a roughly parallel phenomenon. In the absence of a genitive case, this language utilizes PrepPs introduced by *na*; this PrepP can be fronted. The phenomenon is discussed in formal terms by Dimitrova-Vulchanova 1998, who cites the following examples of what she calls *na-fronting* (p. 163):

(52) a. knigata na Ivan
book-the of Ivan

b. na Ivan knigata (mu)[36]
book-the of Ivan
'Ivan's book'

When fronted, the *na* PrepP is moved to the initial margin of the nominal phrase, preceding even the quantifiers:

(53) na Ivan vsički tezi novi knigi
'all of these new books of Ivan's'

4.2 Non-arguments

Among non-arguments, we distinguish attributives and determiners.

4.2.1 Attributives

Attributives can stand before or after the head, in accordance with the Concord Principle. When before the head, the neutral position in Russian is after a possessive adjective.

(54) possessive adjective ⇨ attributive ⇨ head

a. moja novaja teorija (simple nominal)
'my new theory'

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[36] Dimitrova-Vulchanova 1998 notes that *na*-fronting is optionally accompanied by clitic doubling.

b. tvoe podrobnoe rassledovanie obstojatel'stv dela (process nominal)
'your detailed investigation of the circumstances of the matter'

Dimitrova-Vulchanova 1998 shows that in Bulgarian those adjectives traditionally called descriptive adjectives precede a possessive adjective, while those traditionally called relational adjectives follow it (p. 164):

(55) Bulgarian: descriptive adjectives ⇨ possessive adjective ⇨ relational adjective ⇨ head
    a. novata Ivanova kniga
       *Ivanovata nova kniga
       'Ivan's new book'
    b. Ivanovata dârvena kâšta
       *dârvenata Ivanova kâšta
       'Ivan's wooden house'

There are undoubtedly semanticly-defined regularities which establish the default work-order among adjectives in Slavic. Polish is alone among the Slavic languages in exhibiting a regular phenomenon of post-head adjectives. The conditions under which this is observed are not easily articulated, but is traditionally said to reflect the distinction between accidental and inherent properties, described by *qualifying* and *classificatory* adjectives, respectively:

(56) a. biały niedźwiedź ~ niedźwiedź biały
       'white bear' versus 'polar bear'
    b. średnia szkoła ~ szkoła średnia
       'average school' versus 'middle school' (i.e., high school, between
       elementary school and higher education)

These phrases often correspond to compound nouns in English (note the application in the English correspondences above of the Nuclear Stress Rule in the first member of each pair, and Compound Stress Rule in the second), suggesting that phrases with post-nominal adjectives in Polish are lexicalized collocations, rather than syntactic constructs. There is some controversy about the properties of these classificatory adjectives: Rutkowski and Progovac 2005 and Rutkowski 2007 claim that Polish permits at most one post-posed adjective, while Cetnarowska et al. 2010 maintain the contrary.

Non-agreeing attributives typically follow the head, per the Concord principle (57a). They appear to be freely ordered in relation to each other (57b,c). A limited number of such attributives stand freely before the head as well (57d):

(57) a. vysokaja sobol'ja šapka s zolotymi kist'jami
          'high sabel (fur) hat with golden tassels'

      b. ispolnenie Šopena ↔ vami
          'a performance of Chopin by you'

      c. podarok dlja tebja ↔ ot Vani
          'a give for you from Vanya'

      d. poxož na srednej veličiny medvedja
          'similar to a bear of average size'

4.2.2 Determiners

As in section 2.1, we distinguish four categories of determiners: demonstratives, agreeing quantitative expressions (AQE), quantifiers, and the emphasis marker *sam*.

As a default, AQEs precede demonstratives, which precede possessive adjectives. We illustrate:[37]

(58) AQE ⇨ demonstrative ⇨ possessive adjective

      a. vse èti moi druz'ja
          'all of these friends of mine'

      b. odin moj drug
          'a friend of mine'

      c. takoe tvoe rešenie
          'this kind of decision of yours'

The unique and mysterious properties of Slavic quantifiers (Qs), which include numerals, are well documented (see note 1). They appear in multiple positions in the Slavic nominal phrase, but there are differences in semantic scope and case marking, so that it seems a matter of alternative positions of merger rather than word order variation. The possibilities are summarized in the template in (59), with examples in (60):

(59)   AQE ⇨ <Q> ⇨ demonstrative ⇨ <Q> ⇨ possessive adjective ⇨
          <Q> ⇨ adjective ⇨ head

(60) a. vse pjat´ ètix moix interesnyx knig
          'all five of these interesting books of mine'
      b. vse èti pjat´ moix interesnyx knig
          'all of these five interesting books of mine'
      c. vse èti moi pjat´ interesnyx knig
          'all of these five interesting books of mine'

---

[37]Of necessity, we simplify. Demonstratives do not co-occur with all quantifiers. For detailed discussion of the analogous facts of Serbo-Croatian and Bulgarian (not identical to Russian), see Zlatić 1997 and Dimitrova-Vulchanova 1998, respectively.

For example, note that modifiers to the left of the Q are in the nominative case, while those to the right are in the genitive (cf. the alternative case forms of the demonstrative *èti* 'these' and the possessive pronoun *moi* 'my'.[38] There is a corresponding difference in interpretation. For example, (60c) entails that I have exactly five books, while (60a,b) do not.

Typically the emphatic pronoun *sam* '(him)self' can precede or follow a nominal head. However, it must follow a pronoun. Progovac 1998 constructs an argument in favor of a Determiner Phrase in Serbo-Croatian based on this fact. She contrasts the position of *sam* before the proper noun in (61a) with its position after a pronoun in (61b):

(61) a. I   samu   Mariju   to   nervira.
       and even   Mary   that irritates
       'That irritates even Mary.'

    b. I   nju   samu   *t* to   nervira.
       and   her   even   *t* that irritates
       'That irritates even her.'

She proposes that the pronoun-*sam* order follows from raising the pronoun from an underlying position in N to the higher D position, crossing any adjectives which are adjuncts in the NP. This is a natural approach to understanding the inverted position of the adjective in combination with indefinite pronouns, as in Russian *čto-to strašnoe* 'something terrible', *čto-nibud' ravnocennoe* 'something equal in value'.[39] Detailed discussion of the role functional categories perform in determining word order in the Bulgarian NP are found in Dimitrova-Vulchanova 1998 and Dimitrova-Vulchanova and Giusti 1998.

4.2.3 Summary of NP-internal Constituent Order

The above remarks are summarized in the following linearization template for the Russian nominal phrase:

(62)   AQE ⇨ <Q> ⇨ demonstrative ⇨ <Q> ⇨ <Spec-of-N> ⇨ <Q> ⇨ adjective
        ⇨ head ⇨ NP[genitive] ⇨ NP[instrumental/dative] ⇨ <Spec-of-N> ⇨ PrepP
        ⇨ clause (finite or nonfinite)

---

[38] In some cases the scope of genitive marking extends to the left of the head noun, especially, apparently, in Serbo-Croatian.

[39] Russian constructions such as *on sam prišel* 'he himself came' can undergo *Quantifier Float* to give *on prišel sam*. The conditions on this phenomenon deserve further investigation.

Note that this template is defined in terms of properties of various types; sometimes categorial, sometimes configurational, sometimes semantic. How should we assume that they fit into the configurational structure of the nominal phrase?

We assume that attributives (constituting answers to the interrogative *kakoj* 'what kind of') occupy the configurational position Adjunct-of-N.[40] This assumption is consistent with the word order facts illustrated in (54a,b) (assuming a right-branching structure), which place attributives after Spec-of-N and Spec-of-Poss. The positional variability of Quantifiers (interrogative: *skol'ko* 'how many') is most naturally attributed to variability in selection. That is, the head Q can select a DP, PossP, or NP. This is correlated with the scopal and case marking distinctions noted in 4.2.3. Because in the unmarked case a quantifier agrees with the head noun, we treat it as an Adjunct-of-Q rather than as Q itself.[41] Similarly, the fact that demonstratives (interrogative: *kotoryj* 'which one') undergo Concord places them in Adjunct-of-D rather than D itself.

The following tree structure displays the relative hierarchies of DP, PossP and NP that we have assumed so far, with one of the possible positions of QP shown:

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[40]We differ, thus, from Cinque 1994 who treats adjectives as specifiers of an unspecified functional category between D and N. The analysis to follow could easily be adapted to this analysis, but we remain unconvinced of its validity.

[41] The structural exception is, of course, the statistically most frequent case: in the nominative and accusative cases, quantifiers other than the numerals 1-4 appear to govern the head noun rather than agree with it. The fact that in some contexts the quantifier appears to be the head of its nominal phrase and in other contexts the noun appears to be has represented a well-known and much-studied paradox in the syntax of most Slavic languages. See the references in footnote **Error! Bookmark not defined.**1.

(63)

```
              DP
          ┌────┴──────┐
        AdjP          D′
        kotoryj    ┌──┴────┐
     'which one'   D       QP
                           │
                           Q′
                        ┌──┴────┐
                      AdjP      Q′
                      skol′ko ┌─┴─────┐
                   'how many' Q      PossP
                                  ┌───┴────┐
                                 DP       Poss′
                                 čej    ┌──┴──────┐
                              'whose'  Poss       NP
                                                  │
                                                  N′
                                              ┌───┴───┐
                                            AdjP      N′
                                            kakoj    ◁
                                      'what kind of'  kaftan
                                                     'kaftan'
```
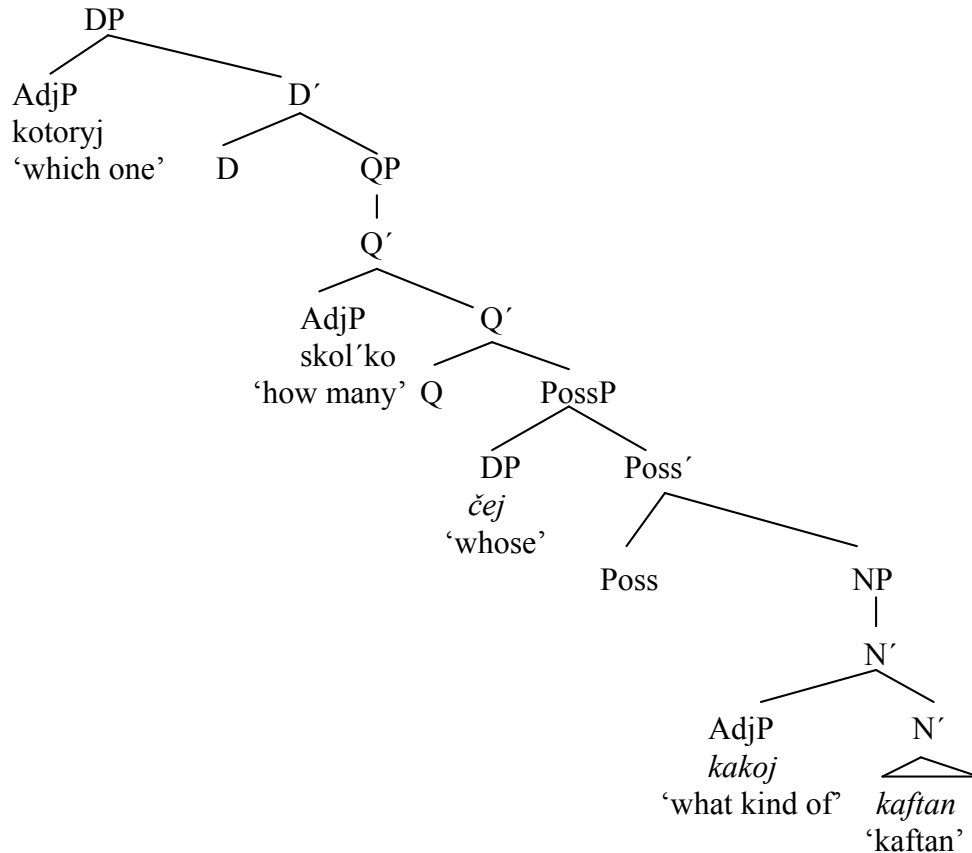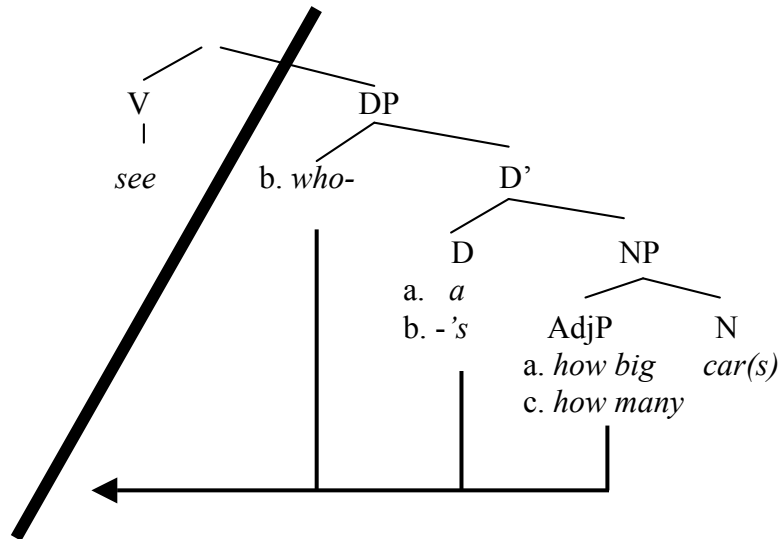
5. Extraction

The Slavic languages have been an important point of comparison in defining a parameter of cross-linguistic variation which remains a conundrum to this day. Ross 1967/1986 discovered that there are contexts in which the extraction of a relative or interrogative pronoun from a nominal phrase is not possible, and *pied-piping* (the extraction of a larger category *containing* that pronoun) is obligatory. In particular, targeting for movement a left branch or a constituent contained in a left branch in English requires that the category containing the maximal left branch be pied-piped along with the targeted constituent. Consider, for example, the constructions in (64), with configurational structures approximated by (65):

(64) a. *How big did you see [a *t* car] ?
        Cf. [How big a car] did you see *t*?[42]

b. *Whose did you see [*t* cars] ?
        Cf. [Whose cars] did you see *t*?

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[42] It is an English-specific fact that there is a further movement in this last construction; cf. the expected *[a how big car] did you see *t*? Note also the impossibility of this construction in the plural: *How big cars did you see *t*?

    c.   *How many did you see [*t* cars]?
        Cf. [How many cars] did you see *t*?

(65)   VP

Tree diagram (65): VP branches into V (*see*) and DP. DP branches into *b. who-* and D'. D' branches into D (*a. a*, *b. -'s*) and NP. NP branches into AdjP (*a. how big*, *c. how many*) and N (*car(s)*).

Ross attributed this requirement to a constraint on extraction he termed the *Left Branch Condition* (LBC), which does not apply in many languages, among them Slavic. Cf. the corresponding Polish constructions:[43]

(66) a. ✓{Jakie /Jak duże}   widziałeś [*t* auto] ?
            {what kind/how big}   you.saw   [*t* car]
            '{What kind of /how big a} car did you see?'

     b. ✓Czyje   widziałeś   [*t* auto] ?
           whose   you.saw   [*t* car]
           'Whose car did you see?'

     c. ✓Ile   widziałeś   [*t* aut] ?
           how.many   you.saw   [*t* car]
           'How many cars did you see?'

Corver 1992 first proposed that such constrasts follow from a difference in configurational structure: English has a DP, while Polish (for example) does not, a position later adopted and extended by Bošković 2005; 2008 and Zlatić 1997. But let us look at the facts more closely.

5.1 Extraction from Complement Position

    Complements generally cannot be extracted from a nominal phrase. Some Polish examples with Prepositional Phrases (PrepPs) are given in (67):

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[43] Rappaport 2000b is devoted to this question and to the *Parametrized Determiner Phrase Hypothesis* proposed to account for it. The following remarks on extraction are taken from that paper, which is based on Polish data.

(67) a. *Do   kogo   budzi   ksiądz[miłość *t*] w   katechetach? *Reply:* Do rodziców.
       for   whom   arouse priest [love   *t*] in catechumens.   For parents
       ('For whom does the priest arouse [love *t*] in his catechumens?'
       Reply: 'For (their) parents.')

   b. *O   co   przekazałeś   dziekanowi [prośbe *t*]? *Reply:* O pomoc.
      for what you.conveyed to.dean   [request *t*]   For help
      ('For what did you convey to the dean [a request *t*]?' *Reply:* 'For help.')

Bare-NP complements of N abound, since nouns readily select complements inherently marked in a particular case. Such complements cannot be extracted, whether in the Instrumental, Dative, or Genitive case:[44]

(68) a. *Jakim   przedmiotem profesor   budzi w   was [zainteresowanie *t*]?
         which$_{INST}$ subject$_{INST}$ professor arouse in you [interest   *t*]
         ('In what subject is the professor arousing in you [interest *t*]?')

   b. *Komu   potępiliście   [pomoc   *t*]?
      whom$_{DAT}$ you.condemned   [assistance *t*]
      ('To whom did you condemn [assistance *t*]?')

   c. *Czego   atakuje   ten   naukowiec [teorię   *t*]?
      what$_{GEN}$ attacks   this   scientist [theory *t*]
      ('Of what is this scientist attacking [a theory *t*]?')
      *Czego   sprzedaje kupiec   [worek *t*]?
      what$_{GEN}$ sells   merchant [bag   *t*]
      ('Of what is the merchant selling [a bag *t*]?')
      *Których turystów   potępiliście   [podsłuch   *t*]?
      which$_{GEN}$ tourists$_{GEN}$ you.condemned   [surveillance *t*]
      ('Of which tourists did you condemn [the surveillance *t*]?')

There are examples in which the extraction of Comp-of-N is apparently permitted in Polish:

(69)   Na który kraj   planujecie [napad *t*]?
        on which country you.plan   [attack *t*]
        'On which country are you planning [an attack *t*]?'

It has been suggested for English that there is no proper extraction from NPs at all (cf. the 'NP Constraint', discussed in Horn 1974 and Bach and Horn 1976), and that apparent cases (from so-called 'quasi-NPs') entail a restructuring of an NP so that a PrepP moves from being an NP constituent to a VP constituent, from which position it can be fronted. While the precise conditions of the restructuring mechanism remain obscure, it is

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[44]Dimitrova-Vulchanova 1998, 181) cites Bulgarian examples analogous to (68c) as grammatical; e.g.,:
   (i)   Na koj grad opisa uništožanvaneto?
         'Of what city did you describe the destruction?'
We have not investigated how general this extraction in Bulgarian is; cf. the remarks which follow in the text.

conditional (among other things) upon the choice of the verb; And in fact a change of matrix verb in Polish renders the grammatical extraction ungrammatical:

(70)　　　*Na　　ktόry　　kraj　　　omawiamy　[napad　*t*]
　　　　　on　　which　　country　we.discuss　[attack　*t*]
　　　　　('On what country are we discussing [an attack *t*]?')

So we will assume that the default case is that the extraction of Comp-of-N is not possible, with apparent exceptions resulting from a restructuring rule the precise conditions of whose application deserve further study.

　　　For consistency, we have in the above examples looked at extraction from a direct object NP, finding it, in the general case, blocked. But there is a context in which extraction from NP is so normal that textual examples abound: the complement of a predicate nominal:

(71) a.　(Jest)　　　pokusa,　　　by sparafrazować　(Groucho)　　Marksa:
　　　　　(there is)　temptation　to paraphrase　　　(Groucho)　　Marx
　　　　　Zlikwiduję　　każdy　　klub,　ktόrego　　jestem　[członkiem　*t*].
　　　　　I.will.disband　any　　　club　which$_{GEN}$　I.am　　　[member$_{Inst}$　*t*]
　　　　　'There is a temptation to paraphrase (Groucho) Marx, I will disband any club
　　　　　of which I am [a member *t*]'

　　b.　Punktem　　odniesenia ...　zawsze　była　　Europa,
　　　　　point　　　of.reference　always　was　　　Europe
　　　　　ktόrej　　Polacy　czuli　się　　[obrόńcami　　　　*t*].
　　　　　which$_{Gen}$　Poles　felt　　REFL　[defenders$_{INST}$　*t*]
　　　　　'The reference point was always Europe, which Poles felt (themselves) to be
　　　　　[defenders of *t*].'

It is a simple matter to construct minimal pairs such as the following, in which extraction is possible from a predicate nominal, but not from a direct object:

(72) a.　Zlikwidowano　klub,　ktorego　　jestem　[honorowym　członkiem　*t*].
　　　　　(they)disbanded　club　which$_{GEN}$　I.am　　[honorary　　　member　　*t*]
　　　　　'They closed the club, of which I am [an honorary member *t*].'

　　b.　*Zlikwidowano　klub,　ktorego　　wczoraj　poznałem
　　　　　(they)disbanded　club　　which$_{GEN}$　yesterday　I.met
　　　　　[honorary　　　member　*t*]
　　　　　[honorowego　członka　*t*].
　　　　　('They closed the club of which I just yesterday met [an honorary member *t*].')

On grounds completely independent of the present discussion, Longobardi 1994 proposed that a nominal expression can function as an argument only if it is introduced by a category D. More specifically, the category D is associated with a feature [R] (for

'referential'), which imbues a nominal expression with the referential properties required to function as an argument. Non-argument positions (e.g., vocatives, exclamatory positions, and predicates) may or may not be DPs, depending upon their referential properties (i.e., the appropriateness of the [R] feature). So extraction in cases such as (71) and (72a) is made possible by the independently-motivated possibility that there is no DP in a predicate nominal, as opposed to an obligatory DP associated with a nominal expression in argument position, from which analogous extraction is not possible (72b). This striking contrast in extraction from argument and predicate positions constitutes a powerful argument for the presence of DPs in any language with such contrasts.

5.2 Extraction from Attributive Position

While agreeing attributives can be extracted in Polish (66a), non-agreeing attributives cannot be. The latter point is illustrated in (73) for Prepositional Phrases (PrepPs):

(73) a. *Z   czym postrzelili przed domem   [chłopca *t*]? *Reply:* Ze   skakanką.
          with what shot   in.front.of house [boy   *t*]   With jump.rope
          ('With what did they shoot [a boy *t*] in front of the house?'
          Reply: 'With a jump rope.')

      b. *O   jakich   włosach poznałeś [dziewczynę *t*] na imprezie?
          with what.kind.of hair   you.met   [girl   *t*] at party
          Reply: -O   złotych   włosach.
                   with golden   hair
          ('With what kind of hair did you meet [a girl *t*]? *Reply*: 'With golden hair.')

And neither can bare-NP attributives be extracted:

(74) a. *Jakiego wyznania   podziwiasz [ludzi   *t*] najbardziej?
          what$_{GEN}$ religion$_{GEN}$ you.admire [people *t*] most
          Reply: Buddyjskiego.
                    Buddhist$_{GEN}$
          ('Of what religion do you admire [people *t*] the most?'
          Reply: 'Of the Buddhist (religion).')

      b. *Kiedy on opisał   [demonstrację *t*] dla   gazety.
          when   he described [demonstration *t*] for   newspaper
          Reply: 6-go   czerwca.
                   6th$_{GEN}$ of.June
          ('When did he describe [a demonstration *t*] for the newspaper?'
          Answer: 'On the 6th of June.')

As in the case of complements, there are apparent counterexamples, with extractions from Adjunct-of-N. For example, Willim 2000 cites the following grammatical constructions:

(75) a. Od   kogo   czytasz   [list   *t*]?
        from whom   you.read   [letter *t*]
        'From whom are you reading [a letter *t*]?'

   b. Z   kim   nagrywasz   [rozmowy   *t*]?
      with whom you.record   [conversations *t*]
      'With whom are you recording [a conversation *t*]?'

As above, we assume that extraction from 'quasi-NPs', like Willim's examples, result from a restructuring rule Clearly, identifying quasi-NPs is not an easy task; in the case of attributive extraction, Cattel 1979 contrasts (76a) with (76b):

(76) a. ✓the car, in which you like [the gears *t*] ...

   b. *the car, in which you like [the girl *t*] ...
      *the car, on which you like [the wheels *t*] ...

Nevertheless, evidence suggests that extraction constitutes the exception rather than the default. As above, extraction is conditional (among other things) upon the choice of the verb; contrast the Polish examples in (75), for example, with (77):

(77) a. *Od   kogo   zniszczyłeś   [list   *t*]?
        from   whom   you.destroyed [letter *t*]
        ('From whom did you destroy [a letter *t*]?')

   b. *Z   kim   skasowałeś na taśmie [rozmowę   *t*]?
      with whom you.erased on tape   [conversation   *t*]
      ('With whom did you erase on tape [a conversation *t*]?')

Crucially, when these same NPs are isolated from the same verb found in (75), extraction is not possible:

(78) a. *Od   kogo   czytasz   [koniec listu   *t*]?
        from   whom   you.read   [end   of.letter *t*]
        ('From whom are you reading [the end of the letter *t*]?')

   b. *Z   kim   nagrywasz   [każde słowo rozmowy   *t*]?
      with whom   you.record   [every word   of.conversation *t*]
      ('With whom are you recording [the beginning of a conversation *t*]?')

Thus, we assume that in the general case PrepP and bare-NP Adjuncts-of-N cannot be extracted in Polish. Apparent exceptions have undergone a restructuring rule at either the syntactic or lexical level, dependent on the choice of lexical verb and a proximate structural position to that verb, such that no extraction from NP is in fact involved. In contrast, agreeing Adjuncts-of-N can be extracted.

5.3 The Extraction of Specifiers

When a Spec-of-Poss or Spec-of-N is questioned, the agreeing interrogative word *czyj* is used for an animate antecedent, and extraction occurs freely, in violation of the LBC; cf. (66b) and the following:

(79) Czyją ukradłeś książkę? *Reply*: Sąsiada.   Moją.
     whose you.stole book   neighbor$_{GEN}$ mine
     'Whose book did you steal?' *Reply*: 'The neighbor's.' or 'Mine.'

The fact that *czyj* 'whose' can be extracted from its PossP is not correlated with the fact that this pronoun agrees with its head. There are circumstances under which *czyj* is not the appropriate *wh* pronoun for questioning a Possessor, and a non-agreeing genitive DP containing an interrogative pronoun can be extracted from Spec-of-Poss as easily as agreeing *czyj*:

(80) a. Którego   sąsiada   znasz   [siostrę   *t*]?
         which$_{GEN}$ neighbor$_{GEN}$ you.know   [sister$_{ACC}$ *t*]
         'Which neighbor do you know [the sister of *t*]?'

     b. Czego/ Którego   kraju   zwiedziłeś [stolicę *t*]?
         what$_{GEN}$/what$_{GEN}$ country$_{GEN}$ you.visited [capital *t*]

         Reply: Związku radzieckiego.
                  Soviet Union$_{GEN}$
         'What/What country did you visit [the capital of *t*]?'
         Reply: 'The Soviet Union.'

Also, in relativizing Spec-of-Poss, Polish uses the Genitive case form of the nominal relative pronoun *który* 'which', a form which does not agree with the 'possessed' object. While judgements are less consistent in this case (possibly because of the preference for pied-piping in such constructions), many speakers accept constructions such as the following:

(81)   To   jest sąsiad,   którego   znam   [siostrę *t*].
        that is   neighbor whom$_{GEN}$ I.know   [sister *t*]
        'That is the neighbor whose sister I know.'

These facts show that, in contrast to adnominal Genitives functioning as Comp-of-N (68c), specifiers can be extracted from nominal phrases, whether the category in question agrees or not, and whether a lexical noun in that function would precede its head or not. The fact that both these specifiers and Comp-of-N can be expressed in the same way, by an adnominal Genitive, make it possible to construct telling minimal pairs. For example, the nominal phrase *krytyka poety* 'the criticism of the poet' is a clear case of ambiguity

between a 'subject genitive' and 'object genitive'; it could mean either criticism by the poet of something or someone or criticism by someone else of the poet. The ambiguous declarative sentence (82) containing this nominal phrase becomes unambiguous when the Possessor is extracted, admitting only a subject interpretation regardless of whether the agreeing interrogative pronoun (82a) or non-agreeing relative pronoun (82b) is employed:

(82) Czytam krytykę poety.
      'I am reading criticism of the poet.'

   a. Czyją czytasz krytykę?
       'Whose criticism are you reading?'

   b. To jest poeta, którego czytam krytykę.
       'This is a poet, whose criticism you are reading.'

It is not clear how to account for this contrast under Minimalist assumptions outlined earlier, according to which the first instance of Merge is necessarily to the complement position. It would follow that there is no configurational difference associated with the two interpretations of *krytyka poety* 'the criticism of the poet'. Perhaps the difference is associated with a PRO Spec-of-N in the object interpretation, which blocks extraction by invoking a violation of the shortest link principle, but we leave the question open here.

It has been observed (e.g., by Bailyn 1995 for Russian) that adnominal genitives cannot be extracted from their matrix NP; a Polish example would be

(83)   *Kogo   ukradłeś   [książkę *t*]?
         whom$_{GEN}$ you.stole   [book$_{ACC}$ *t*]
         ('Of whom did you steal [a book *t*]?')

But following Rappaport 2000a, we take possessive pronouns to be syntactically identical to genitive case nominals, undergoing a post-syntactic morphological rule of spell-out. Thus, at the level of syntax, (83) is equivalent to (79). The former is ungrammatical for morphological reasons, not syntactic ones: the pronoun *kto* 'who' has failed to undergo the required morphological rule converting it to *czyj* 'whose'. The extraction of Spec-of-Poss per se, then, is grammatical.

While the extraction of a specifier is possible in (79), it is blocked in more complex nominal structures, in which the matrix DP of the extracted Possessor is a constituent of another nominal phrase, rather than being governed by a matrix V. This is true whether the larger DP is contained in Comp-of-N (84) or a specifier (85):

(84) *Czyjego przeczytałeś [ocenę [*t* prezydenta]].
whose$_{GEN}$ you.read [evaluation$_{ACC}$ [*t* president$_{GEN}$]]
('Whose president did you read an evaluation of?')

(85) *Czyjego przeczytałeś [książkę [*t* sąsiada]?
whose$_{GEN}$ you.read [book$_{ACC}$ [*t* neighbor$_{GEN}$]]
('Whose neighbor's book did you read?')

To summarize, a specifier in the nominal phrase of Polish (whether Spec-of-Poss or Spec-of-N) can be extracted, regardless of its linear order or whether it morphologically agrees with its head N or not. In contrast, a constituent properly contained in a specifier cannot be extracted.

5.4 Extraction of Quantifiers

Recall from section 4.2 that the category Q(uantifer) can stand before or after a demonstrative pronoun. As long as QP is above DP, extraction from its specifier is permitted:

(86) Ile kupiłeś [$_Q$ *t* [$_D$ tych [$_N$ książek]]]?
how.many you.bought [$_Q$ *t* [$_D$ these$_{GEN}$ [$_N$ books$_{GEN}$]]]
'How many of these books did you buy?'

If the QP is below the DP, then extraction of the Q is blocked.

(87) *Ile kupiłeś [$_D$ te [$_Q$ *t* [$_N$ książek]]]?
how.many you.bought [$_D$ these$_{Acc}$ [$_Q$ *t* [$_N$ books$_{GEN}$]]]
('How many of these books did you buy?')

That QP in (87) is contained in the DP, inverted from (86), is shown by the contrast in the case of the demonstrative: in the former it is in the nominative case because, being higher than the source of the genitive Q, it is outside the scope of case assignment.

Significantly, while extraction from Comp-of-N is ungrammatical (68c), extraction from Comp-of-Q is perfectly acceptable and frequently encountered; textual examples follow:

(88) a. Czego odczuwacie [brak *t*] w pracy lektorskiej?
what$_{Gen}$ you.feel [lack *t*] in work pedagogical
'What do you feel [a lack of *t*] in pedagogical work?'

   b. Takie mieszkania byłyby i lepsze i tańsze niż te,
such apartments would.be both better and cheaper than those
których polskie budownictwo buduje [za mało *t*]
which$_{Gen}$ Polish construction.industry builds [too few *t*]
'Such apartments would be both better and less expensive than those of which the Polish construction industry builds [too few *t*].'

Such constructions are analogous to extraction from predicate nominals (e.g., (71) and (72a)): QPs, like the NPs of the latter, are not shielded from the matrix V by a DP, the intervention of which blocks extraction.

5.5 Summary of Extraction

The resulting pattern of acceptable and unacceptable extractions surveyed above presents a rather baroque picture. The default cases (quasi-NPs aside) can be summarized as follows ('✓' means that extraction is possible, '*' means that it is not):

(89) a. -Comp-of-N
    *In direct object position
    ✓In predicate nominal position
 b. -Adjunct of N:
    ✓Expresses φ-feature concord with N
    *Does not express concord
 c. -✓Spec-of-N and Spec-of-Poss
    *Within Spec-of-Poss or Spec-of-N:
 d. -✓Comp-of-Q
 e. -Q
    ✓above DP:
    *below DP:

This pattern suggests that the DP performs a filtering function on extraction. The presence of this category blocks extraction of Comp-of-N from a direct object, while its absence permits the analogous extraction from a predicate nominal (89a). Moreover, if the presence of an intermediate DP is necessary to block extraction, it would follow directly that a DP can be extracted as a whole from Comp-of-Q (89d) and Q can be extracted when not itself contained in a DP (89e). It would remain to account for why specifiers are extractable (89c), and why expressing φ feature Concord is critical for the extraction of attributives (89b). Rappaport 2000b develops theories within Minimalist and pre-Minimalist generative frameworks , but a completely satisfying account remains elusive.

6. Conclusion

To summarize, we have proposed a formal analysis of NPs which accounts for a considerable array of facts. This analysis has benefitted from the assumption that what is traditionally called a Noun Phrase is in fact selected by a functional category of Determiner. We have distinguished the internal geometry of simple and process nominal

phrases and elaborated a mechanism of licensing NP-internal case assignment, distinguishing inherent case licensed by selection (and accompanied by the assignment of a thematic role to the corresponding argument) and structural case (divorced from thematic role assignment or even grammatical function). At several points descriptive generalizations have been proffered which remain without satisfactory explanatory. More generally, while recent work in Bare Phrase Structure treats the X-bar notions of specifier as a derivative notion, such a consequence has complicated our analysis at several points. It remains open whether approaches to the relevant questions based on thematic roles are justified and adequate to compensate for the impoverished phrase structure favored by the Minimalist program.

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