

The Geometry of the Polish Nominal Phrase: Problems, Progress, and Prospects

Gilbert C. Rappaport
University of Texas at Austin

1. Introduction

The extent to which the clause and the nominal phrase parallel each other in structure and interpretation has been a central issue on the agenda of generative grammar at least since Lees (1963) (based on a 1959 M.I.T dissertation).^{*} The last ten years have seen a burst of particularly intense research on the question, driven to a considerable extent by the comparative approach of Giorgi and Longobardi (1991) and the contemporaneous proliferation in grammatical theory of functional categories. The data of Polish and other Slavic languages have not been neglected, and much insightful work in this area has been done in both Europe and America.

The derivational excesses of Generative Semantics were rejected in favor of a lexical approach to derived nominals by Chomsky (1970), which introduced a generalized phrase structure theory (X-bar theory) that made it possible to express generalizations in the absence of a direct transformational relation. But the Minimalist program dispenses with X-bar theory, as well as with the covert movement and Spec-Head agreement which had been taken to implement case assignment. Recent work in this direction has proposed a newly articulated and spare theory of formal features and case assignment, divorced from movement. Is the resulting theory rich enough to formalize the structural parallels between clause and nominal phrase, as well as other, more arcane properties of the latter? What inventory of functional categories is appropriate to the nominal phrase? Where is the line between lexical and syntactic derivation of deverbal nouns, and between structural and inherent case marking? What is the syntactic role, if any, of the semantic roles borne by arguments of the noun? This paper is part of a project which explores these and related questions in order to define the division of labor among modules of the grammar in the current recension of Minimalism.

Our thesis can be outlined as follows. In accordance with the classic distinction drawn by Grimshaw (1990) and utilized in much subsequent work, nouns can be partitioned into two categories, which we will call *process nouns* and *referential nouns*. An adnominal genitive associated with a process noun paraphrasable by a possessive adjective (*plywanie Janka* ‘Johnny’s swimming’ ~ *jego plywanie* ‘his swimming’) is an argument of that noun. In contrast, a similarly paraphrasable adnominal genitive associated with a referential noun (*ksiazka Janka* ‘Johnny’s book’ ~ *jego ksiazka* ‘his book’) is not an argument of that noun, but rather of a functional category Poss. Both types of noun are associated with a D category which has the capacity to assign structural genitive case to another nominal phrase, but no thematic role. Thus, D assigns structural case indifferently to constituents of NP or PossP. Like passives, process nouns in Polish make the agent thematic role *implicit* (expressed only optionally and obliquely), rather than expressing it as a proper syntactic argument; we will formalize this link by associating this shared property with the morphology they share, represented here as ‘Prt’. These facts can be accounted for by assuming that if a transitive clause has the functional category structure displayed in (1a)

^{*} I am grateful to Maaika Schoorlemmer and Sam Gutmann for detailed and helpful comments on an earlier version of this paper.

and a passive clause that in (1b), then referential nouns have the structure displayed in (1c) and process nouns – that in (1d):

- (1) a. T – v – V
 b. T – be_V – Prt – V
 c. D – Poss – N
 d. D – $\{\emptyset\}'_N$ – Prt – V

The properties of the relevant functional categories can be summarized as follows:

(2)

	Assign structural case?	Assign a theta role?
T	✓	*
D	✓	*
v	✓	✓
Poss	*	✓
Prt	*	*

Before proceeding to our own analysis, preliminary assumptions in two areas must be reviewed. Section 2 is devoted to the basic mechanism of case assignment and agreement developed recently by Chomsky (1998, 2001) for application at the clausal level; we will propose here that this mechanism will shed light on some problems on Slavic nominal structure. Section 3 surveys the properties (and associated terminology) of the two basic types of nominal phrase alluded to above, a dichotomy which will play an essential role in our analysis.

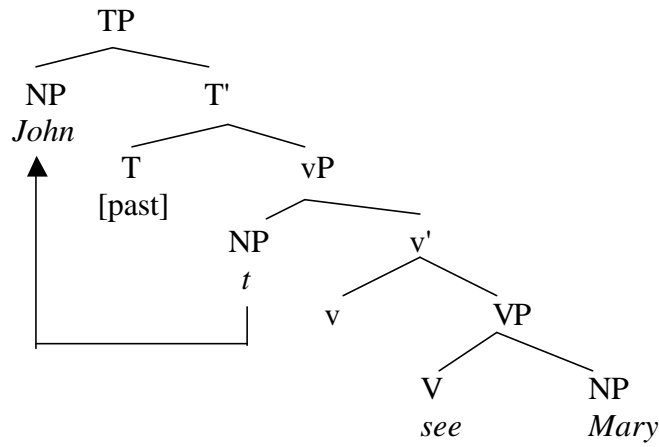
2. *The case assignment and agreement system: Basic assumptions*

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; the light verb v introduces (and assigns the agent thematic role to) the canonical subject and assigns the structural accusative case to the direct object (accounting for ‘Burzio’s generalization’: a verb assigns the accusative case only if a subject is selected).¹ 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 canonical subject and the accusative case licensing a direct object. *Prt* is adjectival in nature, so that in anchoring a clausal predicate it must be introduced by a copular verb, such as the appropriate form of ‘to be’. The resulting structure is in turn embedded in a Tense (T) phrase, the source of structural case for the eventual clause subject. In the active transitive construction, T attracts the canonical subject originating in Spec-of-v position to its specifier (Spec-of-T), the clause subject position; in the corresponding passive, in the absence of a closer nominal, T attracts the direct object. In both

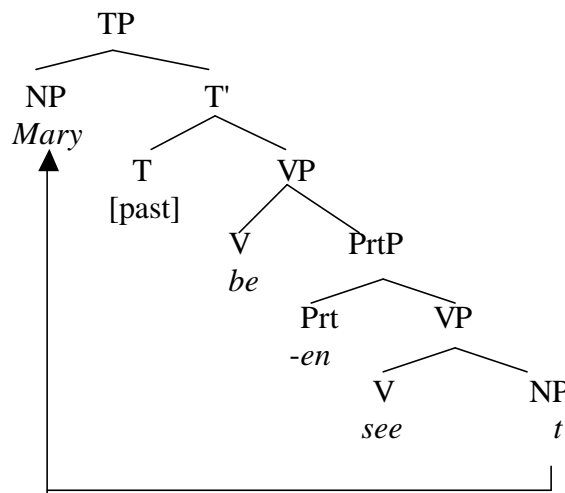
¹ We thus adopt a standard assumption of current work, the *VP internal subject hypothesis*, according to which the eventual clause subject invariably originates (is ‘inserted’ or ‘merged’) somewhere in the verbal phrase and is raised from there to a higher position in the clause outside the verbal phrase (whether VP or vP). Burzio’s generalization, incidentally, is *prima facie* falsified in Polish by transitive impersonal constructions (*Odnaleziono jego glowe* ‘His head_{ACC} was found’) and certain impersonal constructions (*Zawsze mnie mdliło po jeździe samochodem* ‘I_{ACC} was always nauseous after a car ride’).

cases, the NP attracted to Spec-of-T is assigned the Nominative case. These structures are illustrated as follows, with (3a) corresponding to (1a), and (3b) corresponding to (1b):

(3) a. John saw Mary.



b. Mary was seen.



Thus, the underlying subject in (3a) and the direct object in (3b) are placed in the subject position (i.e., raised to Spec-of-T) in the same way. T attracts and assigns the Nominative case to the highest NP in the verbal phrase. The case assigned by T is termed *structural case assignment*, because it is indifferent to the thematic roles borne by the nominal phrases in question or their source.

In addition to the lexical representations assembling these structures, an operation *Agree* plays a role in the the linguistic processes just described. Replacing earlier notions of feature checking, *Agree* works as follows. Many features come in pairs: valued and 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:]. Only features inserted as valued are interpretable at Logical Form and may remain in the derivation. Thus, there are two forms of uninterpretable features: those inserted without a value and those same features after they have been assigned a value in the course of the derivation. Uninterpretable features, by definition,

can only be present if they have consequences at Phonological Form and they must be valued before spell-out, but deleted in the derivation that proceeds to Logical Form. 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 unvalued 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 unvalued feature [person:] and the Spec-of-v (the eventual subject) 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. What makes Spec-of-v ‘active’ and available to ‘discharge’ its valued features to T under Agree is its unvalued case feature. An ancillary effect of Agree, crucial to our discussion, is that probe T assigns Nom(inative) case to an unvalued feature [case:] in the goal, and v assigns Acc(usative) to the same feature. Thus, case on the Spec-of-v stands in a reciprocity relationship with its predicate agreement features: Spec-of-v, the eventual subject, receives case from T, while assigning feature values to the latter. Finally, T has an ‘EPP’ feature which additionally requires that Agree move the goal to the specifier of the probe.

In (3a), then, v Agrees with the NP *Mary* and assigns the value Acc to its feature [case:]; no movement takes place, because v in this construction has no EPP feature. Later in the derivation, T Agrees with the NP *John*; the value Nom is assigned to the latter's unvalued case feature, and the entire nominal phrase raises to Spec-of-T in order to satisfy the EPP requirement of T. In (3b), on the other hand, there is no v to assign structural case to the direct object NP *Mary*. Therefore, when T functions as the probe of Agree and seeks a goal, it sees 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 *minimal link condition*, meaning that it applies to the first (structurally highest) potential goal. This explains why in (3a) T does not Agree with Comp-of-V: Spec-of-v intervenes.

3. Two categories of nominal: Referential and process

We assume the basic dichotomy of nouns proposed by Grimshaw (1990), adopting the labels *referential noun* and *process noun* for the two categories. The distinction is summarized in the following chart, which not only will serve as a useful reference for the ensuing discussion, but also fixes our terminology.

(4)

Referential nouns	Process nouns
Do not have argument or aspectual structure; apparent arguments are called ‘participants’.	Describe complex events: have argument structure (assign theta roles) and aspectual structure.
Participants are not obligatorily present in syntactic structure.	Arguments are obligatorily present in syntactic structure.
May be deverbal (=‘derived’), but need not be (=‘simple’). Morphological form in Polish if derived: <ul style="list-style-type: none"> • Various suffixes (including -nie/-cie and the null suffix) 	Always deverbal (derived from a verb stem). Morphological form in Polish: <ul style="list-style-type: none"> • -nie/-cie (=‘verbal nouns’) • Other suffixes, including the null suffix (‘action nouns’)

<p>Meanings:</p> <ul style="list-style-type: none"> • Concrete objects • Abstract concepts • Collective nouns • Result <ul style="list-style-type: none"> ? not deverbal: 'picture' ? deverbal: 'invention' • Simple events: 'trip', 'mistake', 'lecture' 	<p>Meanings:</p> <ul style="list-style-type: none"> • Factive • Manner • Eventive (refer to a state or process in its aspectual dimension)
Many (including result and simple event nouns) may be in the singular or plural.	Must be in the singular.
Oblique agent expression is a modifier (in English) or simply not possible (in Polish).	Agent may be expressed obliquely.
An implicit argument cannot control an infinitive in a purpose clause.	An implicit argument can control an infinitive in a purpose clause.
Not compatible with adverbs of completion or duration; compatible with frequency adverbs only in the plural.	Compatible with adverbs of completion, duration, and frequency.

Examples will emerge as we proceed with the discussion.

We now turn to the nominal phrase phenomena of Polish, beginning with those headed by referential nouns.

4. *The geometry of the referential nominal phrase*

4.1 Referential nominal phrases such as those in (5) headed by concrete and abstract nouns are said to exhibit *inherent case marking* on the first adnominal genitive not only because the source of case marking and thematic role on that nominal are the same (the head noun), but also because the choice of case is related to the thematic role assigned (identifying the content of the head noun). We assume that inherent case is specified in the lexical representation of the head which assigns it, along with a thematic role.

- (5) a. bochenek chleba (Marka)
' (Mark's_{GEN}) loaf of bread_{GEN}'
- b. galeria sztuki (Malgorzaty Kowalskiej) (cited by Rozwadowska (1997))
' (M. K.'s_{GEN}) art_{GEN} gallery'
- c. wolnosc wyboru (Polaków)
' (Poles'_{GEN}) freedom of choice_{GEN}'

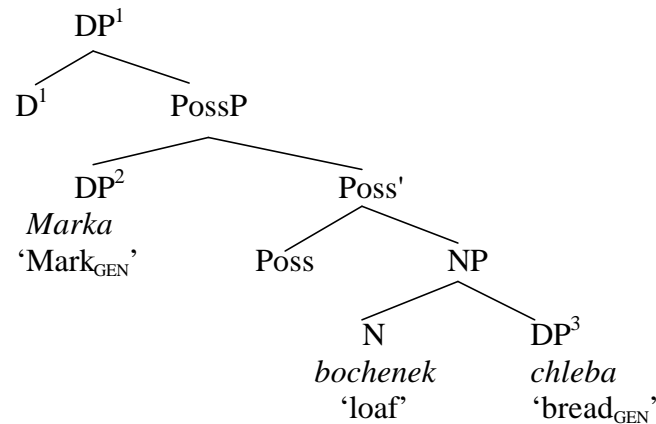
Moreover, each of the examples in (5) is compatible with a second adnominal genitive (parenthesized above), which is licensed differently from the first. This second adnominal genitive has a possessive meaning, but a possessor is clearly not implicated in the argument structure of the head. A loaf of bread is not defined in terms of its owner, so that we cannot look to the head noun

as the source of the thematic role Possessor. We assume that a referential noun (but not a process noun) may be selected by a category Poss, which assigns the required semantic role of Possessor.² In this respect, Poss is analogous to *v* of (3a) in selecting a specifier and assigning it a thematic role, but not case.

How then to assign case to the Possessor in (5)? Poss could conceivably select the Genitive case for its Specifier, but this would suggest that it is an accidental fact that Possessors are assigned the same case as the direct arguments of process nouns, as discussed in detail in the next section (cf. *istnienie naszego kraju* ‘the existence of our country_{GEN}’, *napisanie listu* ‘the writing of the letter_{GEN}’). In order to capture this generalization, we combine the case/agreement apparatus just outlined for clausal structure with the *Determiner Phrase hypothesis*, widely assumed in current work.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; it also expresses agreement in certain languages (e.g., Hungarian and Turkish) with the element it assigns case to.

Thus, while Poss assigns the second adnominal genitive in (5) its thematic role, D is the source of the genitive case. The structure of, say, (5a), then, may be displayed as follows (corresponding to (1c)):

(6)



The head noun *bochenek* ‘loaf’ selects a theme, expressed by DP³, with a valued case feature [case:Genitive]. This is an instance of inherent case, as both the case value and thematic role are licensed by the head N. DP² is assigned the thematic role Possessor by its head Poss, but structural case by D¹. DP² has an unvalued case feature [case:], valued as [Genitive] when D¹ Agrees with it. Since the category assigning case is not the source of the thematic role, this is an instance of structural case. DP³ is invisible as even a conceivable goal to probe D¹, since DP² intervenes.

² A category Possessor is assumed in Slavic work inter alia by Schoorlemmer (1998b). It would be our expectation that it is available universally.

³ DPs in various Slavic languages are assumed or supported, for example, in Babyonyshev (1998), Dimitrova-Vulchanova and Giusti (1998), Englehardt and Trugman (1998, 2000), Fowler and Franks (1994), Progovac (1998), and Rappaport (2000b). Arguing (to varying degrees) that these languages do not exhibit DPs are Corver (1992), Stjepanovic (2000), Willim (1997, 1998), and Zlatic (1997). Rozwadowska (1995, 1997) discusses the DP hypothesis, but frames her own detailed analysis of Polish NPs without it.

4.2 What we have said for concrete and abstract referential nouns also applies to result nouns, illustrated in (7). This is not surprising because result nouns, like the head nouns in (5), are referential nouns:

- (7) a. poczet królów (Matejki)
 ‘(Matejko's_{GEN}) gallery of kings_{GEN}’
 b. opis zachodu slonca (Mickiewicza) (cited by Rozwadowska (1997))
 ‘(Mickiewicz's_{GEN}) description of the sunset_{GEN}’

In contrast to (5), the second adnominal genitive in (7) designates something akin to an agent, identifying one who performed the event which led to the result denoted by the noun. We will treat this indirect, or *quasi-agent* interpretation, as a special case of the possessor thematic role.⁴ In a result noun an agent necessarily plays an indirect role, because the head noun does not denote the process itself, but the result of that process. For the moment this analysis is based on more of a promissory note than on an argument. After developing more descriptive material, we will return to an empirical argument (in section 6) based on binding (anaphor interpretation) that the quasi-agent of a result noun behaves more like a possessor (of a referential noun) than it does like an agent (of a process noun).

For the moment, we point out one ramification of our assumption. The notions of possessors and quasi-agents are not mutually exclusive: one could easily speak of a portrait of X painted by Y and belonging to Z. Surely a proud baker could refer to ‘his’ loaf of bread that Mark has just bought. But a third adnominal genitive in (7) is completely impossible. We take the notion of possessor to be broad enough to encompass both notions of possessor and quasi-agent, so that alternate interpretations are the result of simple lexical ambiguity, rather than structural ambiguity. Moreover, we propose that Poss selects a referential N, so that it cannot be merged recursively (taking another instance of Poss as its complement), thereby admitting alternate interpretations of co-existing tokens of the category. The syntactic structure of (7), then, is identical to that of (5).

5. *The geometry of the process nominal phrase*

Process nouns have attracted special attention over the years primarily for two reasons. First, their classic 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.

In Polish, there are two kinds of process nouns, defined by their morphological model. Those formed by the suffix *-nie/-cie* will be called *verbal nouns*. *Action nouns*, on the other hand, are derived from verbal stems by any of a large number of unproductive suffixation processes (cf.

⁴ See Ivanov (1989) for further discussion of possession as a special case of a more general relation. For the range of varieties of possession in Slavic, see Kiklewicz (1997).

odczyt ‘report, reading’, *sprzedaz* ‘sale’, *zaglada* ‘destruction’). Ambiguity between process nouns and deverbal referential nouns abounds, so that morphology tells us nothing. 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 (8) and (9). Either the specifier or direct complement positions can be expressed by the genitive case (an alternative in the former case is a possessive adjective, as discussed below); the so-called “subject genitive” (the *genitivus subiektivus* of traditional grammar) is illustrated in (8a)/(9a), and the “object genitive” (*genitivus obiektivus*) is illustrated in (8b)/(9b). Oblique complements expressed in the same form regardless of whether they relate to a verb or a process noun are given in (8c)/(9c):

- (8) a. *Cale kontynenty sa nieswiadomi [istnienia naszego kraju].*
 ‘Entire continents are unaware of [the existence of our country_{GEN}].’
 b. *Niniejsza liste mozna uzywac wylacznie w celu [odnalezienia prywatnych znajomych].*
 ‘This list can be used only for the purpose of [finding personal friends_{GEN}].’
 c. *kierowanie autem*
 ‘driving an automobile_{INST}’
- (9) a. *Omawiano mozliwosc [powrotu Polaków z ZSRR do Polski].*
 ‘The possibility of [the return of Poles_{GEN} from the Soviet Union to Poland] was discussed.’
 b. *[Kolejny odczyt licznika] nastapi za pół roku. (cited by Rozwadowska (1997))*
 ‘[The next reading of the meter_{GEN}] will be in six months.’
 c. *Po ataku na Polske ...*
 ‘After the attack on Poland ...’
Fascynacja mlodziezy kultura starozytna ... (cited by Rozwadowska (1997))
 ‘The fascination of young people with ancient culture_{INST} ...’

There is some controversy about whether subject genitives and object 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 categorical statements in the handbooks that deverbal nouns never combine simultaneously with two genitive case nominal phrases, one with subject meaning and the other with object meaning.⁵ The result is a sharp contrast with referential NPs: process nominals do not permit double adnominal genitives, while referential nominals do. Cf.:

- (10) a. **napisanie listu Kowalskiego*
 (‘Kowalski’s_{GEN} writing of the letter_{GEN}’)
 b. **zaglada miasta barbarzyńców (cited by Rozwadowska (1997))*
 (‘the barbarians’_{GEN} destruction of the city_{GEN}’)

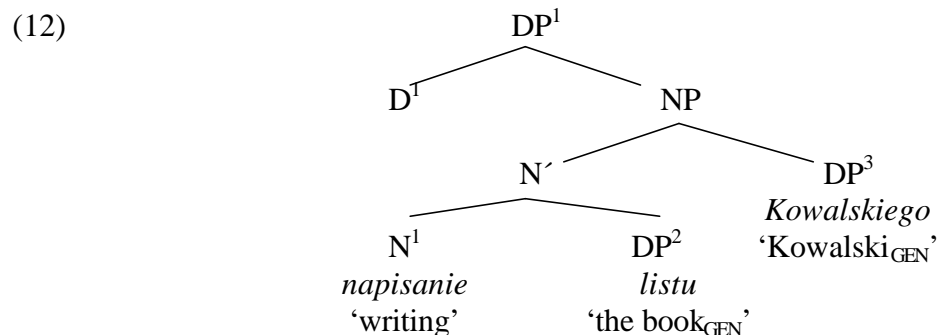
⁵ While saying that double genitives for process nouns are ‘almost without exception’ replaced by making the agent implicit (optionally expressed by a *przez* (plus accusative) prepositional phrase), Topolinska (1984: 366) is unusually liberal in admitting the possibility of double genitives if one is preposed, although the particle *to* seems necessary and the construction is stylistically marked: *I wtedy zaczęło się to Jana codzienne krytykowanie Hanki i Basi* ‘And at that time there began John’s criticizing Hanka and Basia on a daily basis’. The construction *Piotra krytyka Jana* ‘Peter’s criticism of John’ is marked as of questionable grammaticality. For more on the analysis of such constructions, see Migdalski (2000).

As is well known, in the absence of the double genitive, the Agent can be expressed by an oblique agent expression, as in the passive:

- (11) a napisanie listu przez Kowalskiego
 ‘the writing of the letter_{GEN} by Kowalski’
 b. zagrada miasta przez barbarzynców
 ‘the destruction of the city_{GEN} by the barbarians’

How are these facts to be accounted for?

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. The argument structure of the process noun *napisanie* ‘writing’, for example, is identical to that of the corresponding verb *napisac* ‘to write’, except for its category. These arguments could be realized, respectively, in the Spec-of-N and Comp-of-N positions, to give the following initial configurational structure:⁶



Our task is to account for the impossibility of two adnominal genitives in process nominals, under the assumption that *napisanie* ‘writing’, like the corresponding verb *napisac* ‘to write’, does not assign (‘select’) inherent case.

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, and (due to the nature of structural case) it is indifferent to whether it assigns this case to Spec-of-N or Comp-of-N. If two nominals with the unvalued feature [case:] are merged with a process nominal, only one can be assigned case because there is only one D, and it will Agree with whichever is closer. The Slavic NP, then, differs from a clause in having only one source of structural case, while a clause has two.⁷ Note that the D selecting a process nominal does not differ from one selecting a referential nominal, which also Agrees (and assigns the Genitive to) the closest DP (Spec-of-Poss, in the constructions discussed in section 4). In all configurations, D assigns structural case on Agreement independently of the assignment of thematic roles, which are licensed by different heads (Poss or N) and may perform different syntactic functions (specifier or complement). Recall that this was the approach to the active:passive

⁶ An alternative structure for the Polish process noun will be adopted below.

⁷ It is this very fact that indicates that the Polish process nominal phrase does not contain a nominal analogue to the v of the clause: a second case marker. Thus, we tentatively merge the external argument in (12) as Spec-of-N. But the question is moot, if the alternative structure proposed below is in fact correct.

contrast in clauses, displayed in (3) and is the essence of the ‘ergative’ pattern of case marking in nominals, noted by traditional grammarians (cf. Barxudarov (1973)).

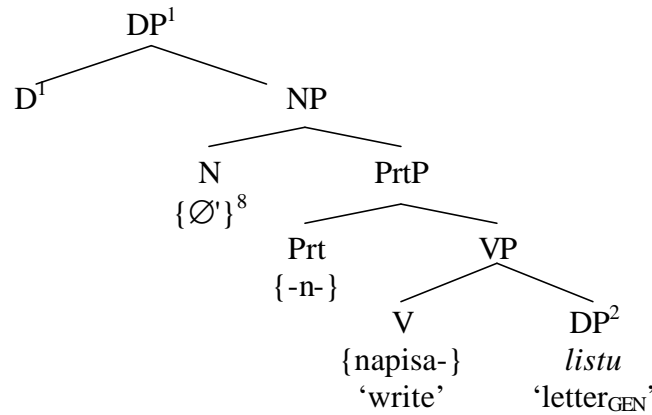
There are *prima facie* cases of clearly acceptable double adnominal genitives with process nominals:

- (13) Ci, którzy dazyli do pozbawienia Polaków wolności ...
 ‘Those who aspired to (achieve) the deprivation of Poles_{GEN} of (their) freedom_{GEN} ...’

The difference between (13), where a double adnominal genitive is permitted, and (10), where it is not, is that the verb underlying the process nominal in (13) takes the genitive case for the second complement (*pozbawic kogo czego* ‘to deprive someone_{ACC} of something_{GEN}’). Thus, the second complement genitive in (13) represent inherent case and is licensed by selection. In terms of the typology of case assignment, this process noun is analogous to the referential nouns in (5) and (7), where one instance of the Genitive is attributed to inherent case assignment (selected by the head N) and the other is attributed to structural case assignment (on Agreement with the functional category D).

Since the nominal phrase contains only one source of structural case, there is no nominalization corresponding to a transitive clause such as (3a) *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); cf. (11). On this strategy, a noun is lexically associated with an Agent, but no syntactic object associated with that Agent is present in the noun’s argument structure. We follow Babby who (in discussing Russian) sees the shared morphology between passive participles and verbal nouns as reflecting the syntactic derivation of the latter. In Polish, past passive participles are formed from verbal stems by either the suffix {-n-} (unmarked) or {-t-} (marked), depending on the phonological properties of the verbal stem: {napisa-} ‘to write’ → {napisa-n-} (with inflection, e.g., *napisany* ‘written’); {umyj-} ‘to wash’ → {umy-t-} (with inflection, e.g., *umyty* ‘washed’). The corresponding deverbal nouns are formed with the same suffixes (conditioned by the stem in the same way), which in turn undergo a palatalization standard in the verbal paradigm: {napisa-} → {napisa-n-} → {napisa-n-} (with inflection, → *napisanie*); {umyj-} → {umy-t-} → {umy-c-} (with inflection, → *umycie*). The oblique expression of the agent is shared by the two as well. Thus, following the model for the passive sketched above in (3b), (11) would be derived as follows, which corresponds to (1d):

(14)



D¹ Agrees with DP², assigning the latter structural Genitive case. There is no Agent argument, because there is no *v* to introduce/select it. In Grimshaw's terms, there is an Agent participant, but it is never mapped into a syntactic argument. An oblique expression (*przez Kowalskiego* 'by Kowalski') can be exploited to express the agent.

The structure in (14), which we are proposing here, differs in several significant respects from that proposed by Abney (1987) for gerundive nominals in English (*Bill's building the spaceship*). First, while Abney derives a gerundive nominal from a full verbal phrase (which would include, on our assumptions, the category *vP*), we derive Polish process nominals from PrtP's, which contain a VP, but no *vP*. This formalizes our claim that process nominals in Polish have only one structural case marker and it is not that found in clauses, but that which applies to possessors in referential nominal phrases: D. Second, while Abney assumes a VP (or *vP*) complement of D, we add the nominalizing category N, necessary to distinguish (in form and function) the PrtP of the clausal passive from the process nominal phrase (NP).⁹

The structure in (14) shares much with the proposal for Russian by Engelhardt and Trugman (1998, 2000) (see also Borer (1999) and Rozwadowska (1997)). But we have argued against that analysis for Russian (Rappaport (2000c)) primarily for two reasons. First, the Russian counterpart to the Polish verbal noun displays many fewer VP characteristics. The Polish forms exhibit great morphological regularity, retain distinctions in aspect and voice, regularly admit negated forms, and generally combine with object pronouns.¹⁰ Polish even marginally (if non-normatively) permits an accusative object (suggesting a *vP* above the VP) and more widespread (if not completely regular) use of adverbial modifiers instead of attributive ones. Thus, the case for derivation of process nominals from a full verbal phrase is much weaker in Russian than it is in Polish. Second, the Engelhardt and Trugman analysis has a serious technical problem which follows from the theoretical framework they presuppose: it is necessary to stipulate that NP-internal passivization (within the embedded VP, actually) is an obligatory step in the derivation in a way that violates cyclicity. This problem does not arise on our analysis because Agree does not

⁸ The nominalizing suffix is phonologically null, but invokes palatalization of the participial suffix: {n}/{t} → {n}/{c}.

⁹ It must be stipulated that N does not induce intervention effects and block agreement between, say, head D¹ and DP² in (14). This is a technical and highly theory-dependent question which we will not pursue here. Ironically, such an instance of N, with no reference, seems to perform less of a lexical role than many a 'functional category' with semantic content, such as T with tense or D with definiteness.

¹⁰ On morphological regularity, see Grzegorzycykowa et al. (1999: 393-4), for example, note that the exceptions are few and easily listed. Negated forms are derived with the prefix *nie-*: (*nie*)*pisanie listu* 'the (non-)writing of the letter'.

entail any movement (or ‘passivization’): in (14), for example, D¹ can assign the Genitive case to the Comp-of-V DP² without raising it first to a Spec-of-V position.

Aside from rendering the underlying subject implicit, a second strategy for expressing both arguments in the nominalization of a transitive clause is to employ a possessive adjective to represent the Agent. We now turn to this option.

6. Possessive adjectives and preposed adnominal genitives

It has been argued above that the existence of a single source of structural case within the nominal phrase entails that only one of two direct arguments (e.g., those not assigned inherent case) can be expressed. It does not matter whether that argument is ‘internal’ or ‘external’; if there are two, locality considerations (‘intervention effects’) entail that only the external argument can receive case, leaving the derivation to crash because the other argument is not assigned case. The elimination of covert movement and Specifier/Head agreement as a mechanism for case assignment entails that no movement (i.e., ‘NP-internal passive’) is required. Nevertheless, it is possible to circumvent this limitation on case marking by ‘internalizing’ the external argument and expressing it as an oblique, non-argument satellite of the nominal head (cf. 11).

It was also noted above that there is another means of circumventing the limitation on case marking: the external argument can be expressed by a possessive pronoun, leaving the case assigning properties of D free to apply to the internal argument. However, the distribution of this possessive pronoun is limited in Polish (more so than, say, in Russian), and while we must account for its occurrence, we can contribute little to the mystery of its limitations beyond recording their existence.

Puzynina (1969) notes the following curious descriptive patterns (pp. 145-9). For an intransitive nominal with no complements, the adnominal Genitive and possessive are interchangeable.

- (15) a. *plywanie Janka* ‘Janek’s swimming_{GEN}’
 b. *moje/jego plywanie* ‘my/his swimming’

However, when an oblique complement is added (so that the nominal phrase remains intransitive), the possessive form is not acceptable; the agent becomes implicit and expressible only by an oblique form:

- (16) a. [Posługiwanie się przez niego tym aparatem] wzbudziło zastrzeżenia.
 ‘[The use by him of this apparatus_{INST}] raised concerns.’
 b. Mierzi nas [to podlizywanie się przez niego zwierzchnikowi].
 ‘[This sucking up to the boss_{DAT} by him] disgusts us.’
 c. Oburzające jest [wskazywanie przez niego na brata jako sprawcę zajścia].
 ‘[The pointing by him to his brother as the guilty party] is outrageous.’

As for transitive nominals, the unmarked form in the literary language is an oblique agent:

(17) a nastawianie przez Janka/niego radia ‘the tuning by Janek/him of the radio’

However, the possessive forms are also available:

- b. Jego/twoje nastawianie radia ‘His/Your tuning of the radio’
 Jankowe nastawianie radia ‘Janek's tuning of the radio’

Puzynina makes three observations about the latter option. First, the possessive forms in this construction are stylistically marked in the literary language, being more characteristic of informal speech. This could be looked at as a special case of the limitation on possessive pronouns in intransitive pronominals: the presence of a complement (whether direct or oblique) makes the use of the possessive pronoun less acceptable. Second, there is a semantic shift with the use of the possessives: the action is interpreted as a characteristic of the subject, an attribute, rather than denoting a process in which that possessor is the agent. Third, there are contexts in which the possessive form is required in order to elicit a manner interpretation:¹¹

- (18) a. *Podziwiam [ujecie tego tematu Piotra/przez Piotra].
 (‘I admire [Peter's approach to this topic]/[the approach by Peter to this topic].’)
 b. Podziwiam [jego ujecie tego tematu].
 ‘I admire [his approach to this topic].’

Finally, only possessive pronouns in the third person can denote a Theme:¹²

- (19) a. ich zrozumienie ‘their understanding, the understanding of them’
 b. *moje zrozumienie ‘my understanding, the understanding of me’

This use of the third-person possessive is, as above, disfavored in the presence of another complement. More generally, as Trugman and Cetnarowska (2000) have shown, the use of possessive pronouns with process nouns imposes more NP-like structural behavior than otherwise (including the use of attributive modifiers instead of adverbial ones).

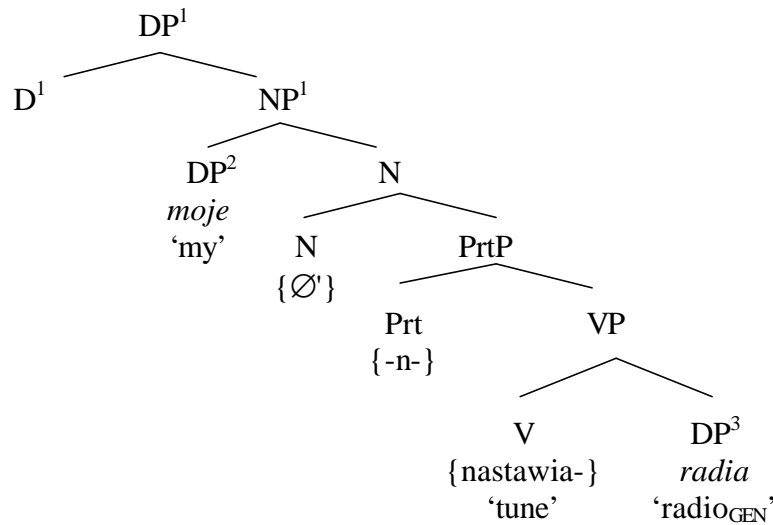
But let us consider the case of (17b) or (18b), in which a possessive pronoun can denote an agent in combination with a direct complement assigned structural case. It has been demonstrated in Rappaport (2000a, 2000c) that a range of syntactic phenomena indicate that possessive pronouns are syntactically associated with the genitive case, and that, moreover, they are inserted in syntactic structure with the corresponding case feature, analogous to instances of semantic case performing an adverbial function, such as the accusative of duration or the instrumental of manner or means. In this way, the structural case properties of D are free to apply to the complement NP. As to where the pronoun would be inserted, we cannot assume in Spec-of-v, because v assigns the accusative case; more generally, there is no second structural case assigner within the nominal phrase, in addition to D, in the way that v supplements T as a structural case assigner over the

¹¹ Similar observations have been made by Paduceva (1984) concerning Russian process nouns.

¹² This the case of ‘object pronominals’ discussed by Cetnarowska (1997) and ‘passive nominals’ discussed by Trugman and Cetnarowska (2000). The Polish facts are more subtle than even Puzynina’s perceptive observations suggest, and depend upon stylistic register. See also Schoorlemmer (1998a), who polemicizes largely with Paduceva (1984) over the corresponding Russian facts.

clause. We adopt, then, the simplest assumption: that the possessive pronoun is merged as an argument in the position of Spec-of-N, giving the following structure:

(20)



It follows from our analysis that a possessive adjective expressing the possessor of a referential nominal (including the quasi-agent of a result nominal) has a different origin than does the same form expressing the ‘subject’ of a process nominal: the former is merged as Spec-of-Poss, while the latter is merged as Spec-of-N. Interestingly, there is independent justification for this distinction. Zlatic (1997) points out that process nominals behave differently than do referential nominals (typically, “picture” result 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: (21a) with a referential nominal is ambiguous, the constructions in (21b) headed by process nominals are not:

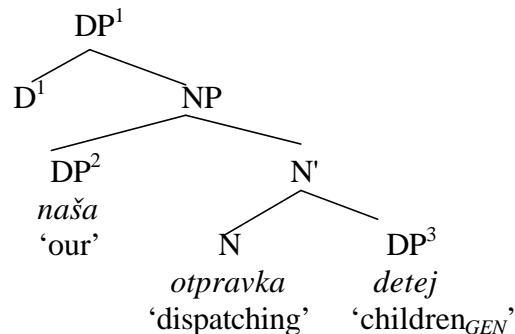
- (21) a. Jovan_i je procitao/izgubio [Marijin_j članak o sebi_{i,j}].
 ‘John_i read/lost [Mary’s_j article about self_{i,j}].’
- b. Mi_i smo se svi iznenadili [Jovanovim_j vraćanjem dece svojim*_{i,j} roditeljima].
 We_i were all surprised at [John’s_j returning the children to self’s*_{i,j} parents].
- Jovan_i je primetio [lošuj brigu ovih ženaj o sebi*_{i,j}].
 ‘John_i noticed [these women’s_j poor caring for self*_{i,j}].’

It is worthwhile considering Russian in this connection. Even though, as noted above, there are strong indications that the Polish analysis of process nominal phrases is NOT appropriate in Russian, the contrast which Zlatic observed for Serbo-Croatian holds for Russian as well. The ambiguous (22a) with a referential nominal contrasts with the unambiguous (22b), headed by an process nominal (note its factive interpretation):

- (22) a. Dissidenty_i citali [našij stat’i o sebe_{i,j}].
 ‘The dissidents_i read [our_j articles about selves_{i,j}].’
- b. Oni_i udivilis’ [našejj otpravke detej k svoim*_{i,j} roditeljam].
 ‘They_i were surprised at [our_j sending the children to self’s*_{i,j} parents].’

Zlatic'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 specifier in (21a) and (22a) does not satisfy this condition, since it is not a syntactic argument. As a result, the binding domain of the reflexive is the entire clause, rather than the bracketed 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 (1986), in which the binding domain is delimited by the presence of a SUBJECT. On the analysis proposed here for Polish, Zlatic's observation would indicate that the notion SUBJECT includes Spec-of-N, but not Spec-of-Poss. The same distinction applies to Russian, even though the properties of process nominals in this language suggest that they have a different structure. We assume for Russian a lexical process deriving process nouns from verbs while retaining the argument structure of the deriving base. Thus, the derivation of the Russian process nominal *naša otpravka detej* 'our dispatching the children' would resemble the following, in contrast to the Polish structure illustrated in (20):

(23)



The same operational distinction defining SUBJECT in the Polish structure applies to this Russian structure: the specifier of a lexical category (N) delimits the binding domain, while that of a functional category (Poss) does not.

7. Conclusion

The very nature of expressing generalizations has changed over the history of generative grammar. The relation between constructions exhibiting similar properties was originally formalized by deriving one from another (e.g., deriving derived nominals from clauses). As the linguistic significance of individual syntactic constructions (e.g., a nominal phrase versus a clause) was eroded, the theory of X-bar grammar made it possible to formalize similarities by means of a meta-language describing relations among parts of a phrase structure, independent of the categories involved (e.g., nominals and clause could exhibit parallel Spec-head and Comp-head properties, despite the categorial difference in the head in the two cases). As such phrase-structure relations have themselves eroded over the course of work within the Minimalist program, functional categories have increasingly borne the role of distinguishing otherwise homologous syntactic structures. It is in the spirit of Minimalism that we have developed a new analysis of the Slavic nominal phrase.

In accordance with the basic insight of the Determiner analysis, there is an essential parallelism between clauses and referential nominals: both are headed by a functional category

selecting a lexical category. The clause is T-V, and the referential nominal is D-N. Both can include another functional category adding an additional, distinctly salient argument, giving a clause structure of T-v-V, and a referential nominal structure of D-Poss-N. A process noun is parallel not to the active clause, but to the passive clause, in replacing v by Prt and adding an appropriate auxiliary to define the correct lexical category selected by the functional head: the copula BE verbalizes, and the morpheme {Ø'} nominalizes, a participial phrase. While v provides a second structural case marker (of the accusative) in clausal structure (in addition to T assigning the nominative), its absence in the nominal phrase leaves D as the sole structural case marker. The functional category D can assign case to Spec-of-Poss, Spec-of-N, or Comp-of-N, accounting for the homonymy of these constituents, all expressed by the genitive case or, as a case of morphological suppletion, a possessive adjective.

We conclude by highlighting two consequences of our analysis. First, v actually performs two functions. It serves as a functional category in having uninterpretable features which invoke Attract; and it serves as a lexical category in introducing an argument (the Agent of a transitive predicate). Poss, its nominal analogue, has only the latter function. Such a category raises questions about the dichotomy generally assumed between functional and lexical categories. In not having uninterpretable features Poss is not a canonical functional category. It is an odd lexical category, however, which not only has no phonological expression, but has minimal semantic content, serving only to relate a Possessor to a referential nominal. Second, it follows from our analysis of Polish that process nominals share with passive clauses a derivational structure that includes participles and verbal phrases without vPs: D - {Ø'}_N - Prt - N and T - be_V - Prt - V. This seems to be a language-specific fact, as it is not the case in English (cf. *the enemy's destroying the city, the enemy's destruction of the city*).

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Department of Slavic Languages and Literatures
University of Texas at Austin
Box 7217
Austin, Texas 78713
USA
E-mail: grapp@mail.utexas.edu