Noun Valency
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Volume 158

Noun Valency
Edited by Olga Spevak
Noun Valency

Edited by

Olga Spevak
University of Toulouse 2

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For interlinear glosses The Leipzig Glossing Rules were used.
Editor’s foreword

From Tesnière (1959) onward, the concept of valency, “the capacity a verb has for combining with particular patterns of other sentence constituents” (Gilbert 1994:4878), is mainly applied to verbs and serves to determine their valency frames. Complements required by the valency of a verb are called “arguments” (Fr. “actants”, Germ. “Ergänzungen”); complementation that is not required by the valency of a verb is called “satellite” (or “adjunct”, Fr. “circonstant”, Germ. “freie Angabe”). Later scholars dealing with valency extended the same concept to nouns – and adjectives – which, due to their semantic values, may also require arguments (Sommerfeldt & Schreiber 1996, among others).

Despite several recent publications (van Durme 1997; Alexiadou & Rathert 2010; Rathert & Alexiadou 2010), the valency of nouns is a topic that still remains in the shadow of the valency of verbs. Additionally, approaches to noun valency are rather diverse. Some scholars attribute the capacity of taking arguments only to nominalizations or deverbal nouns (e.g. Grimshaw 1990), some focus on support verb constructions (especially within French linguistics), some even deny noun valency as such (e.g. Mackenzie 1997). Nevertheless, the emergence of valency lexicons of verbs, nouns, and adjectives, which started in the 1970s (Helbig & Schenkel 1969 being the first), testifies to the usefulness of this concept in a description of a language.

This volume aims to contribute to the discussion of noun valency – understood here in a broader sense as a capacity of requiring complements – not only from a theoretical point of view, as is often the case, but also from an empirical one by presenting a series of studies focusing on particular questions and based on data-driven research. The current volume explores properties of valency nouns in a variety of languages, including Bulgarian, Czech, German, Latin, Romanian, and Spanish. The specificity of this book consists in the diversity of the methodological approaches used. It is not embedded within one particular linguistic theory, either. Rather, it explores different theoretical frameworks: Head-driven

1. The invention of the concept of valency is usually credited to Tesnière. His book first appeared in 1953, the 1959 edition is posthumous; its composition dates back to the 1930s and 1940s. However, Gilbert (1994:4878) reports that the notion of valency had also been expounded by de Groot in his Structurele syntaxis (1949) and is even hinted at by Bühler in 1934.
Phrase Structure Grammar (HPSG), the Minimalist Program within Generative Grammar, Functional Generative Description (FGD), and Construction Grammar. In the empirical studies, different types of electronic corpora are used, the details of which are presented below. Special attention is paid to deverbal nouns, but nouns expressing quantity and “compound-like” constructions involving relationship and interactivity are also dealt with.

The chapters in this volume grew out of a workshop “Noun valency” organized during the 45th annual meeting of the Societas Linguistica Europaea in Stockholm (29th August – 1st September 2012). This lively and engaging workshop revealed the importance of the exploitation of corpora if we want to advance our knowledge of the behavior of valency nouns. The building of electronic databases and their annotation is without doubt hard work; however, the fruits collected from them constitute an irreplaceable source of information.

There are a number of electronic corpora available for modern languages, especially annotated corpora making it possible to formulate precise research questions. In this context, it is worth mentioning the Prague Dependency Treebank (PDT), which is elaborated within the framework of Functional Generative Description (Sgall et al. 1986). Its specificity resides in the interaction between the theoretical framework and the annotation of texts. In particular, the syntactic and semantic analysis of actual sentences, which is essential in providing the annotations, brought about the necessity of refinement, adaptation, and complementation of some theoretical notions. For example, annotators cannot simply ignore the fact that an obligatory – and therefore valencial – complement is not expressed. This raises the question of how this or a similar situation should be treated methodologically and leads to the consideration of new concepts (contextual ellipsis, incorporation of participants, etc.) that have to be elaborated theoretically and implemented in an existing methodological framework. Jarmila Panevová’s study (Contribution of valency to the analysis of language) deals with theoretical issues of valency on a general level and with the specificity of noun valency as opposed to verb valency. Among other things, she presents the criteria for establishing valency frames as well as a survey of the semantic participants and their surface forms. Her comprehensive account is based on her rich experience with annotation of the PDT corpus on the one hand, and with the creation of PDT-Vallex on the other. PDT-Vallex is a valency lexicon of verbs, nouns, adjectives, and adverbs (http://ufal.mff.cuni.cz/PDT-Vallex), which arose as a by-product of PDT corpus annotation. Moreover, Panevová herself (1974 and 1975) provided a theoretical starting point for treating and annotating valency complements.

Within the same framework, Veronika Kolářová (Special valency behavior of Czech deverbal nouns) exploits the PDT corpus, which contains 1.5 million words with syntactic annotation and 0.8 million words with complex semantic
annotation, and also the much larger, lemmatized, and morphologically annotated Czech National Corpus (http://ucnk.ff.cuni.cz). She is concerned with valency properties of Czech deverbal nouns that can exhibit typical or item-specific syntactic behavior. She focuses on deverbal nouns situated on the boundary between action nouns and result nouns and gives an account of their valency frames. She pays special attention to the potential relationship between special forms of complementation and changes in the meaning of deverbal nouns.

Elisa Bekaert and Renata Enghels (Nominalizations of Spanish perception verbs at the syntax–semantics interface) focus on perception nominals, which have received less attention than true action nouns. More particularly, they examine the relationship between the complementation of the source verbs and their corresponding nominalizations, based on a large amount of empirical data provided by the (non-annotated) Corpus de Referencia del Español Actual (www.rae.es). Some preliminary distinctions are necessary in order to understand the behavior of perception nominals, for instance between eventive nouns such as visión, and referential nouns such as vista. This semantic difference is shown to have a clear impact on the syntax of perception nominals: the first category typically expresses the first argument (perceiver), whereas the second occurs with the second argument (object of perception).

Věra Dvořák (Case assignment, aspectual properties, and (non-)expression of patients: A study of the internal structure of Czech verbal nouns) concentrates on one type of Czech deverbal event noun, those corresponding to the English “ing-of” nominals. Working in the framework of Generative Grammar, she examines the surface realization of their participants (agents, patients, and goals) with respect to the source verbs. The deverbal nouns under examination are sensitive to aspect, just like their corresponding verbs, and can take (im)perfectivity-marking aspectual affixes. This point is closely related to the issue of non-overt or null patients, which are allowed with imperfective verbs but usually not with their perfective counterparts. On the basis of the data elicited from native speakers, Dvořák claims that deverbal event nouns, irrespective of their aspectual value, admit a null patient if it is inferrable from the previous context. Otherwise – that is, without sufficient contextual information – they behave just like the corresponding verbs in not allowing null patients in combination with perfective stems.

Ana-Maria Barbu’s contribution (A data-driven analysis of the structure type ‘man–nature relationship’ in Romanian) is about juxtaposition constructions containing a relational noun (such as relationship) and a “compound-like” expansion (man-nature). In the first place, Barbu examines the grammatical relationship between the noun and the expansion, but she also pays special attention to the structure of the expansion itself. She shows that the construction under examination contains a relational valency noun and a complex complement that can
be interpreted as a special coordination phrase that also implies reciprocity. Her analysis is based on the data from a large Romanian corpus ZiareRom built from non-annotated newspaper texts and is presented within the framework of Construction Grammar.

Petya Osenova (Classifier noun phrases of the type N1N2 in Bulgarian) discusses noun phrases expressing measures, containers, and forms of grouping in Bulgarian. Working within the framework of Head-driven Phrase Structure Grammar, she shows that these “apposition-like” phrases in fact behave as head–complement constructions. She proposes several semantic subtypes and evaluation criteria useful for identifying them. Her research is based on data from the Bulgarian National Reference Corpus (www.webclark.org), developed by the BulTreeBank Group, of which she is a constitutive member. The author used the online version of a large corpus, comprising more than 400 million tokens of tokenized but non-annotated texts as well as the syntactically annotated part of the corpus – the BulTreeBank, which comprises 216,000 tokens (about 15,000 sentences).

Rossella Resi (Noun phrasal complements vs. adjuncts) is concerned with the syntactic differences between restrictive and non-restrictive relative clauses in German. She argues that restrictive clauses function as modifiers exhibiting a complement relationship with their head, unlike non-restrictive clauses, which function as adjuncts. These properties suggest a close analogy with central and peripheral subordinate clauses depending on a verb (the distinction introduced by Haegeman), in that the former type of relative, noun-dependent clauses is central, the latter peripheral. The author adopts the framework of Generative Grammar and uses the data collected from native speakers who were asked to evaluate the grammaticality of restrictive and non-restrictive relative clauses in a specific context.

Olga Spevak (Noun valency in Latin) addresses several issues concerning noun valency in Latin, such as some historical considerations, predictability of the number and type of arguments used with different nouns, nominalization of verbal notions in Early Latin, and the construction of the so-called dominant participle. Latin provides interesting evidence for argument marking at a noun phrase level: arguments are normally encoded in the genitive case (the adnominal case par excellence); other morphological cases as well as prepositional phrases are restricted to specific semantic categories of nouns. This work is based on several case studies made with the help of the (non-annotated) electronic database Library of Latin Texts.

The editor would like to thank all the contributors for participating in this project. Special acknowledgments go to Prof. Eva Hajičová and all the colleagues who willingly accepted the request for review and participated in the peer-reviewing process. Their expertise contributed not only to the improvements of
individual articles but also to the fruitful discussion of the topic of noun valency. Many thanks go to Peter T. Daniels for his valuable help with proofreading and his critical remarks, and also to Vandana Bajaj, Matthew Barros, Nick Danis, Natalie DelBusso, Ryan Denzer-King, and Jeremy Perkins for proofreading the chapters in this volume.

Olga Spevak

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Veronika Kolářová is Senior Research Associate at the Institute of Formal and Applied Linguistics, Faculty of Mathematics and Physics, Charles University in Prague. Her research interests lie in theoretical dependency syntax and corpus linguistics, with special focus on interfaces between syntax, morphology, and the lexicon in the domain of noun valency. She participates in building of the annotated corpus of Czech, the Prague Dependency Treebank. She has published articles in Slavia and The Prague Bulletin of Mathematical Linguistics and is author of a book on the valency of Czech deverbal nouns (Karolinum, 2010), written in Czech.
Petya Osenova is associate professor of Morphology and Syntax in the Division of Bulgarian Language, Faculty of Slavic Languages, Sofia University “St. Kl. Ohridski”. Her interests are in the areas of Formal and Corpus Linguistics as well as in Grammar Writing. She is the author of a book on Bulgarian noun phrases (2009) and co-author of a book on the formal grammar of Bulgarian (2007), both books in Bulgarian. Petya Osenova is also the author of the Bulgarian language section: “The Languages of the New EU Member States”, Revue Belge de Philologie et d’Historie (2011). In 2010 she was a Fulbright Fellow at Stanford University (USA).

Jarmila Panevová is a Professor of General and Computational Linguistics at the Institute of Formal and Applied Linguistics, Faculty of Mathematics and Physics, Charles University in Prague. Her main research interest is the grammar of contemporary Czech, especially syntax, and, more broadly, basic issues of general linguistics. She is a co-author of The Meaning of the Sentence in its Semantic and Pragmatic Aspects (D. Reidel, Dordrecht 1986) and the author Forms and Functions in the Structure of the Czech Sentence (Academia, Prague 1980), written in Czech. She is a leading figure and an excellent and popular teacher in the field of valency studies, focusing on verbs and nouns. Her ideas concerning valency were formulated as early as the 1970s in the article “On verbal frames in Functional Generative Description” (The Prague Bulletin of Mathematical Linguistics, 1974 and 1975). She is one of the authors of the conceptual scheme of the Prague Dependency Treebank and continues to serve as an advisor to the team building updated versions of this annotated corpus of Czech.

Rossella Resi is a Ph.D. student at the University of Verona (Italy) working primarily on Germanic syntax. At the moment she is working on her dissertation concerning word order phenomena in German at the interface between syntax and informational structure. She wrote “The position of restrictive clauses in German” (Lingue e Linguaggio, 2011).

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CHAPTER 1

Contribution of valency to the analysis of language

Jarmila Panevová
Charles University, Prague
Faculty of Mathematics and Physics

The main criteria used for the valency of verbs in the framework of Functional Generative Description (FGD) are introduced, leading to the recognition of three classes of verbal modifications: inner participants (IPs), obligatory free modifications (FMs), and quasivalency modifiers (QMs). The sources of surface deletions of valency modifications are presented. For an analysis of noun valency, word formation is taken into consideration. The criteria proposed for the valency of verbs are applied in order to determine the valency of deverbal nouns. Conversion of the verbal valency frame into the valency frame of the noun is accompanied by formal changes in the morphemic form of inner participants. The behavior of specific noun modifiers is studied with regard to their position in the corresponding valency frame (VF).

1. Why valency?

At present, the topic of valency is one of the most important and attractive issues in grammatical description. It appears in different frameworks and is covered by different terminology – case grammar, theta-roles, verb and its arguments, actants and circonstants, complements and modifiers, (inner) participants and (free) modifications, etc. The starting point for valency studies was the valency of verbs, which stimulated the “verbocentric” approach to syntax. During recent decades, however, the topic of valency has attracted the attention of researchers working in lexicology and lexicography. Several valency dictionaries for different languages have been published, Helbig and Schenkel (1969) being the first. This fact reflects another aspect of valency studies. The description of valency belongs to both syntax and the lexicon, which clearly reflects the interplay of the two modules of language description, the lexicon and the grammar.
An extension of the study of valency to the other parts of speech is again a feature which emphasizes its contribution to language description. The diversity of approaches presented in the present volume is also unsurprising.

It is then quite evident that contemporary language description could hardly be possible without a notion of valency, whatever the terminology or framework. The importance of data on valency for the teaching of languages is unquestionable. For the rule-based systems of natural language processing, the existence of valency dictionaries, and of rules specifying how the valency members are realized in the texts, is an inseparable part of the automatic parsing of input sentences, as well as for text generation. Violation of the valency requirements of the head of a construction is a marker of ungrammaticality. Within automatic language processing, such a situation usually leads to failure of the analysis; during generation, however, the need to observe the valency requirements of the head is one of the guarantees of the grammaticality of the generated output.

Though here we stress the attractiveness and importance of the topic of valency, we must admit that presentations of valency phenomena differ greatly depending on the terminology and explanations used.

Therefore, before presenting the empirical issues connected with noun valency, we briefly describe our framework and the terminology used in the description that follows. Our contribution is based on the framework of Functional Generative Description (FGD) that was proposed for Czech in the 1960s (Sgall 1967) and developed over the following decades, including the theory of valency (Panevová 1974 and 1975, Sgall et al. 1986). Within this framework, valency theory was applied to the valency of verbs and was later broadened to the valency of nouns (see Piťha 1981, Panevová 2000 and Kolářová 2010) and adjectives (Panevová 2008).

2. What is valency about?

Our approach is first demonstrated via the criteria used for valency of verbs, and then these criteria are applied to nouns.

Modifications (complementations) of verbs are classified according to two criteria testing their compatibility with their verbal heads:¹

¹ The repertoire of modifiers is based on traditional Czech syntactic handbooks (e.g. Šmilauer 1947; Grepl & Karlík 1986; Daneš et al. 1987) and on empirical studies within FGD (new types of modifiers were introduced in FGD by Panevová 2003; Mikulová et al. 2005; Panevová & Mikulová 2012).
i. A modifier may be connected with only a limited number of heads, which must be listed;\(^2\)

ii. A modifier may be connected with any verb.\(^3\)

Modifiers satisfying criterion (i) (see Panevová 1974: 11f.) can occur with a given head only once, while modifiers satisfying criterion (ii) can be repeated with a single governor (see also the notion “repeatable” in Mel’chuk 1988: 143).

The verbal modifications which satisfy criterion (i) are called **inner participants (IP)**, for example *dům* ‘house’ in *stavět dům* ‘to build a house.’ The other class of verbal modifications, satisfying (ii), is called **free modification (FM)**, for example ‘in the train’ in *usnul ve vlaku* ’he fell asleep in the train’, *rychle* ‘quickly’ in *běžet rychle* ‘to run quickly’. The compatibility of a particular verb with every type of modifier from the list was tested.\(^4\) On the basis of these tests, the verbal modifier enters either the class of inner participants (a) or the class of free modifications (b):

a. Actor (ACT), Patient (PAT), Addressee (ADDR), Effect (EFF), Origin (ORIG);

b. other modifiers (location, direction, temporal, manner, cause, regard, etc.).

A “middle” class of modifiers, called **quasivalency (QM)**, was added later (see Panevová 2003; Lopatková & Panevová 2006). This concept covers cases such as Obstacle modification (OBST), e.g. *Jan zakopl o stůl* ’John stumbled over the table’ or Difference modification (DIFF), e.g. *Inflace se zvýšila o několik procent* ’The inflation has increased by several percents.’ The QMs share some of the features typical of an IP (they occur with a limited class of verbs, their forms are governed by their respective heads, they are not repeatable), but some of their features are shared with the class of FMs – compared to IPs (such as ACT, PAT), which are semantically heterogeneous, QMs have specific semantics.

Thus, the **valency of an item** can be defined as a set of required dependents for a given item, with a desired dependency function – and for some of them, e.g. for the class of IPs and QMs, with a prescribed form. It is reflected in the lexicon in the shape of a valency frame (VF). In the valency dictionaries compiled for FGD and its application for corpus annotation (Lopatková et. al. 2008 and Žurešová 2011), the VF contains all the IPs (marked for obligatoriness or optionality and for

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2. The Actor modifier (looking like an exception from this criterion) has a special position.

3. Some exceptions to this general statement exist; they are influenced by the lexical incompatibility of the head with its modifier.

4. A full list of inner participants and free modifications, used in the classical version of FGD, is given in Sgall et al. (1986: 198); an enriched list is given in Mikulová et al. (2005: 425f.), where the term ‘functor’ is used.
their morphemic form(s)) and all obligatory FMs. For ambiguous and polysemic lexical units, a VF is specified for each meaning they have. The VF can be empty for specific verbs, e.g. for *pršet* ‘to rain.’

3. The deletion/absence problem

So far, our assumptions have been based on the valency members (VMs) present on the surface level. The situation is complicated, however, by the existence of the surface deletion (absence) of a VM. The sources of absence of a member of a VF are the following:5

i. An IP is part of a VF, but it is marked as optional (opt). ADDR and ORIG with the verb *koupit* ‘to buy,’ PAT and ADDR with the verb *chlubit se* ‘to boast,’ and PAT with the verb *mluvit* ‘to talk’ are examples of optional participants (see the illustrations of VFs in (1), and the applications of the VF in concrete utterances in (2)–(3)). In these cases the IP is not deleted – patient in (2), addressee and origin in (3) – but, as its VF allows, is simply not used.

(1) *mluvit* ‘to talk’ – ACT(NOM), PAT<sub>opt</sub> (o + LOC) ‘about’, ADDR (s + INS) ‘with’
* koupit ‘to buy’ – ACT(NOM), PAT(ACC), ADDR<sub>opt</sub> (DAT), ORIG<sub>opt</sub> (od + GEN) ‘from’

(2) Jan často mluví se svými prarodiči.
John-nom often talk-PRS with his-INS grandparents-INS
‘John often talks with his grandparents.’

(3) Jan včera koupil nové auto.
John-nom yesterday buy-PST new car-ACC
‘John bought a new car yesterday.’

ii. The VM is generalized. The notion of generalization of ACT occurs in traditional syntactic approaches under different terms. In Generative Grammar it is called “arbitrary” (PRO<sub>arb</sub>). The semantic interpretation of a generalized actor refers prototypically to the group of persons typical/customary for a given action/state. In Czech, the typical form for generalization of the actor (ACT) is a reflexive verbal form (*psát (se) ‘to be written;’ cf. French *s'écrire*) with absence of a slot for an ACT, see (4).

5. Deletions connected with text structure (textual anaphora and ellipsis) are not considered here.
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(4) Na začátku věty se piše velké písmeno.

At beginning sentence refl write-3sg-prs capital letter-nom
‘A capital letter is written at the beginning of a sentence.’

However, the notion of generalization is applicable for the other valency members as well. See general PAT and general ADDR in (5) with the verb having obligatory PAT and ADDR in its verbal frame:

(5) Zuzana prodává v supermarketu.

Sue-nom sell-3sg-prs in supermarket
‘Sue sells in the supermarket.’

The annotated corpus (Prague Dependency Treebank, PDT 2.0),6 for the manual annotation of which the FGD framework was used, makes it possible to compare the number of overtly expressed IPs with the number of their generalization. The result of this comparison is given for participants of verbs in Appendix 1, for noun IPs in Appendix 2.

iii. In Panevová (1974: 17f.), a test for determining the obligatoriness of VMs was proposed, and it still appears to be a useful tool in doubtful cases, with surface absence of VM expected in the text. Example (6) shows an application of this test (called a dialogue test) to an omitted obligatory FM in a dialogue between two speakers.

(6) a. Přátelé už přišli.

Friend-nom.pl already come-3pl.pst
‘My friends have already arrived.’

b. Kam?

‘Where?’

c. *Nevím.

‘I don’t know.’

Under normal circumstances, the question in (6b) cannot be answered by the speaker of (6a) with (6c). The unacceptability of such a dialogue demonstrates that the slot for direction modification (DIR) is semantically obligatorily with the verb přijít ‘to come’ (though deletable on the surface). The marker of deletability must be reflected in the VF in the valency lexicon. However, empirical studies of this issue still continue for both the verbs and nouns.

6. PDT 2.0, see ⟨http://ufal.mff.cuni.cz/pdt2.0⟩ contains 49,431 sentences with 833,195 tokens.
4. Labelling of inner participants

The interpretation of the labels used for IPs in our framework is influenced by Tesnière’s (1959) approach. If a verb has a single IP (argument), it is an ACT(or), as in *otec pracuje ‘father is working’, as well as in *otec spí ‘father is sleeping’ and *komín kouří ‘the chimney smokes’. The two-argument verbs have ACT(or) and PAT(ient) in *chlapec chytí rybu ‘a boy caught a fish’ as well as in *muž kope jámu ‘a man digs a hole’ and *chlapec viděl lva ‘a boy saw a lion’. In these examples the semantically based theories would assign different labels to ACT in the first three examples and to PAT in the last three. With verbs with three (or more) arguments, the semantics of the participants is taken into consideration: after the ACT and PAT are determined, the third and following slots are candidates for ADDR(see), EFF(ect), or ORIG(in). The surface requirements of the given item (its “government”) are also a useful tool for this labelling. In the example *řečník oslovil publikum ‘a speaker addressed the hearers’, semantically oriented theories would be labeled the 2nd argument (‘hearers’) an ADDR, while FGD considers it PAT. We speak here about a (cognitive) shift (in this case the shift of ADDR into the position of PAT).

5. Conclusions on verbal valency as a source for the examination of valency of nouns

1. As stated in Section 2 above, verbal modifiers (they number approximately 50) are classified into 3 groups: inner participants (IPs), free modifications (FMs), and quasivalency modifications (QMs).
2. Any modifier specified for a particular verb as its IP, obligatory FM, and QM has a slot in the corresponding valency frame (VF) in the lexicon.
3. No verbal VF can contain a slot for PAT without having a slot for ACT; no verbal VF can contain a slot for ADDR, EFF, or ORIG without having slots for ACT and PAT.

6. Valency of nouns

The criterion that is most reliable for the nature of the valency of the verb modifier (and the deletion of which causes ungrammaticality, as in *Jan navštívil ‘John visited’) fails with nouns. Omission of a noun modifier occurs much more often

7. The arguments for the shifting are given in Panevová (1974) in comparison with Tesnière’s and Fillmore’s approach.
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than with verbs (for comparison of expressed and generalized participants see Appendixes 1 and 2). Any noun with an obligatory valency slot can occur without such a modifier and still retain grammaticality (e.g. *skupina* ‘group’, *část* ‘part’, *tucet* ‘dozen’). On the other hand, while verbs with empty VFs are rare (e.g. *prší* ‘it rains’), there are many nouns with no valency slots in their VFs. This holds especially for primary, non-derived nouns.

The derivation of nouns plays an important role in the study of their valency. Therefore we separate the examination of the valency of deverbal (and possibly deadjectival) nouns (Section 6.1) from that of primary nouns (Section 6.2).

6.1 Valency of deverbal nouns

There are two classes of deverbal nouns (Nₐ):

i. nouns derived by *syntactic derivation*, such as *ošetření* ‘treatment’ (see Kuryłowicz 1936, and applied here in Kolářová’s contribution, this volume). The syntactic function of the source verb changes, while the lexical meaning is not touched (6.1.1);

ii. nouns derived by *lexical derivation*, such as actor nouns like *učitel* ‘teacher’, where the lexical meaning as well as the syntactic function are changed (6.1.2).

6.1.1 Deverbal nouns derived by syntactic derivation

Nouns derived by syntactic derivation inherit the VF slots of their source verbs. Though the morphemic forms of the specific participants often change in comparison with the forms of the IPs of corresponding verbs, the assumption of inheritance of VF is in principle valid. Formal changes of the morphemic forms are partially regular, partially irregular, sometimes even unexpected. The latter cases are the topic of Kolářová’s contribution to this volume. The transformation of VFs with two-argument verbs into VFs of nouns is illustrated by Examples (7)–(11).

(7) a. Lékař ošetřil pacienta.
Doctor-nom treat-pst patient-acc
‘The doctor treated a patient.’

b. ošetření pacienta lékařem
 treatment-nom patient-gen doctor-ins
lékařovo ošetření pacienta
 doctor-adj.poss treatment-nom patient-gen
pacientovo ošetření lékařem
patient-adj.poss treatment-nom doctor-ins
In the nominalized form of the verb \( (N_v) \), both participants, ACT and PAT, can be expressed by the genitive form (see (7c)), but if these two IPs co-occur, the genitive form is strongly preferred for the position of PAT. The GEN form is also excluded for the ACT if the PAT is expressed by a possessive adjective (see (7b)). PAT is expressed by a possessive adjective, which is an adjective derived from a noun, as in \( lékař-ovo ‘doctor’s’ \) or \( pacient-ovo ‘patient’s’ \) in several variants of (7b).

The noun VF derived from the verb \( odjet ‘to leave’ \) is given in the right side of (8a), and its application is illustrated by (8b) and (8c).

(8) a. \( VF: V \) ACT(NOM), DIR1\(^8\) \( \rightarrow N_v \) ACT(GEN) DIR1

b. Můj kolega \( odjel \) ze Stockholmu.
   my colleague-nom leave-pst from Stockholm
   ‘My colleague left Stockholm.’

c. \( odjezd mého kolegy \) ze Stockholmu
   leaving my colleague-gen from Stockholm-gen
   ‘my colleague’s departure from Stockholm’

The possessive adjective (\( kolegův \)) is excluded in (8c) by the syntactic rules of Czech whereby a derivation of the possessive adjective is allowed only with a single human noun (cf. 7b), while in Example (8c) ACT is expressed by a noun phrase.

The single genitive form in these deverbal noun patterns conveys the well-known ambiguity of the type \( střílení lovců ‘the shooting of the hunters.’ \) Karlík and Nübler (1998) and other authors explain this ambiguity as resulting from different sources. In these cases the ACT label correspond to nominalization of the active sentence (‘the hunters shoot’), while PAT in these constructions has as its source a passive sentence (‘the hunters were shot’).

---

8. DIR1 is used for the meaning of direction from where?
The verb *hodit* ‘to throw’ with the VF ACT(NOM), PAT(INS) is transformed into a nominal construction with the VF N\_\_; ACT(INS / GEN / ADJ-POSS / *od* + GEN), PAT(INS), see (9a) and (9b).

(9) a. *Sportovec* *hodil* diskem.
    sportsman-NOM threw-PST discus-INS
    ‘A sportsman throw a discus.’

    b. *hod* diskem od *sportovce*
      throw-NOM discus-INS from sportsmen-GEN
      sportsman-ADJ.POSS throw-NOM disc-INS
      ‘the sportsman’s throwing of the discus’

As a result of the regular transformation between VFs of verb and noun, the instrumental form for ACT is expected here. However, pragmatic conditions (the euphony of two instrumental cases) lead ACT to prefer the other two possible forms (GEN or possessive adjective).

The verbs with PAT in the genitive, such as *dosáhnout*, V: ACT(NOM), PAT(GEN), ‘to achieve’ preserve this form in the N\_\_ frame, but they exclude the GEN form for the ACT position; see (10a) and (10b).

(10) a. *Učitel* *dosáhl* zamýšleného cíle.
    teacher-NOM achieve-PST intended target-GEN
    ‘The teacher has achieved the intended target.’

    b. *učitelovo* dosažení zamýšleného cíle
      teacher-ADJ.POSS achievement-NOM intended-GEN target-GEN
      *dosažení učitele zamýšleného cíle*
      *achievement-NOM teacher-GEN intended-GEN target-GEN
      ‘the teacher’s achievement of the intended target’

In transformations of verb VFs, with the PAT in a prepositional case, the form of the PAT is usually preserved with N\_\_, while for the ACT, all possible forms are available. See (11a) and (11b); the variations of (11b) with GEN are not given explicitly here.

(11) a. *Překladatel* odkázal na původní verzi článku.
    translator-NOM refer-PST to original version-ACC article-GEN
    ‘A translator referred to the original version of the article.’

    b. *překladatelův* odkaz na původní verzi článku
      translator-ADJ.POSS reference to original version-ACC article-GEN
      ‘the translator's reference to the original version of the article’
With **verbs having more than two arguments**, some combinations of IPs block certain forms. Verbs without a passive voice block the instrumental form for the ACT of N\textsubscript{V}, see (12a) and (12b).\(^9\)

\[(12)\]

a. **Nepřátelé** bojují **s protivníky** o moc.
\textit{enemy-NOM.PL fight-PRS with rival-INS.PL for power}
\textit{The enemies fight with their rivals for power.}

b. **boj** nepřátel **s protivníky** o moc
\textit{fight-NOM enemy-GEN.PL with rival-INS.PL for power}
\textit{‘the fight of enemies with their rivals for power’}

Two variants of morphemic expressions of noun valency modifications are connected with the alternation between ADJ-POSS and GEN for the IPs; if the form of GEN occupies the ACT slot, this form cannot be used for the ADDR, though the source verb fills the ADDR slot with ACC (which is regularly converted into GEN with N\textsubscript{V}), see (13a) and (13b).

\[(13)\]

a. **Místní rozhlas** informoval občany o hrozbě povodní.
\textit{local radio-NOM inform-pst citizen-ACC.PL about danger-LOC flood-GEN}
\textit{‘A local radio informed the citizens about the danger of floods.’}

b. informace občanů o nebezpečí povodní místním rozhlasem
\textit{information-NOM citizen-GEN.PL about danger-LOC flood-GEN local radio-INS}
\textit{‘the informing of citizens about the danger of floods by the local radio’}

Two genitives are allowed with N\textsubscript{V}s whose source verbs have the GEN form for PAT. One of the genitive forms is preserved for the IP that is also expressed by the GEN in the source verb; the other IP is expressed by an accusative, as with the verb \textit{zbavit} ‘to get rid of’ with the VF: ACT(NOM), PAT(GEN), ADDR(ACC). The corresponding N\textsubscript{V} has the VF: ACT(INS), PAT(GEN), ADDR(GEN), see (14a) and (14b).

\[(14)\]

a. **Novela** zákona zlavila
\textit{amendment-NOM law-GEN relieve-pst}
\textit{parents-ACC responsibility-GEN}
\textit{Parents were relieved of responsibility by an amendment of a law.’}

---

\(^9\) The possessive adjective is blocked as well, but the source of blocking is different (plural form of the noun).
b. zbavení rodičů odpovědnosti
   relief-NOM parents-GEN responsibility-GEN
   novelou zákona
   novel-INS zákona law-GEN
   ‘relief of parental responsibility by an amendment of a law’

An instrumental form for an ACT is blocked in the transformation of the verbal VF that has the PAT in INS, as in vyhrožovat ‘to threaten’ with the VF: ACT(NOM), PAT(INS), ADDR(DAT), see (15a) and (15b).

(15) a. Věřitelé vyhrožují podnikateli exekucí.
   lender-NOM.PL threaten-PRS entrepreneur-DAT distraint-INS
   ‘Lenders threatened the entrepreneur that they would seize his property.’

b. výhrůžka exekucí podnikateli od věřitelů
   threat-NOM distress-INS entrepreneur-DAT from lender-GEN.PL
   ‘the threat to the entrepreneur of distress from (his) lenders’

6.1.2 Deverbal nouns derived by lexical derivation

The second group of deverbal nouns is represented by nouns derived by suffixes that contribute a specific semantic feature to the noun. Many Czech nouns belong to this class, but a great number also straddle the boundary between syntactic and lexical derivation. The analysis of the latter is the topic of Kolářová’s contribution to this volume. We present here only selected representatives of specific semantic classes illustrating the approach based on processes of word formation.

Nouns derived by an agentive suffix such as -tel, -eč, or -ce essentially absorb the ACT position, which is not – nor can it be – expressed by a separate lexical unit. Nouns such as uči-tel ‘teacher’, žada-tel ‘applicant’, and zástup-ce ‘representative’ have a PAT in their VFs as an obligatory or optional slot, while other agentive nouns as kup-ec ‘merchant’, kov-ář ‘black smith’, saz-eč ‘typesetter’, and naklada-tel ‘editor’ are not combined with PAT. Examples with an incorporated ACT (some of them combined with a PAT) are given in (16); in the last three examples the PAT is obligatory.

(16) soudní znalec / znalec písma
   court-ADJ expert expert handwriting-GEN
   ‘expert witness’/’handwriting expert’

   stánkový prodavač / prodavač vysavačů
   ‘stalls-ADJ seller salesman vacuum cleaners-GEN
   ‘street vendor’/’vacuum cleaner salesman’
In the following examples, it is the PAT which is absorbed by the word-formation process: \textit{dárek} ‘gift’ (an object gifted is a gift), see (17), \textit{výdaj} ‘expense’ (of money), \textit{výpis} ‘(bank) statement’, \textit{zápis} ‘record’ (of data). Such absorbed PATs do not appear on the surface at all.

In some cases, the other modifiers are absorbed in derived nouns (names of places, means, etc. see Kolářová 2010: 46f.), but the incorporated modifier does not have a valency feature, so they are not considered here.

6.2 Primary nouns

Modifications specific to nouns were studied by Pitha (1981). According to the criteria used for verb valency (see Section 2 above) the modifier \textit{Material} (often called partitive; MAT) was introduced as an inner participant, obligatory with some nouns (i), optional with others (ii):

i. \textit{část (pozemku)} ‘part (of the land)’, \textit{konec (filmu)} ‘end (of the movie)’, \textit{polovina} ‘half’, \textit{člen} ‘member’, \textit{skupina} ‘group’, \textit{odstavec} ‘section’;


Applying the “dialogue” test (see above Section 3) for the names of parts, groups, and similar notions in (i), we conclude that the speaker using them properly must have knowledge of the whole.
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Class (ii) includes the names of containers and similar nouns. With this class the modifier MAT is not obligatory, if these nouns are presented as the names of objects that can be counted, manipulated; or if they are used as measures (containers), they have MAT in their frames as an optional IP.

The modification APP(urrence), specific to nouns, was tested as to its valency character as well. As it is compatible with any noun, it belongs to the class of FMs; however, with some nouns with relational meaning, APP is semantically obligatory, as in bratr (mého otce) ‘(my father’s) brother’, předseda ‘chairman’, vlastnost ‘quality’. We can test the obligatoriness again by the dialogue test. Speaking about the election of a chairman, the speaker must know what he/she will chair.

The modifier ID(entity) belongs among the optional IPs of the listed head nouns. It can be expressed by a nominative, as in hotel Zvon ‘the hotel Bell’, lod Queen Mary ‘the ship Queen Mary’, or by a genitive: pojem čas-u ‘notion of time’.

6.3 Linguistic meaning or cognitive content?

Names of artifacts need special attention and perhaps special treatment as to their valency behavior. On the one hand, they express results (effects, in our terminology) of human activities. On the other, they denote some countable, relocatable objects (as do the names of containers). However, this is not a strong argument for regarding them as ambiguous, though their different usage influences their valency behavior. As the names of artifacts, they notionally have ACTs, and most of them have PATs. As to their formal expression of PATs, the names of artifacts constitute two classes: In class (i) the PAT is optional, expressed by the prepositional case o + LOC ‘about + LOC’, as with povídka ‘story’, básen ‘poem’, dopis ‘letter’, píseň ‘song’. In class (ii), the optional PAT is expressed by GEN or by ADJ-POSS, as with portrét ‘portrait’, fotografie ‘photo’, obraz ‘painting’, rukopis ‘manuscript’, and perhaps all names of buildings, parts of furniture, etc., understood as artifacts. ACTs in both classes are expressed by the same forms. Their VFs may look like (18):

\[
\text{(18) VF of (i): } \text{ACT (GEN / ADJ-POS / od + GEN)}^{\text{opt}}, \text{PAT (o + LOC)}^{\text{opt}}; \\
\text{VF of (ii): } \text{ACT (GEN / ADJ-POS / od + GEN)}^{\text{opt}}, \text{PAT (GEN / ADJ-POS)}^{\text{opt}}.
\]

The identity of the forms expressing the two participants is a source of many semantic interpretations. Moreover, the same form of GEN can also be used with the same heads for the free modification of APP. For example, the genitive in román L. N. Tolstého ‘novel by Leo Tolstoy’ is interpreted as an ACT, but in portrét L. N. Tolstého ‘portrait of Leo Tolstoy’ it is an optional PAT and in dopisy moji maminky ‘letters of my mother’ the genitive most probably represents an APP. The interpretation is here based on our knowledge of the world, the situation, or the context. See (19)–(22).
The correct interpretation of Tolstoy’s role in (19) is possible only if we know that he was a writer and that he is an ACT rather than a PAT in the first noun phrase in (19), while the PAT role is more probable for the second noun phrase in (19). For the interpretation of (20), even knowledge of the world will not help identify the proper meaning as to who is the ACTor and who is the PATient in both (a) and (b) (since both participants were painters and friends). The situation is complicated by the meaning of Possessor (APP) of the participating forms (ADJ-POSS and GEN), which we did not reflect in the description of the forms in (19)–(22). Similarly, knowledge of the famous architect (known not only for his buildings, but also for his furniture and paintings) and the lesser-known antique dealer is of no help for the relevant interpretation of (21). Possession plays a role here. A family story is perhaps behind the content of (22), but it is difficult to come up with an appropriate interpretation.

To sum up our attempt to answer the question formulated as the title of this section we can conclude that both ADJ-POSS and a noun in GEN in the
constructions studied in this section are vague rather than ambiguous, so that they are all marked with the relatively vague label APP. A detailed analysis of the form of the prepositional phrase \( od + \text{GEN} \) ‘from’ occurring in (21) and (22) is still lacking. In some patterns, this form fits the ACT slot (e.g. in (22a)–(22b)), but the meaning of origin (ORIG) is available as well. The ORIG assignment with nouns denoting human beings offers a more open interpretation than ACT: an ORIG could be understood as an ACT as well as a mediatory person who is actively participating in the situation described, but is not its real actor.

### 6.4 Conclusions on noun valency

To conclude our discussion, the following statements can be made:

1. The same list of modifications used for verbs is applicable for nouns. It is enriched by three special noun modifications participating in their valency frames (MAT, APP, ID).
2. The “dialogue” test appears to be a useful tool for determining the semantic obligatoriness of nouns as well as of verbs.
3. The principles of shifting do not seem to be applicable or useful for nouns. (There are nouns having PAT in their VF even though ACT is absent.)

### 7. Future perspectives for studies of noun valency

Though in the last decades noun valency has become an attractive domain of the linguistic study of particular languages as well as of general linguistic studies, some issues remain open:

i. To compile and publish noun valency dictionaries for languages that do not yet have any, which appears to be a realistic task.

ii. To specify a boundary between noun valency frames that could be transformed by a set of simple rules from those inherited from their respective sources. By means of such a transformation, many noun VFs can be achieved without great effort.

iii. Though determining the conditions for the surface deletion of obligatory valency members belongs to the domain of grammatical studies, it is also a great challenge for text studies.

The list of issues given here is certainly not exhaustive for the future development of noun valency studies. However, these issues appear to be both topical and interesting.
Acknowledgments

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### Appendix 1. Inner participants of verbs in PDT 2.0

<table>
<thead>
<tr>
<th>IP’s total</th>
<th>Participants expressed on the surface</th>
<th>Participants generalized</th>
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</thead>
<tbody>
<tr>
<td>ACT(or)</td>
<td>87,111</td>
<td>74,280</td>
</tr>
<tr>
<td>PAT(piant)</td>
<td>68,185</td>
<td>65,211</td>
</tr>
<tr>
<td>ADDR(essee)</td>
<td>10,150</td>
<td>5,211</td>
</tr>
<tr>
<td>EFF(ect)</td>
<td>7,208</td>
<td>6,980</td>
</tr>
<tr>
<td>ORIG(in)</td>
<td>849</td>
<td>766</td>
</tr>
</tbody>
</table>

### Appendix 2. Inner participants of nouns (with functions corresponding the IP of verbs) in PDT 2.0

<table>
<thead>
<tr>
<th>IP’s total</th>
<th>Participants expressed on the surface</th>
<th>Participants generalized</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT(or)</td>
<td>20,786</td>
<td>9,689</td>
</tr>
<tr>
<td>PAT(piant)</td>
<td>25,705</td>
<td>22,011</td>
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<tr>
<td>ADDR(essee)</td>
<td>2,172</td>
<td>963</td>
</tr>
<tr>
<td>EFF(ect)</td>
<td>340</td>
<td>284</td>
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<tr>
<td>ORIG(in)</td>
<td>248</td>
<td>240</td>
</tr>
</tbody>
</table>
CHAPTER 2

Special valency behavior of Czech deverbal nouns*

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This chapter provides an in-depth analysis of the valency properties of Czech deverbal nouns. It focuses on the forms of complementation they take. These can be typical, related to those of the source verbs, or special, without any relationship to them. We present an overview of these special shifts in valency. Special forms of participants have an impact on the syntactic behavior of the noun and its meaning. We argue that it is not always a plain shift in meaning but sometimes only a slight meaning nuance. Such nouns with special forms of participants require creating a new valency frame; they represent a separate category on the boundary between syntactic and lexical derivation.

1. Introduction

1.1 Aims and objectives

Czech deverbal nouns can exhibit multiple forms of valency complementation (participants); for example, *lov* ‘a hunt’: *lov velryb* ‘hunt of whales’ with a Patient encoded in the genitive which represents a typical form of adnominal complementation, inherited from the source verb, and *lov na velryby* with a prepositional phrase (‘hunt for whales’, i.e. ‘whales hunt’), which is an atypical, special form of complementation, with no relationship to the form of the corresponding complementation of the source verb. This study aims at a description of the special valency behavior of Czech deverbal nouns, focusing on the special forms of the participants and their influence on the meaning of the nouns involved. From a

* I would like to thank Olga Spevak, the editor of the present publication, and two anonymous reviewers for many stimulating remarks and comments.
theoretical point of view, such a description is important for better understanding the relationship between verbal and nominal valency. Moreover, as a practical application of a theory, the description of the special valency behavior of nouns is also of great importance to the lexicographic treatment of noun valency.

The crucial issue addressed in this chapter is whether two different forms of a participant represent mere variants that can be captured in one valency frame, or whether there are reasons for splitting them into two different valency frames. In case two different valency frames are recognized, the question arises as to whether these two different valency frames correspond to two different meanings of the noun.

We try to show that a special form of a participant does not automatically imply a change in the meaning of a deverbal noun. On the other hand, we argue that a participant in a special form cannot co-occur with the same set of forms of other participants from one valency frame as typical forms. Such difference in the syntactic behavior of a deverbal noun has a certain impact on its meaning, even if it is only a slight nuance. Consequently, we propose creating a special valency frame in the valency lexicon.

We suggest that nouns with a participant in a special form that have meanings similar to those of nouns with participants in a typical form but that exhibit different syntactic behavior should be classified as a transitional category, namely as nouns on the boundary between syntactic and lexical derivation.

1.2 Methods

Several syntactic tests are used, making it possible to describe the differences not only between the forms of a participant but also between the syntactic behavior of a noun modified by a participant in a typical form and the syntactic behavior of the same noun modified by that participant in a special form. Our hypothesis is that a participant in a special form cannot combine with the same set of forms of other participants from the valency frame as the same participant in a typical form. The tests that were used are:

- possibility of expressing an agent (Actor) in the prepositionless instrumental case;
- combination with adjectives that specify the content of a noun with respect to time and iteration (adjectives such as ‘frequent’, ‘repeated’, ‘constant’, ‘occasional’, and ‘everyday’);
- combination with adverbs such as předem ‘in advance’.

When describing the valency behavior of Czech deverbal nouns, we take advantage of our experience in the annotation of nominal valency in the Prague Dependency Treebank (PDT), cf. Mikulová et al. (2006), and in its valency lexicon,
which is called PDT-Vallex (Hajič et al. 2003). The detailed analysis and the examples of special valency behavior presented in this chapter are based on the data from five morphologically annotated subcorpora of the Czech National Corpus (CNC, Český národní korpus), namely SYN2000, SYN2005, SYN2006PUB, SYN2009PUB, and SYN2010. For the analysis, syntactically and semantically compact groups of nouns (ca. 140 lemmas) were selected; the selection of nouns, the search methods, and the frequency data concerning the particular observed phenomena are described in Kolářová (2006) and Kolářová (2010).

1.3 General framework of Functional Generative Description

Our approach to deverbal nouns is based on the theory of valency (especially the valency of verbs) developed in the framework of Functional Generative Description (FGD) by Panevová (1974 and 1975) and Sgall, Hajičová & Panevová (1986).

The valency frames of verbs, which are presumably stored in the (mental) lexicon, are reflected in the tectogrammatical representation of sentences in FGD. The following types of complementation (i.e. the individual dependency relations) are able to fill the individual slots of the valency frames of verbs:

- inner participants or arguments that can be obligatory or optional: \(1\) Actor (ACT), Patient (PAT), Addressee (ADDR), Effect (EFF), Origin (ORIG);
- obligatory free modifications or adjuncts, especially those with the meanings of direction (e.g. \(přijet někam.DIR3\) ‘to arrive somewhere’), location (e.g. \(přebývat někde.LOC\) ‘to dwell somewhere’), and manner (e.g. \(chovat se dobře.\) MANN ‘to behave well’).

Within the concept of nominal valency in the FGD framework (Pňha 1984 and Panevová 2002), the meaning of a given noun is the most important factor in determining its valency frames. According to Kuryłowicz (1936), two basic types of word-formation, lexical derivation and syntactic derivation, can be distinguished. In syntactic derivation, only the syntactic function of the derived word differs from that of the source word; for example, \(uplynout\) ‘to expire’ – \(uplnutí\) ‘expiration’, \(ostrý\) ‘sharp’ – \(ostrost\) ‘sharpness’, \(dobrý\) ‘good’ – \(dobře\) ‘well’. In lexical derivation, not only the syntactic function but also the lexical meaning of the derived word differs: concerning deverbal nouns, these do not denote an action or

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1. This point is discussed in more detail in Panevová, this volume. For definitions of arguments see Mikulová et al. (2006: 460–479).

2. The following labels (so-called functors) are used for particular sub-meanings of direction: DIR3 (where), DIR2 (which way), DIR1 (from where).
a state but for example a physical entity such as a thing (ukazovat ‘to point’ – ukazovátko ‘pointer’) or a person (učit ‘to teach’ – učitel ‘teacher’). This distinction is useful for the description of the valency of deverbal nouns. From this perspective, our approach to the valency of deverbal nouns focuses on three groups of nouns that represent the most dominant stages in the process of substantivization:

i. Nouns derived from verbs by syntactic derivation. Their meaning is parallel to the meaning of their source verbs in that they denote an action (vyrábění/ vyrobení ‘manufacturing’ // výroba ‘production’) or a state (vyskytování sel/vyskytnutí se ‘occurring’ // výskyt ‘occurrence’); the forms of their participants are typical.

ii. Nouns on the boundary between syntactic and lexical derivation. The meaning of these nouns is slightly different from the meaning of action or state nouns; however, the nouns belonging to this category, such as pochvala ‘praise’, are still abstract nouns; the forms of their participants can be either typical or special.

iii. Nouns derived by lexical derivation. This category includes nouns whose meaning is unmistakably different from the meaning of action or state nouns; it is represented by names of physical entities related to actions (semantically concrete nouns) such as actor nouns (učitel ‘teacher’), nouns denoting a thing (dodávka ‘van’, otvírák ‘opener’) or nouns denoting a place (stoupání ‘slope’, východ ‘exit’, čekárna ‘waiting room’); forms of their participants can be either typical or special.

There are two basic types of Czech deverbal nouns that in one of their meanings can sometimes denote an action or a state and so can belong to group (i), namely nouns derived by syntactic derivation: nouns derived from verbs by productive means, by suffixes -(e)ní/tí, as in honění ‘hunting’ or hubnutí ‘losing weight’ (cf. Dvořák, this volume); and nouns derived from verbs by non-productive means or by zero suffix, such as honba ‘hunt’, hon ‘hunt’. These two types of nouns are at the center of attention in this study since they can often exhibit both typical and special valency behavior.

1.4 Treatment of deverbal nouns in Czech valency lexicons

There are two valency dictionaries that in addition to the valency of verbs and adjectives also capture the valency of Czech nouns, namely a printed valency dictionary

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3. We use the term “nouns denoting an action” in a broader sense, for all non-stative nouns, also subsuming accomplishments and achievements (Dowty 1979).
prepared by Svozilová, Prouzová and Jirsová (2005) and an electronic valency dictionary built during a tectogrammatical annotation of the Prague Dependency Treebank (PDT), called PDT-Vallex (Hajič et al. 2003; Urešová 2011a).

The lexicon compiled by Svozilová, Prouzová and Jirsová (2005) presents a traditional way of capturing noun valency by giving only examples of particular complementation, regardless of possible combinations with other types of complementation expressed by various forms, such as lov na medvěda ‘hunt for bear’, i.e. ‘bear hunt’, lov ryb ‘hunt of fish’, i.e. ‘fishing’ (Svozilová, Prouzová & Jirsová 2005: 130).

In contrast, in the PDT-Vallex, the core valency information is encoded in valency frames in which the possible combinations of complementation expressed by various forms are taken into account. The PDT-Vallex valency entry contains a lexeme (represented in PDT by the “tectogrammatical lemma”) and its valency frame(s). As for verbs, the authors suppose that one valency frame corresponds prototypically to one meaning (sense) of a verb. Although the PDT-Vallex does not explicitly work with the term lexical unit, a meaning of a word (i.e. a verb, a noun, or an adjective) with its particular valency frame corresponds to a lexical unit, understood roughly as ‘a given word in a given sense’ (Cruse 1986).

Concerning nouns, the PDT-Vallex contains 3727 entries. So far, special attention has been paid first to capturing the valency properties of nouns derived from verbs by productive means, such as the noun balení ‘pack(ing)’, and second to nouns occurring as nominal components in “support verb” constructions such as the noun nabídka ‘offer’ in učinit nabídku ‘to make an offer’. The delimitation of boundaries between particular meanings of a noun is one of the most difficult tasks in nominal valency annotation and consequently in the treatment of the valency properties of the nouns in the valency lexicon. For example, in the PDT-Vallex the noun (lexeme) balení ‘pack(ing)’ is represented by three valency frames corresponding to three meanings of the noun, see (1)–(3). Different meanings can sometimes be distinguished by different types or forms of complementation. In (1), we encounter the semantic roles of ACT(or) and PAT(ient), optionally also EFF(ect); in (2), MAT(erial). The valency frame in (3) is empty.

(1) balení, ‘the process of packing’: ACT(GEN, INS, POSS) PAT(GEN, POSS) EFF opt (na ‘on’ + ACC, …) balení dáreků.PAT rodiči.ACT ‘packing gifts by parents’

4. For further details and more complicated cases see Urešová (2011b:39). For the treatment of the relationship between a valency frame and a meaning of a verb in another valency lexicon of Czech verbs, the so-called VALLEX, see Lopatková, Žabokrtský & Kettnerová (2008:16–17).
2. General principles determining the surface forms of participants

Before discussing the valency behavior of Czech deverbal nouns, it is worth mentioning some general points. Czech is a highly inflectional language. Following Karlík (2000:183), a distinction between structural cases (nominative and accusative) and non-structural cases (genitive, dative, locative, and instrumental) is useful for a description of verbal valency. A similar distinction turns out to be important in the nominal domain as well.

The primary general principle (Karlík 2000:184) is as follows: within the process of nominalization, the forms of verbal structural cases change whereas the non-structural ones stay the same. This primary general principle explains the typical shifts in the surface forms of participants and makes it possible to describe the valency behavior of most Czech deverbal nouns.

Secondary general principles involve various special shifts in the surface forms of participants; we formulate these principles as follows:

1. A verbal structural or non-structural case changes to a semantically more distinct (or less ambiguous) non-structural adnominal case, especially a non-prepositional dative and a prepositional phrase.
2. Verbal non-structural case changes to the standard form of adnominal modification, a non-prepositional genitive, or a possessive adjective/pronoun.

3. In general, the number of possible expressions of nominal modification is higher than the number of corresponding verbal ones. Nominal complementation referring to an individual or an object expressed primarily by a noun typically combines a non-prepositional case and a prepositional phrase. Nominal complementation referring to a proposition can combine up to four forms, namely a content clause (CC), an infinitive (INF), a non-prepositional genitive (GEN), and a prepositional phrase (PP), although the corresponding participants of their source verbs allow only three of them; for further details see Kolářová (2010: 63–74).

3. Typical valency behavior and typical shifts in the surface forms of participants

The valency behavior referred to as typical can be observed with the nouns derived by syntactic derivation (group (i) in Section 1.3). This group includes mainly productively derived nouns, but sometimes non-productively derived nouns as well. The meaning of these nouns (or one of its meanings, if there are several) is parallel to the meaning of their source verbs in that they denote an action or a state, on a par with their source verb.

When determining the valency frames of deverbal nouns denoting an action or a state, the same complementation as with verbs is envisaged. These nouns are expected to inherit all participants that are present in the valency frame of their source verbs, including the “verbal” character of the participants such as Actor, Patient, and Addressee (unlike the nouns with special nominal valency complementation described in Section 4.4).

However, the forms of the participants in a noun phrase undergo some regular shifts that can be described in terms of rules. These rules have been discussed by many authors, e.g. Šmilauer (1966: 172), Novotný (1980), Panevová (2002: 30–32), and Kolářová (2010: 54–56). The rules presented here follow the overview formulated by Karlík & Nübler (1998: 107–111), with additional remarks by other authors.

Rule (A): A valency slot using the nominative in an active or passive verbal construction changes within the process of nominalization to a valency slot using the genitive, see (4)–(6).

(4) (náš) Petr piše → psání (našeho) Petra (our) Peter-NOM writes writing-NOM (our-GEN) Peter-GEN ‘(our) Peter writes → writing of (our) Peter’
Rule (B): Complementation expressed in a verbal construction by a noun (phrase) or a content clause that is neither a subject in the nominative nor an object in the non-prepositional accusative does not change its form in nominalization, see (7)–(10).

(7) žák naslouchá učiteli pupil-NOM listens-PRS teacher-DAT 'The pupil listens to the teacher.'

→ naslouchání žáka učiteli listening pupil-GEN teacher-DAT.SG 'listening of the pupil to the teacher'

(8) touží po tom, aby vyhrál / vyhrát / po výhře long-PRS.3SG for it to-CONJ win-PST win-INF for victory-LOC 'He desires to win / he longs for victory.'

→ touha po tom, aby vyhrál / vyhrát / po výhře desire for it to-CONJ win-PST win-INF for victory-LOC 'desire to win/for victory'

(9) vnikl do pokoje → vniknutí do pokoje enter-PST.3SG into room entering into room 'He entered the room → entering the room'

(10) Pacient byl ošetřen lékařem / od lékaře. patient was treated doctor-INST / from doctor-GEN 'The patient was treated by a doctor.'

→ ošetření pacienta lékařem / od lékaře treating patient-GEN doctor-INST from doctor-GEN 'treating of the patient by a doctor'

5. The ACC (dopis) in an active verbal construction psát dopis 'to write a letter' corresponds to the GEN (dopisu) in the nominalized construction psaní dopisu 'writing of the letter', which can be understood as the typical shift ACC → GEN.
Rule (C): In the nominalization of a verbal construction where one valency slot has a nominative and the other a non-prepositional accusative, only one of the participants can change to a non-prepositional genitive, see (11).6

(11) Náš Petr píše dopis.
    'Our Peter writes a letter.'
    \[ \rightarrow \text{psaní našeho Petra / psaní dopisu} \]
    writing-NOM our Peter-GEN.SG writing-NOM letter-GEN.SG
    'writing of our Peter/writing of the letter'
    \[ \rightarrow *\text{psaní našeho Petra dopisu} \]
    writing-NOM our-GEN.SG Peter-GEN.SG letter-GEN.SG
    'writing of our Peter of the letter'

In Czech, a nominal construction with two participants in the non-prepositional genitive is possible only when one of them is also in the genitive in the source verbal construction, as in (12); according to rule (B), such a valency slot does not change its form.

(12) Zbavil ženu starostí.
    'He relieved the woman of worries.'
    \[ \rightarrow \text{zbavení ženy starostí} \]
    relieving woman-GEN worry-GEN.PL
    'relieving the woman of worries'

Rule (D): All the valency slots of a source verbal construction may be deleted in the corresponding nominal construction; this means that they need not be expressed on the surface at all (see Panevová, this volume). However, most nouns productively derived from perfective transitive verbs need to have an overt complement if none is known from the previous discourse (see Dvořák, this volume).

Rule (E): Adverbs convert to adjectives, as in (13). Sometimes adverbs can be kept, especially when an adjective cannot be derived from the adverb, see (14).

(13) píše rychle \[ \rightarrow \text{rychlé psaní} \]
    he writes quickly \[ \rightarrow \text{quick writing} \]

6. The second participant (not changing into a genitive) either takes another typical form, e.g. psaní dopisu naším Petrem 'writing of the letter by our Peter', or is deleted. However, a combination of PAT expressed by a possessive adjective or pronoun and ACT in the postnominal genitive is not possible, e.g. *pacientovo.PAT ošetření lékaře.ACT 'patient's treatment of the doctor', see Panevová, this volume. The second participant of nouns that allow specific shifts in the surface forms of their participants (Section 4.1) can also take a specific form, e.g. obdiv diváků k hercům 'admiration of the audience for actors'.
Rule (F): Subject to certain conditions, an adnominal genitive can alternate with a possessive adjective (ADJ<sub>Poss</sub>) or a possessive pronoun (PRON<sub>Poss</sub>), as in (15).

(15) psání Petra / Petrovo psání / jeho psání
writing Peter-GEN.SG Peter-ADJ.Poss writing his-PRON.Poss writing 'writing of Peter/Peter’s writing/his writing’

In this chapter, the formal changes reflecting the above rules from the perspective of active verbal constructions are called “typical shifts in the surface forms of participants”; these typical shifts are schematically captured in Figure 1.

As the genitive form can be the result of different shifts (i.e. both NOM → GEN and ACC → GEN, and also the correspondence GEN → GEN), in some nominal constructions syntactic ambiguity can occur, e.g. střílení vojáků ‘shooting of the soldiers’, where the genitive can indeed correspond either to the Actor or to the Patient.

Surface forms of participants of verbs

Surface forms of participants of nouns

Figure 1. Typical shifts in surface forms of participants

4. Special valency behavior

Every manifestation of valency behavior different from the typical one presented in Section 3 is treated here as a special valency behavior. The manifestation of special valency behavior concerns two basic issues: changes in the meaning of a noun, discussed in Sections 6 and 7, and properties of valency complementation

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7. However, in certain cases the specific behavior is “typical” for some groups or types of nouns; for example, the specifically nominal complementation in partitive genitives is typical for nouns that denote a container (Section 4.4).
Chapter 2. Special valency behavior of Czech deverbal nouns

of a noun. The latter involves three phenomena: special forms of valency complementation (Section 4.1), reduction of the number of slots in the valency frame of a noun (Section 4.3), and change of the character of valency complementation (Section 4.4). The issue of special word order within a nominalized structure (cf. Kolářová 2010: 83) is left out in this chapter. Various factors influencing the manifestation of special valency behavior are summarized in Section 8.

4.1 Special shifts in surface forms of participants

The form of a participant does not always undergo typical shifts (Section 3), but some special shifts can be recognized alongside the typical ones. The term “special shift” covers the situation when the form of an adnominal participant differs from the form of the corresponding verbal participant and, at the same time, the new form does not correspond to any of the typical shifts.

Special shifts frequently occur with nouns derived from verbs by non-productive means; however, they can also occasionally occur with nouns derived by productive means. Special forms sometimes coexist with typical forms (Section 4.2) but the following overview describes only the special forms. The impact of special shifts on the meaning of the noun is discussed in Section 6.

A full overview of special shifts in the surface forms of participants is given by Kolářová (2010: 60–73).8 The special shifts can be divided into several categories. First, we distinguish special shifts of participants that modify action nouns and nouns on the boundary between syntactic and lexical derivation from those that modify nouns with an incorporated participant.

Participants of action-denoting nouns and nouns on the boundary between syntactic and lexical derivation undergo special shifts that can be classified according to the participant’s meaning, which determines its primary form: the participant can refer to an individual or an object, expressed primarily by a noun; or to a proposition, expressed primarily by a content clause.

Special shifts of participants expressed primarily by a noun are exemplified in (16)–(21). These participants take the special form of a prepositional phrase, dative case, or genitive case.

- ACC \rightarrow PP

(16) \textit{obdivovat herce} \rightarrow \textit{obdiv k hercům}
to admire \text{actor-ACC.PL} admiration to \text{actor-DAT.PL}
‘to admire actors → admiration for actors’

8. We provide lists of nouns that can be modified by a participant in the form corresponding to a specific shift and document them by examples that occur in the subcorpora of CNC; selected specific shifts are also supported with statistical data.
The special shifts of participants expressed primarily by a noun are schematically captured in Figure 2 by solid arrows, whereas typical shifts are marked by dashed arrows.

Surface forms of participants of verbs

<table>
<thead>
<tr>
<th>NOM</th>
<th>GEN</th>
<th>DAT</th>
<th>ACC</th>
<th>LOC</th>
<th>INS</th>
<th>PP</th>
<th>INF</th>
<th>CC</th>
<th>ADV</th>
</tr>
</thead>
<tbody>
<tr>
<td>POSS</td>
<td>GEN</td>
<td>DAT</td>
<td>ACC</td>
<td>LOC</td>
<td>INS</td>
<td>PP</td>
<td>INF</td>
<td>CC</td>
<td>ADV</td>
</tr>
</tbody>
</table>

Surface forms of participants of nouns

Figure 2. Special shifts of participants expressed primarily by a noun

Special shifts of a participant expressed primarily by a *content clause* are given in (22)–(25). The participant takes the special form of a prepositional phrase, genitive case, infinitive, or a content clause. We assume the participant is
a participant in a propositional character (PPC)\(^9\) even if it is expressed by a noun or a prepositional phrase.

- PPC → PPC(PP)

\[(22) \text{ Nabídl Janovi, aby spolupracoval / spolupracovat / offered Jan-DAT to-CONJ cooperate-PST cooperate-INF } \]
\[\text{spolupráci. } \rightarrow \text{ nabídka (Janovi), aby spolupracoval / cooperation-ACC offer (Jan-DAT) to-CONJ cooperate-PST } \]
\[\text{spolupracovat / spolupráce / na spolupráci / cooperate-INF cooperation-GEN on cooperation-ACC } \]
\[\text{ke spolupráci to cooperation-DAT } \]
\[\text{'He offered Jan to cooperate/cooperation. } \rightarrow \text{ offer to cooperate/ of cooperation to Jan' } \]

- PPC → PPC(GEN)

\[(23) \text{ Navykl si, že kouří / kouřit / na kouření. } \rightarrow \text{ návyk, got_used refl that smokes smoke-INF to smoking-ACC habit } \]
\[\text{že kouří / kouřit / kouření / na kouření that smokes smoke-INF smoking-GEN to smoking-ACC } \]
\[\text{'He got used to smoking. } \rightarrow \text{ the habit of smoking' } \]

- PPC → PPC(INF)

\[(24) \text{ Ne-nadál se, že se dožije…/ dožítí… neg-hope-PST refl that refl lives_until living_until-GEN } \]
\[\text{→ naděje, že se dožije…/ dožít se…/ hope that refl lives_until live_until-INF refl } \]
\[\text{dožití…/ na dožití… living_until-GEN for living_until-ACC } \]
\[\text{'He did not expect that he would live until… } \rightarrow \text{ the hope that he would live until…/to live until…' } \]

---

9. This participant is in most cases marked by the functor PAT but sometimes it can be marked by the functor EFF. The functor EFF is used when a noun modified by PPC is derived from a verb of communication that undergoes splitting of the “theme” (what is being talked about) and “dictum” (what is being said about it); the characteristic feature of these constructions lies in the fact that one of their participants – participant “message” – occupies two valency slots (the “theme” is marked by the functor PAT, the “dictum” is marked by the functor EFF, e.g. vyprávění o babičce.PAT, že byla.EFF pracovitá ‘talking about the grandmother that she was hardworking’, see Kettnerová 2009).
- PPC → PPC(CC)

(25) Odvážil se skočit / skoku / ke skoku. → odvaha,
    dare-pst refl jump-inf jump-gen to jump-dat courage
    aby skočil / skočit / skoku / ke skoku
    to-conj jump-pst jump-inf jump-gen to jump-dat

‘He dared to jump. → courage to jump’

We assume that the verbal counterpart of a special adnominal form is PPC as a whole, with all its surface forms. This assumption is schematically captured in Figure 3 by the framed box containing all potential verbal forms of PPC. Typical shifts are marked by dashed arrows. Figure 3 captures only the most frequent special shift of PPC, i.e. the shift PPC → PPC(PP); for the diagrams of other special shifts of PPC see Kolářová (2010: 68–69).

Verbal surface forms of PPC

Nouns with an incorporated participant, for example, actor nouns (cf. Section 4.3, paragraph ii), are derived by lexical derivation and represent a special category. Since the “genitive” position left by the incorporated participant is free, another participant takes either this form or the alternative form of a possessive adjective or a possessive pronoun. These nouns are exemplified in (26)–(28).

- DAT → GEN / ADJ_{POSS}/PRON_{POSS}

(26) dluží bance → dlužník banky
    owes-prs bank-dat debtor bank-gen
    ‘he owes to a bank → debtor of a bank’

(27) (po)radí prezidentovi → poradce prezidenta /
    advises-prs president-dat adviser president-gen
presidentův poradce / jeho poradce
‘he advises the president → the adviser of a president/president’s adviser/
his adviser’

- PP → GEN / ADJPOSS/PRONPOSS

(28) spolupracuje s Petrem → spolupracovník Petra /
collaborates-prs with Peter collaborator Peter-GEN
Petrův / jeho spolupracovník
Peter-ADJ.POSS PRON.POSS collaborator
‘he collaborates with Peter → collaborator of Peter/Peter’s collaborator/
his collaborator’

The special shifts of participants that modify nouns with an incorporated participant are schematically captured in Figure 4 by solid arrows, whereas typical shifts are marked by dashed arrows.

Surface forms of participants of verbs

Surface forms of participants of nouns

Figure 4. Special shifts: nouns with an incorporated participant

4.2 Coexistence of typical and special forms of one participant

Nominal participants can take various grammatically correct forms corresponding to both typical and special shifts. However, the two types of shift are not used to the same extent. The coexistence of the typical and special forms of one participant with respect to their frequency in the CNC subcorpora is captured in Table 1. In situation A, the two forms have similar frequency, e.g. varování řidičů. ADDR ‘warning of drivers’ versus varování řidičům.ADDR ‘warning addressed to drivers’. In situations B and C, one of the forms is preferred over the other, which is less frequent or rare though still possible. In situation B, the special form is less
frequent: lov velryb ‘hunt of whales’ versus less common lov na velryby ‘hunt for whales’, see (75)–(76). In situation C, the typical form is less frequent or rare, e.g. Patient in the genitive with the nouns like dotyk ‘touch’ and obdiv ‘admiration’: dotyk míče. PAT ‘touch of the ball’ versus more common dotyk s míčem ‘touch/being in contact with the ball’, see (80)–(82); obdiv interiéru ‘admiration of the decoration of the room’, but obdiv ?herců. PAT ‘admiration of actors’ versus more common obdiv k hercům ‘admiration toward actors’. Interestingly, there are also isolated cases (situation D) where the form corresponding to a typical shift is ungrammatical and the only attested form corresponds to special shifts, e.g. spolupracovník Petra ‘collaborator of Peter’/*spolupracovník s Petrem ‘collaborator with Peter’, see (28); otázka kamarádovi ‘question addressed to the friend’/otázka na kamaráda ‘question at the friend’/*otázka kamaráda.ADDR ‘question of the friend’, see (86); or obava z následků ‘fear from consequences’/*obava následků ‘fear of consequences’, see (95). The opposite situation E, in which only the forms corresponding to typical shifts are grammatical, is very frequent; for example, Patients modifying nouns of exchange preserve the typical postnominal genitive form and do not normally allow a special form, cf. vydávání/výdej jídla ‘handing out/distribution of meals’.

It should be noted that it is not always possible to combine the form corresponding to a special shift with certain forms of other participants (for further details see Sections 6.2 and 7).

Table 1. Coexistence of typical and special forms of one participant

<table>
<thead>
<tr>
<th>Situation</th>
<th>Grammatical form</th>
<th>Ungrammatical form</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Typical form and special form have similar frequency – –</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Typical form     Special form –</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Special form     Typical form –</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Special form     – Typical form</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Typical form     – Special form</td>
<td></td>
</tr>
</tbody>
</table>

4.3 Reduction of the number of slots in the nominal valency frame

Two types of reduction of the number of slots in the valency frame of a noun can be distinguished: (i) simple (pure) reduction, (ii) incorporation of a participant.
(i) Simple (pure) reduction. The first case is the situation when a participant simply disappears from the valency frame. For example, the non-productively derived noun *dutovtip* ‘ingenuity’ does not allow modification by Patient in any form, unlike its source (reflexive) verb *dovtípit* se ‘to infer’ and its productively derived counterpart *dovtípení* se ‘inferring’, see (29).

```
(29) a. dovtípit se něčeho.PAT
    infer-INF refl sth-gen.sg
    ‘to infer something’

b. dovtípení se něčeho.PAT
    inferring-nom.sg refl sth-gen.sg
    ‘inferring of something’

c. *dutovtip něčeho.PAT
    ingenuity-nom.sg sth-nom.sg
    ‘ingenuity of something’
```

In the case of some polyvalent nouns undergoing changes in their meaning, the participants that are defined on the basis of their semantic rather than their syntactic properties (esp. ADDR and EFF) tend to disappear from the valency frame of the noun. In contrast, Patient which is also defined syntactically, is often kept. In (30) the noun *návrh* ‘suggestion/proposal’ is modified by all three participants inherited from the source verb of communication (PAT of this noun of communication is the participant having a propositional character, so it can be expressed by a content clause (CC)). However, when the noun *návrh* ‘proposal’ instead denotes a piece of text, e.g. a draft or a bill, ADDR tends to disappear, as in (31).

```
(30) návrh vlády.ACT soudu.ADDR, aby… CC.PAT
    suggestion government-gen.sg court-dat.sg to-conj
    ‘suggestion made by the government addressed to the court to...’

(31) návrh zákona.PAT ke schválení
    proposal-nom.sg law-gen.sg for approval
    ‘proposal of a law for approval’
```

(ii) Incorporation of a participant. Sometimes the semantics of a certain participant (esp. ACT or PAT) which is part of the valency frame of the source verb is incorporated into the meaning of the derived noun. As a result, in the valency frames of nouns with an incorporated participant, the incorporated valency slot is eliminated (absorbed) and cannot be expressed (see Panevová, this volume). For example, actor nouns incorporate agents, compare (32) with (33).

```
(32) Někdo.ACT uči matematiku.PAT
    somebody-nom.sg teach-3sg.prs mathematics-acc.sg
    ‘Somebody teaches mathematics.’
```
According to our hypothesis, any type of reduction of the number of slots implies a change in the meaning of the noun (see also Karlík & Nübler 1998: 106).

4.4 Specifically nominal valency complementation

Some deverbal nouns undergo further changes in their meaning, and then the nouns can behave similarly to the non-deverbal nouns in that the character of their valency complementation changes from inherited “verbal” participants to specifically nominal complementation.

Two types of specifically nominal valency complementation, Partitive and Appurtenance, were elaborated by Piťha (1984: 236). Partitive (or MAT(erial)) is an inner participant modifying nouns that denote a container, e.g. skupina lidí. MAT ‘a group of people’. APP(urtenance) is a free modification expressing mere relation to a person or a thing, e.g. organizace neslyšících.APP ‘organization of the hearing-impaired’, or expressing possession, e.g. Petrovo.APP auto ‘Peter’s car’; with some nouns this modification is obligatory and belongs to their valency frame, e.g. otec dítěte.APP ‘father of the child’.

These special types of complementation, elaborated primarily for non-deverbal nouns, can also be found with deverbal nouns undergoing changes in their meaning. For example, in the case of nouns that in addition to an action or a state can denote a container, an inner verbal participant, usually PAT, changes to the inner nominal participant MAT. In (34) the imperfective noun balení ‘wrapping’ denotes an action but in (35) the same noun denotes a container and takes a MAT.

(34) balení másla.PAT do obalu brigádníky.ACT
    wrapping butter-GEN.SG into cover-GEN.SG volunteer-INS.PL
    ‘wrapping of butter into a wrap by volunteers’

(35) jedno balení másla.MAT
    one-NOM.SG package-NOM.SG butter-GEN.SG
    ‘one package of butter’

In addition, modification in the special form of the prepositional phrase o ‘about’ + LOC with the meaning “concerning/about something” (marked for the time being by the functor PAT in the PDT and the PDT-Vallex) can indicate a semantic shift. This modification is probably used by analogy to the so-called “theme” which modifies nouns derived from some verbs of communication, e.g. vyprávění o té době ‘talking about that period’ (cf. Section 4.1, Footnote 9). However, this modification can sometimes be used with nouns that are derived from verbs that do not have such a modification in their valency frame, as in vzkaz o telefonátu
'message about a phone call'. We assume that the presence of this modification signals a subtle change in the meaning of the noun (an action → an abstract result of an action), see (64)–(65) and Kolářová (2010: 154–155).

5. Different meanings of a deverbal noun

There is a close relationship between changes in the meaning of a noun and the special properties of its valency complementation. The meaning of nouns manifesting special valency behavior (i.e. special forms of valency complementation, reduction of the number of slots in the valency frame of a noun, or a change in valency complementation character, see Section 4) is expected to be different from the meaning of the verbs these nouns are derived from; the nouns are expected at least not to denote an action or a state as their source verbs do.

The differences in meaning of deverbal nouns are typically described in the literature as the difference between event and result nominals, see Grimshaw (1991), Apresjan (1995: 193–203), Alexiadou (2001), Melloni (2011). Sketching out the argument structure of Czech nominals, Procházková (2006: 16) uses the labels “eventive” vs. “resultative” for various interpretations of primarily event-denoting nouns, in contrast to pure “result” nouns with only a resultative interpretation (they can denote only physical entities). In order to establish which sense(s) is/are activated in a given context, Ježek & Melloni (2011) pay attention to the selectional properties of the adjectival and verbal collocates of action nominals.

However, careful examination of concrete instances shows that the issue of “different meanings” of deverbal nouns is a complex one. Therefore, we suggest to not limit it to various figurative senses (cf. zásah cíle ‘hit of the target’ vs. zásah právnímu vědomí občanů ‘a jolt to the legal conscience of citizens’) or to clearly recognizable differences as in the case of deverbal nouns referring to a physical entity (semantically concrete nouns such as nouns denoting a person, place or thing, for example, vybavení ‘equipment’). We also want to pay attention to the semantic nuances such as “an abstract result of an action”, which is more difficult to capture.

The issue is how to recognize manifestations of different meanings. The types of derivational suffixes of the nouns in question (Section 5.1) and their syntactic behavior (Section 5.2) seem to be important factors in resolving this issue.

5.1 Derivational suffixes

When a deverbal noun is derived by a “meaningful” or a semantically specific suffix, its meaning usually does not pose any problem. This is true especially for actor nouns (e.g. with the suffix -tel), nouns denoting a place of an action/activity (e.g. suffix -árna), and nouns denoting a tool (e.g. suffix -dlo).
However, two basic types of Czech nouns derived from verbs by non-specific suffixes—that is, the nouns derived from verbs by productive means (e.g. *balení* ‘wrapping’) and by non-productive means or the zero suffix (e.g. *dražba* ‘auction’, *výslyt* ‘occurrence’)—very often have several meanings: sometimes, they denote an action or a state as their source verbs do; sometimes they denote physical entities related to actions, such as a person (*vedení* ‘management’, *rada* ‘council’), a thing (*pohoštění* ‘refreshments’, *stavba* ‘building’, *dodávka* ‘van’), or a place (*stoupání* ‘slope’, *východ* ‘exit’). Sometimes, it is not clear whether there is really a shift in meaning. This is the case especially for nouns derived from verbs by non-productive means; for example, non-productively derived nouns of communication (e.g. *prosba* ‘request’, *návrh* ‘suggestion’) seem to denote an action (speaking) in one of their meanings, compare (30) with (31) above. However, when they are compared to their productively derived counterparts (*prošení* ‘asking’, *navrhování/navržení* ‘suggesting’), it seems as if their action-like meaning has taken on a subtle resultative nuance.

Moreover, a noun that obviously has different meanings (e.g. *vybavení*₁ ‘furnishing’/’equipping’, *vybavení*₂ ‘furnishings’/’equipment’) can appear in a context that does not provide sufficient information for disambiguation, as in (36). Identification of the actual meaning of nouns occurring in annotated databases is often complicated by surface deletions of participants of the noun (rule (D) in Section 3).

(36) a. *Do vybavení₁ pokoj* investoval velkou částku.
in furnishing room-gen invest-3sg.pst large amount-acc
‘He invested a large amount of money in furnishing the room.’

b. *Do vybavení₂ pokoj* investoval
in furnishings room-gen invest-3sg.pst velkou částku.
large amount-acc
‘He invested a large amount of money in the room furnishings.’

The relation of the derivational suffixes of Czech deverbal nouns to the types of nominal derivation in Kuryłowicz’s sense is illustrated in Table 2. We propose that nouns derived by specific suffixes belong only to lexical derivation, whereas nouns derived by non-specific suffixes can belong to all three groups – syntactic, lexical, and the boundary between the two. In other words, a noun derived by non-specific suffixes (productive or non-productive) is supposed to be derived by syntactic derivation in one of its meanings; in another of its meanings, it can be derived by lexical derivation or situated on the boundary between syntactic and lexical derivation.
### Table 2. Czech deverbal nouns: derivational suffixes vs. type of derivation

<table>
<thead>
<tr>
<th>Derivational suffixes</th>
<th>Type of derivation in Kuryłowicz’s sense</th>
<th>Syntactic derivation</th>
<th>Boundary between syntactic and lexical derivation</th>
<th>Lexical derivation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Derivational suffixes</td>
<td>Actions</td>
<td>Abstract nouns</td>
<td>Esp. concrete nouns</td>
</tr>
<tr>
<td></td>
<td></td>
<td>States</td>
<td>People</td>
<td>Things</td>
</tr>
<tr>
<td>Non-specific</td>
<td></td>
<td>výslytování</td>
<td>výdání</td>
<td>– první</td>
</tr>
<tr>
<td>Productive means</td>
<td>– vedení podniku někým</td>
<td>se ‘occurring’</td>
<td>‘management’</td>
<td>vydání knihy</td>
</tr>
<tr>
<td></td>
<td>‘managing of the company by sb’</td>
<td></td>
<td></td>
<td>‘the first edition of the book’</td>
</tr>
<tr>
<td></td>
<td>– vydání knihy někým</td>
<td></td>
<td></td>
<td>– jedno balení másla</td>
</tr>
<tr>
<td></td>
<td>‘publishing of the book by sb’</td>
<td></td>
<td></td>
<td>‘one package of butter’</td>
</tr>
<tr>
<td></td>
<td>– balení dárků někým</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>‘wrapping of gifts by sb’</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>– dodávky zboží zákazníkům firmou</td>
<td>výslyt rop ≈ occurrence of oil’</td>
<td>examples in Section 7</td>
<td>rada ‘council’</td>
</tr>
<tr>
<td></td>
<td>‘deliveries of goods to customers by the company’</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
|                       | – východ slunce                         |                       |                                                 | – 5 výslytů v korpusu | ‘5 occurrences in the corpus’ |}

When differences in the meanings of the noun in question are expected but not clearly expressed, we suggest that its particular meaning (and consequently the type of its derivation) can be inferred from various aspects of its valency behavior; see examples in Sections 5.2, 6.2, and 7.
Differences between nouns derived by productive and non-productive means

When it comes to understanding of Czech deverbal nouns derived by productive or non-productive means, different approaches are available, applied within different theoretical frameworks; and even the term “derivation” is used in different ways.\(^{10}\)

The differences between productively and non-productively derived nouns are described in detail in Karlík (2002: 20–21), among other sources. As for the meaning and valency properties of these nouns, the following phenomena are discussed most frequently:

When nouns derived by productive means denote an action, they take over the characteristic “verbal” properties (Veselovská 2001: 18–23):\(^{11}\)

- they can be modified by an agent expressed by prepositionless instrumental;
- they are sensitive to aspect;
- they combine with the reflexive particle se/si;\(^{12}\)
- they allow adjectives that specify the content of the noun with respect to time and iteration (časté přepisování ‘frequent rewriting’) as well as adjectives that signal the presence of an agent (úmyslné přepisování ‘intentional/wilful rewriting’);
- they do not allow adjectives that apply to concrete, physical objects (*špinavé přepisování ‘dirty rewriting’).

On the other hand, productively as well as non-productively derived nouns share some properties, especially the possibility of the following modifications:

- modification by demonstratives;
- modification by content clauses;
- modification by possessives or genitives,\(^{13}\) which can be interpreted as subjects or objects of the related verbal form.

\(^{10}\) Veselovská (2001) and Karlík (2002: 14) follow a Chomskyan lexicalist hypothesis (Chomsky 1972) and claim that in Czech only nouns derived by productive means are syntactically derived, whereas nouns derived by non-productive means are derived in the lexicon module. However, some Czech scholars (Sgall 1967: 70; Panevová 1980: 142; Novotný 1980; Dokulil 1982: 261; Kolářová 2010: 43) assume that some non-productively derived nouns are also derived by syntactic derivation, e.g. zpěv ptáků ‘singing of birds’ (action), příchod někoho někam ‘arrival of somebody somewhere’ (action), výskyt ropy ‘occurrence of oil’ (state).

\(^{11}\) See also Karlík (2002), Panevová (1980: 142–143) and Křížková (1968: 132–143).

\(^{12}\) The occurrences found in our corpora show that the reflexive particle is often preserved but it can be omitted, see (79).

\(^{13}\) Conditions on expressing an agent in the genitive form are not investigated here.
The tests proposed by Grimshaw (1991) for distinguishing complex event nominals, event nominals and result nominals, which were elaborated for English nominals, should also be mentioned. The tests were effectively applied to Czech nouns by Procházková (2006: 17–24), who states that Czech eventive nouns fit into Grimshaw’s classification according to some but not all of the diagnostics. Nevertheless, the tests are still very useful for the comparison of syntactic properties of productively and non-productively derived nouns, see (37)–(38).

(37) a. čtení knihy hodinu
   reading-nom book-gen.sg hour-acc.sg
   ‘reading of the book for an hour’
   
   b. četba knihy hodinu
   reading-nom book-gen.sg hour-acc.sg
   ‘reading of the book for an hour’

(38) a. utěšování pacientů doktorem
   consoling-nom patient-gen.pl doctor-ins.sg
   ‘consoling of patients by a doctor’
   
   b. útěcha pacientů doktorem
   consolation-nom patient-gen.pl doctor-ins.sg
   ‘consolation of patients by a doctor’

Two points need to be taken into consideration in this comparison. First, when we measure the frequency of noun occurrences in the corpora, we find that tokens of productively derived nouns are much less frequent than tokens of non-productively derived ones. Sometimes, there is not even one occurrence of a productively derived noun while its non-productively derived counterpart is amply represented. Table 3 presents the frequencies found in the CNC subcorpus SYN2010.

The second point is that non-productively derived nouns that are derived from transitive verbs can sometimes be modified by an agent (ACT) in prepositionless INS, which is typical of syntactic derivations denoting an action, e.g. the noun prodej ‘sale’ in (39) and the noun obliba ‘liking/popularity’ in (40). We thus hypothesize that these nouns have an action as one of their meanings. It is a matter of debate whether such non-productively derived nouns (e.g. obliba ‘liking/popularity’) take over the function of their barely used productively derived counterpart, even though this counterpart is theoretically possible.

(39) prodej aut.PAT zákazníkům.ADDR firmou.ACT
    sale-nom car-gen.pl customer-dat.pl company-ins.sg
    ‘sale of cars to customers by a company’

(40) obliba prezidenta Putin.PAT ruskou veřejností.ACT
    liking president Putin-gen.sg Russian public-ins.sg
    ‘popularity of President Putin among the Russian community’
6. Special shifts and their impact on the meaning of nouns

The main issue discussed in this section is whether a special shift in valency implies change in the meaning of the noun. Jirsová (1966:74) claims that the special form of an adnominal participant is not coincidental: it is always associated with a change in the noun’s meaning and represents one of the manifestations of the new semantic nuance the noun receives.

There is no doubt that special shifts may be found with nouns undergoing plain semantic shifts (Section 6.1). However, our question is whether a special shift always implies change in meaning. The problem is that the difference in the meaning of a noun modified by a participant in a special form is not always clearly recognizable when compared with the same noun modified by that participant in a typical form, as is demonstrated in Sections 6.2 and 7. The consequences of special shifts for valency frames are discussed in Section 6.2.

6.1 Nouns undergoing plain semantic shifts

Sometimes, special forms of participants accompany nouns used in a figurative sense, such as the various figurative senses of nouns expressing “negative touch”, see (41) where the noun zásah modified by Patient in the dative, PAT(DAT), corresponding to the special shift, means ‘jolt’\textsuperscript{14} rather than ‘hit’; the latter meaning

\textsuperscript{14} The source verb itself can be used in the same figurative sense but in that case it does not lead to the shift in the form of the verbal Patient.
is exemplified in (42), where the noun zásah ‘hit’ is modified by PAT(GEN), corresponding to the typical shift. Using PAT(GEN) with the noun zásah ‘jolt’ is ungrammatical, as is using PAT(DAT) with the noun zásah ‘hit’, see (43) and (44).

(41) zásah právnímu vědomí.PAT občanů
  jolt-nom legal conscience-dat.sg national-gen.pl
  ‘a jolt to the legal conscience of citizens’

(42) zásah cíle.PAT
  hit-nom target-gen.sg
  ‘hit of the target’

(43) *zásah právního vědomí.PAT občanů
  jolt-nom legal conscience-gen.sg national-gen.pl
  ‘a jolt of the legal conscience of citizens’

(44) *zásah cíli.PAT
  hit-nom target-dat.sg
  ‘hit to the target’

The fact that a noun allows participants in special forms is related to the category of verbal aspect: in the case of nouns derived by productive means, special shifts are mostly allowed with nouns derived from perfective verbs, but not with their imperfective counterparts. It may be related to the fact that perfective nouns have a greater tendency to lose an action meaning than the imperfective nouns. Sometimes, in addition to actions they can denote mental states or dispositions. Such a semantic shift (i.e. action → mental state or disposition) can be accompanied by a special form of a participant. In (45) the perfective noun politování ‘pitying’ denotes an action and is modified by PAT(GEN) corresponding to a typical shift, unlike in (46), where the noun politování ‘regret’ denotes the mental state and is modified by PAT expressed by PP (nad ‘about’ + INS), corresponding to a special shift.

(45) politování obětí.PAT útoku
  pitying-nom victim-gen.pl attack-gen.sg
  ‘pitying of victims of the attack’

(46) vyjádřit politování nad obětími.PAT
  express-inf regret-acc.sg about victim-ins.pl
  ‘to express regret about victims’

---

15. Krížková (1968: 143) claims that the perfective nouns often express states as the results of an action, e.g. konstatovat s uspokojením ‘to state with satisfaction’.

16. We suppose that the nouns that represent a nominal part of a support verb construction, such as politování ‘regret’ in vyjádřit politování ‘to express regret’ (46), have their own nominal valency (Cinková & Kolářová 2006); we do not consider it the valency of the whole support verb construction.
When the semantic shift (change in the meaning) is indisputable, we consider the nouns to be lexical derivates.

6.2 Special shifts and valency frames

In this section the assumption that one valency frame corresponds to one meaning (sense) of a noun is discussed, with the focus on nouns with special forms of participants. The general issue is whether two different forms of a participant (two typical forms, two special forms or one typical and one special form, i.e. the case focused on here) represent mere variants that can be captured in one valency frame, or whether there are reasons for treating them within two different valency frames (Kolářová 2010: 174). Subsequently, the question arises whether a new valency frame created due to a special form of a participant corresponds to a different meaning of the noun at issue.

The indisputable reasons for creating a new valency frame are the following:

– a clear change in the meaning of a noun (Sections 5 and 6.1);
– reduction of the number of valency slots (Section 4.3);
– a change of the character of valency complementation to exclusively nominal (Section 4.4).

However, there are cases of nouns with a special form of a participant that keep all participants inherited from the source verb; the participants do not change to specifically nominal ones. Moreover, the difference between the noun’s meaning and the verb’s meaning is not clear (Section 7). Especially when not all the participants are expressed,\(^\text{17}\) the meaning of the noun modified by a participant in a special form seems to be the same as the meaning of the noun modified by that participant in a typical form, as in (47) and (48).

(47) *americká podpora Evropy.PAT*
American support Europe-GEN.SG
‘American support of Europe’

(48) *americká podpora Evropě.PAT*
American support Europe-DAT.SG
‘American support to Europe’

We propose that a further reason for creating a new valency frame is the different syntactic behavior of a noun with a participant in a special form, when compared

---

\(^{17}\) Relational adjectives, such as *American* in (47) and (48), are not considered participants; for discussion of this issue, see Kolářová (2010:80–81).
with the syntactic behavior of the same noun with the participant in a typical form. We suggest that if a participant in a special form cannot combine with the same set of forms of other participants from one valency frame as typical forms, a new valency frame should be created in the lexicon. Moreover, we suppose that when such a differentiating syntactic behavior is detected, it should also be understood as a manifestation of a difference in meaning, even if it is only a slight nuance.

One of the syntactic tests we use is the possibility of combining an Actor expressed by the prepositionless instrumental case with a participant expressed either by the typical form or by the special form. Other tests are presented in Section 7.

The noun podpora ‘support’, for example, can combine the typical (genitive) form of Patient with an Actor expressed in the instrumental when it denotes an action, see (49), unlike the same noun when it is action-like, however slightly different meaning. Such a noun does not typically allow the combination of Patient in the special (dative) form and Actor in INS, see (51).\(^{18}\) A noun such as podpora ‘support’ should therefore be described in the valency dictionary with the two valency frames illustrated in (50) and (52).

\[
\begin{align*}
\text{(49)} & \quad \text{podpora} \quad \text{Evropy.PAT} \quad \text{Amerikou.ACT} \\
& \quad \text{support-nom.sg} \quad \text{Europe-gen.sg} \quad \text{America-ins.sg} \\
& \quad \text{‘support of Europe by America’}
\end{align*}
\]

\[
\begin{align*}
\text{(50)} & \quad \text{podpora}_1 \ ‘support’: \\
& \quad \text{ACT(GEN, POSS, INS) PAT(GEN, POSS)}
\end{align*}
\]

\[
\begin{align*}
\text{(51)} & \quad \text{podpora} \quad \text{Evropě.PAT} \quad \text{Amerikou.ACT} \\
& \quad \text{support-nom.sg} \quad \text{Europe-dat.sg} \quad \text{America-ins.sg} \\
& \quad \text{‘support to Europe by America’}
\end{align*}
\]

\[
\begin{align*}
\text{(52)} & \quad \text{podpora}_2 \ ‘support’: \quad \text{ACT(GEN, POSS) PAT(DAT)}
\end{align*}
\]

In contrast, sometimes different forms of complementation are considered to be mere variants because they can be combined with other participants to the same extent. This is the case of the noun vyučování ‘teaching’ which can combine two forms of Patient, the genitive and the dative, both classified as typical, with Actor expressed by a prepositionless instrumental, as in (53) and (54). Thus the two

\(^{18}\) Surprisingly, three examples of such allegedly ungrammatical construction occur in the CNC subcorpora, e.g. vzpomínky na výraznou podporu vznikajícímu izraelskému státu Československem v letech 1947–1949 (SYN2006PUB) ‘memories of substantial support to the rising State of Israel by Czechoslovakia in years 1947–1949’. It’s true that this example is acceptable; however its shorter variant, e.g. podpora Izraeli Československem ‘support to Israel by Czechoslovakia’, is not acceptable for the author of this chapter.
different forms of Patient can be captured in one valency frame as variants, as shown in (55).

(53) vyučování  latiny.PAT  učitelem.ACT  
teaching-NOM.SG  Latin-GEN.SG  teacher-INS.SG  
‘teaching of Latin by a teacher’

(54) vyučování  latíň.PAT  učitelem.ACT  
teaching-NOM.SG  Latin-DAT.SG  teacher-INS.SG  
‘teaching of Latin by a teacher’

(55) vyučování, ‘teaching’: ACT(GEN, POSS, INS) PAT(GEN, POSS, DAT) ADDR(GEN, POSS)

We believe that this theoretical proposal for treating nouns with special forms of participants in the valency lexicon makes it possible to properly capture their valency properties. However, we are aware that such a fine-grained approach can cause indecision when particular valency frames are being assigned to the nouns that occur in the annotated databases, especially when not all the participants of a noun are expressed. However, the problem with unexpressed participants also holds for nouns that do not allow special forms of participants, as shown in (36).

7. **Overview of nouns on the boundary between syntactic and lexical derivation**

This section is devoted to nouns that represent a transitional category, namely nouns situated on the boundary between syntactic and lexical derivation. This category of nouns was envisaged by Panevová (2002), but a detailed description of the valency behavior of nouns belonging to this category has not been provided yet.

In this section we show that these nouns – mostly non-productively, but also a few productively derived – exhibit truly “transitional” semantic and valency properties. They are thus not only rightly situated on the boundary between syntactic and lexical derivation, but they also require special lexicographic treatment. These nouns allow participants in a special form but they neither have a plain action meaning nor exhibit a clear shift in meaning (such as toward a figurative meaning). They do not denote physical entities either. As for their valency behavior, it is not typical; the nouns do not behave completely as syntactic derivates, but they take over some properties typical of syntactic derivates.

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19. For systematic combinatory restrictions, see Section 3 and Panevová, this volume.
At the same time, these nouns do not exhibit valency properties typical of plain lexical derivates either.

We want to examine here how a special form behaves in combination with various forms of modification implying an action reading, using the same tests as in Sections 5.2 and 6.2. We compare (a) nominal constructions in which nouns with typical “verbal” properties that obviously denote an action are modified by participants in forms corresponding to typical shifts, with (b) nominal constructions in which the same nouns are modified by complementation implying an action reading and, in addition, by a participant in a form corresponding to a special shift (Section 4.1). We propose the following parameters as the main criteria for identifying barely recognizable semantic nuances: Nouns denoting an action are expected to allow modification by ACT(INS) and adjectives that specify the content of the noun with respect to time and iteration (adjectives such as ‘frequent’, ‘repeated’, ‘constant’, ‘occasional’, or ‘everyday’). Possibly, they can also admit adverbs such as předem ‘in advance’. In contrast, some nouns (esp. nouns of communication) that tend to exhibit a resultative meaning can be identified by the possibility of modification expressed by a special PP (o ‘about’ + LOC) ‘concerning/about something’ which is not present in the valency frame of their source verbs (Section 4.4). Additionally, nouns denoting a physical entity related to an action can be modified by adjectives that apply to concrete, physical objects (e.g. česky psaná varování zlodějům ‘warnings to thieves written in Czech’). Nouns derived by non-productive means are also compared with their productively derived counterparts. For this pilot study, nouns representing the most frequent special shifts were chosen.

7.1 Typical shift ACC → GEN vs. special shifts ACC → DAT or ACC → PP

Nouns modified by a participant whose form undergoes the special shift ACC → DAT (or ACC → PP) are illustrated by two productively derived nouns of communication: the perfective noun upozornění ‘warning’ and the both perfective and imperfective noun varování ‘warning’; and one non-productively derived noun of evaluation, the noun pochvála ‘praise’.

Example (56) illustrates the perfective noun upozornění ‘warning’ modified by participants ACT and ADDR, the form of which corresponds to typical shifts. This noun can also be modified by ADDR in the forms corresponding to special shifts, DAT and PP, see (57). However, a combination of these two special forms of ADDR with ACT(INS) is not possible, see (58)–(59).

(56) upozornění myslivců.ADDR Dr. Novákem.ACT
    warning-NOM hunter-GEN.PL Dr. Novak-INS.SG
    ‘warning of hunters by Dr. Novak’
The noun upozornění ‘warning’ allows modification by the adverb předem ‘in advance’, but only the combination with ADDR(GEN) is then acceptable, see (60). Constructions in which the adverb is combined with ADDR in the forms corresponding to special shifts are ungrammatical, as shown in (61) and (62). On the other hand, the adjectives opakovaný ‘repeated’ and opětovný ‘repeated’ are allowed in combination with the special form of ADDR, i.e. with ADDR(DAT), see (63).

(60) upozornění poslanců.ADDR předem, že...CC.PAT  
warning-NOM.SG deputy-GEN.PL in advance that  
‘warning of deputies in advance that...’

(61) *upozornění poslancům.ADDR předem, že...CC.PAT  
warning-NOM.SG deputy-DAT.PL in advance that  
‘warning addressed to deputies in advance that...’

(62) *upozornění pro poslance.ADDR předem, že...CC.PAT  
warning-NOM.SG for deputy-ACC.PL in advance that  
‘warning addressed to deputies in advance that...’

(63) po opětovném upozornění zmocněnci.ADDR  
after repeated-LOC.SG warning-LOC representative-DAT.SG  
‘after repeated warning addressed to the representative’

The situation changes when the noun upozornění ‘warning’ is modified by a special PP (o ‘about’ + LOC) ‘concerning/about something’ (marked by functor PAT). The presence of this modification possibly signals a subtle change in meaning (an action → an abstract result of an action). A combination of this modification and ADDR(DAT) or ADDR(PP) is possible, as in (64) and (65), but a combination with ADDR(GEN) is marked, see (66).

(64) upozornění řidičům.ADDR o výměně.PAT  
warning-NOM.SG driver-DAT.PL about changing-LOC.SG  
řidičských průkazů  
driving licence-GEN.PL  
‘warning addressed to drivers concerning changing of driver's licenses’
Noteworthily, the special modification by ADDR(DAT) or ADDR(PP) is only acceptable with the perfective noun *upozornění ‘warning’ but it cannot appear with its imperfective counterpart, *upozorňování řidičům ‘warning addressed to drivers’.

Another factor leading to the use of the special modification by ADDR(DAT) or ADDR(PP) instead of the typical modification by ADDR(GEN) could be the tendency to avoid the syntactic ambiguity between Actor and Addressee interpretation of a postnominal genitive. This tendency is especially characteristic of nouns of communication (both participants, Actor as well as Addressee, are animate).

Another noun of communication, the productively derived both perfective and imperfective noun varování ‘warning’, behaves in a similar way. It does not allow a combination of special modification by ADDR(DAT) together with ACT(INS), but a combination of ADDR(DAT) and adjectives with the meaning ‘constant’ or ‘repeated’ is possible. Moreover, it allows a combination of ADDR(DAT) and the adjective ‘intentional’, see (67). In contrast, when denoting a physical entity, the noun varování ‘warning’ with ADDR(DAT) can also be modified by adjectives implying resultative or “physical” interpretation of the noun, as in (68).

(67) úmyslná varování plagiátorovi.ADDR, že...CC.PAT
intentional warning-NOM.PL plagiarist-DAT.SG that
‘intentional warnings addressed to the plagiarist that…’

(68) česky psaná varování zlodějům.ADDR
in_Czech written warning-NOM.PL thief-DAT.PL
‘warnings addressed to thieves written in Czech’

Pochvala ‘praise’ is a noun derived by non-productive means that allows special modification in contrast to its counterpart pochválení ‘praising’, a perfective noun derived by productive means. Example (69) illustrates the noun pochválení ‘praising’ modified by the participants ACT and PAT in the forms corresponding to typical shifts. Pochvala ‘praise’ can be modified by PAT(GEN) which can be both animate (pochvala ministra ‘praise of minister’) and inanimate (pochvala kravaty ‘praise of necktie’), see (70). We determined that the noun pochvala ‘praise’ modified by PAT(GEN) in combination with ACT(INS), as in (71), does not appear in the subcorpora of CNC. The noun pochvala ‘praise’ can be also modified by PAT(DAT), corresponding to the special shift ACC $\rightarrow$ DAT, but the PAT must
probably be animate in such a case, see (72). The construction in (73), where PAT(DAT) is combined with ACT(INS), is ungrammatical. The dative form of PAT can be influenced by the valency of the verbal part of support verb constructions in which the noun pochvala ‘praise’ occurs, e.g. udělit pochvalu + DAT ‘lit. to give praise to’.

(69) pochválení ministra.PAT prezidentem.ACT
    praising-NOM.SG minister-GEN.SG president-INS.SG
    ‘praising of the minister by the President’

(70) pochvala ministra.PAT / kravaty.PAT
    praise-NOM.SG minister-GEN.SG necktie-GEN.SG
    ‘praise of the minister/of the necktie’

(71) pochvala ministra.PAT prezidentem.ACT
    praise-NOM.SG minister-GEN.SG president-INS.SG
    ‘praise of the minister by the president’

(72) pochvala ministrovi.PAT / *kravatě.PAT
    praise-NOM.SG minister-DAT.SG necktie-DAT.SG
    ‘praise addressed to the minister/*to the necktie’

(73) *pochvala ministrovi.PAT prezidentem.ACT
    praise-NOM.SG minister-DAT.SG president-INS.SG
    ‘praise addressed to the minister by the president’

7.2 Typical shift ACC → GEN vs. special shift ACC → PP

Example (74) shows the imperfective noun lovení ‘hunting’ derived by productive means with ACT and PAT forms corresponding to typical shifts. Its non-productively derived counterpart lov ‘a hunt’ has the same valency structure in (75). In addition, this noun can be modified by PAT in PP (na ‘on’ + ACC), corresponding to the special shift ACC → PP, see (76), in which case it can be modified by the adjective ‘occasional’, see (77). However, a combination of PAT(PP) with ACT(INS) is ungrammatical for lov ‘a hunt’, see (78).

(74) lovení velryb.PAT rybáři.ACT
    hunting-NOM.SG whale-GEN.PL fisherman-INS.PL
    ‘hunting of whales by fishermen’

(75) lov velryb.PAT rybáři.ACT
    hunt-NOM.SG whale-GEN.PL fisherman-INS.PL
    ‘hunt of whales by fishermen’

(76) lov rybářů.ACT na velryby.PAT
    hunt-NOM.SG fisherman-GEN.PL on whale-ACC.PL
    ‘hunt of fishermen for whales’
7.3 Typical correspondence GEN → GEN vs. special shift GEN → PP

Examples (79) and (80) illustrate the productively derived perfective noun *dotknutí (se)* 'touching' and the non-productively derived noun *dotyk* 'touch' modified by PAT(GEN) and ACT(INS). This kind of modification (rare with *dotyk*) suggests their reading as action nouns. The possibility of combining with ACT(INS) is interesting in this case because the source verb *dotknout* -IPFV se / *dotýkat* -PFV se 'to touch' is an intransitive inherently reflexive verb that can only be “passivized” in its figurative sense; see (81), where *dotčen* means ‘offended’. The noun *dotyk* 'touch' can also be modified by PAT in PP (s ‘with’ + INS), corresponding to the special shift GEN → PP, and at the same time by the adjectives ‘constant’ and ‘repeated’ as in (82) and (83). However, a combination of PAT(PP) with ACT(INS) is ungrammatical, see (84).

(79) *dotknutí (se) míče.PAT hráčem.ACT  
touching-NOM.SG refl ball-GEN.SG player-INS.SG  
‘touching of the ball by the player’

(80) *dotyk míče.PAT hráčem.ACT  
touch-NOM.SG ball-GEN.SG player-INS.SG  
‘touch of the ball by the player’

(81) *Petr byl dotčen jednáním toho člověka.  
Peter was offended action-INS.SG that-GEN man-GEN.SG  
‘Peter was offended by the action of the man.’

(82) pravidla nařizující neustálý dotyk se zemí.PAT  
rule-NOM.PL ordering continual touch with ground-INS.SG  
‘rules ordering continual touch with ground’

(83) opakovaný dotyk s látkou.PAT  
repeated touch-NOM.SG with cloth-INS.SG  
‘repeated touch with a cloth’

(84) *dotyk s míčem.PAT hráčem.ACT  
touch-NOM.SG with ball-INS.SG player-INS.SG  
‘touch/being in contact with the ball by a player’
7.4 Typical correspondence GEN → GEN vs. special shifts GEN → DAT or GEN → PP

Another set of examples showing differences between productively and non-productively derived deverbal nouns is given in (85)–(89). Construction (85) illustrates the reflexive perfective noun derived by productive means *otázání se* ‘asking’, modified by the participant ADDR in the typical, genitive form. The construction with ADDR(GEN) is ungrammatical with the corresponding non-productively derived noun *otázka* ‘question’, see (86); instead, the Addressee commonly takes DAT or PP (*na* ‘at’ + ACC) which correspond to special shifts, see (87). The dative form of PAT could be influenced by the tendency to avoid ambiguity between ACT(GEN) and ADDR(GEN), which is characteristic of nouns of communication, and by the valency of the verbal part of the support verb constructions with the noun *otázka* ‘question’, e.g. *dát otázku* + DAT ‘to ask a question’, lit. ‘to give a question to sb’. ACT(INS) does not appear at all with the noun *otázka* ‘question’. Adjectives meaning ‘repeated’ or ‘frequent’ can combine with the noun *otázka* ‘question’ when modified by ADDR in DAT or PP, see (88) and (89). The last two constructions could represent a condensation of a construction involving an adjectival participle, e.g. *častá otázka* ‘frequent question’ can correspond to *často kladená otázka* ‘frequently asked question’.

(85) *otázání se dvou sedících mužů. ADDR*
asking-NOM.SG REFL TWO-GEN sitting-GEN.PL man-GEN.PL
‘asking of two sitting men’

(86) *otázka dvou sedících mužů. ADDR*
question-NOM.SG TWO-GEN sitting-GEN.PL man-GEN.PL
‘question of two sitting men’

(87) *dnešní otázka někomu. ADDR /
 today’s question-NOM sb-DAT.SG
na někoho. ADDR, zda … CC.PAT
at sb-ACC.SG whether
‘today’s question addressed to somebody whether …’

(88) *básníkova. ACT opakovaná otázka lidem. ADDR*
poet-ADJ.POSS repeated question-NOM people-DAT.PL
‘poet’s repeated question addressed to the people’

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20. However, such a construction is rare (only one example occurs in all of the CNC sub-corpora).
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7.5 Special shift PPC → PPC(PP)

In order to illustrate nominal modification by a participant having a propositional character (PPC) and undergoing a special shift, we chose one productively derived noun of communication, the perfective noun doporučení ‘recommending’, and one non-productively derived noun denoting a mental state or disposition, the noun obava ‘fear’.

The propositional participant of the perfective noun doporučení ‘recommending’ undergoes the special shift PPC (CC / INF / ACC) → PPC (CC / INF / GEN / PP). Examples (90) and (91) illustrate this noun when modified by participants in the forms corresponding to typical shifts. Besides the forms of PPC corresponding to the typical shifts, i.e. CC, INF, and GEN, there is one more possible form of PAT, namely PP (k ‘to’ + DAT), which corresponds to a special shift. Adjectives meaning ‘frequent’, ‘constant’, or ‘repeated’ do not occur when the noun is modified by PAT(PP); however, the modification by the adjective ‘lasting’ in (92), interestingly, implies the progressive meaning of the noun. The combination of PAT(PP) and ACT(INS) is ungrammatical, see (93).

(90) doporučení produktu.PAT firmou.ACT
recommending product-GEN.SG company-INS.SG
‘recommending of the product by the company’

(91) doporučení volby.PAT rodinou.ACT
recommending election-GEN.SG family-INS.SG
‘recommending who to vote by the family’

(92) již druhý týden trvající doporučení
already second week lasting recommendation
k nákupu.PAT akcií
to purchase-DAT.SG share-GEN.PL
‘recommendation lasting for two weeks to purchase shares’

(93) *doporučení k volbě.PAT rodinou.ACT
recommending to election-DAT.SG family-INS.SG
‘recommendation who to vote by the family’

The propositional participant of the non-productively derived noun obava ‘fear’ undergoes the special shift PPC (CC / (INF) / GEN) → PPC (CC / (INF) / PP). Example (95) shows that the noun obava ‘fear’ does not manifest the typical correspondence of the adnominal and verbal GEN; this correspondence can be found
only with the productively derived reflexive imperfective noun *obávání se* ‘fearing’ that allows the modification by PAT in the typical, genitive form, see (94).\(^{21}\) The noun *obava* ‘fear’ allows several other forms of PAT: besides the typical forms CC and INF it also allows PP (*z* ‘of’ + GEN), which is a special shift. ACT(INS) does not appear at all with this noun. However, the adjective ‘everyday’ is possible with the noun *obava* ‘fear’ modified by PAT(PP), see (96).

(94) *obávání se něčeho.*PAT  
  fearing-NOM.SG REFL sTH-GEN.SG  
  ‘being afraid of something’

(95) *obava něčeho.*PAT  
  fear-NOM.SG sTH-GEN.SG  
  ‘fear of something’

(96) *každodenní obava z něčeho.*PAT  
  everyday fear-NOM.SG of sTH-GEN.SG  
  ‘everyday fear of something’

7.6 Discussion of results

When evaluating the examples of nouns derived from action verbs (*upozornění*-PFV ‘warning’, *varování*-PFV/IPFV ‘warning’, *pochvala* ‘praise’, *lov* ‘hunt’, *dotyk* ‘touch’, *otázka* ‘question’, *doporučení*-PFV ‘recommending/recommendation’), we must conclude that there is no example in which a noun modified by a partici-
pant in a special form satisfies all the criteria proposed for the identification of an action meaning; in other words, none of them is an indisputable example of a noun with an action meaning.

Contrary to expectation, nouns derived from action verbs as well as the noun *obava* ‘fear’, which is derived from a psychological verb, typically allow adjectives such as ‘frequent’, ‘repeated’, ‘constant’, ‘occasional’, or ‘everyday’\(^{22}\). Moreover, these nouns can be modified by a participant in the special form and by all other par-
ticipants from their valency frame at the same time (we saw that the form of ACT cannot be INS; however, GEN or ADJ\(_{P OSS}\)/PRON\(_{P OSS}\) are possible expressions of ACT). The participants keep their “verbal” character and do not change to the specifically nominal valency complementations MAT or APP (Section 4.4). We also observed that the typical forms are sometimes rare or even ungrammatical.

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21. However, such a construction does not occur in the CNC subcorpora that we used.

22. We must realize, though, that these adjectives can be used as a vague condensation of more difficult constructions, accompanied by the deletion of some parts of the construction; see the discussion of *častá otázka* ‘frequent question’ in Section 7.4.
The meaning of the abstract nouns with special forms of participants is slightly different from that of action nouns.

Since the characteristics described do not completely satisfy the criteria proposed for the identification of an action meaning nor do they match the properties typical of a plain result(ative) meaning (a plain semantic shift or a physical interpretation, reduction of the number of slots in the valency frame, or change of the character of a valency complementation, see Sections 4.3 and 4.4), we can confirm the hypothesis that these nouns should be regarded as representatives of a transitional (and heterogeneous) category situated on the boundary between syntactic and lexical derivation. Their semantic interpretation in most cases could be specified as an abstract result of an action. This interpretation was distinguished from a “concrete object” interpretation when a noun denotes a physical entity, for example, česky psaná varování zlodějům ‘warnings to thieves written in Czech’.

We suppose that special forms of the participants themselves cannot serve as a reason to regard the given deverbal nouns as the results of lexical derivation. We assume that some “irregular” nominal forms occasionally replace other “more regular” forms in the language system; we determined two such situations (which can also combine in one construction): (i) a non-productively derived noun is used instead of a productively derived one (the productively derived noun is very rare or not used at all, see examples in Table 3), or (ii) a special form of a participant is used instead of a typical one (the typical form is rare or even ungrammatical, see situations C and D in Table 1 and examples (86) and (95)). Such a substitution entails syntactic behavior that, for grammatical reasons, does not correspond to the typical syntactic behavior characteristic of the syntactic derivation (Section 3). However, such nouns seem to have a similar function in a sentence as the outcomes of regular syntactic derivation.

Regardless of the difficulties with identifying the exact meaning of these nouns, we suggest creating a new valency frame in the valency lexicon for them (Section 6.2) if a special form of one of their participants cannot combine with the same set of forms of other participants from a valency frame that has already been described, as the typical form of that participant. The prototypical example of a form with which special forms of participants cannot combine is ACT(INS), and we rely on this fact in our tests that manifest different syntactic behavior of nouns with special shifts.

8. Summary of factors influencing manifestation of special valency behavior

This study has revealed various factors influencing the use of the special forms of complementation. These factors affect not only the nouns on the boundary
between syntactic and lexical derivation, but also the nouns derived by lexical derivation. They can be classified as follows:

a. Semantic properties of a noun: the semantic group it belongs to (such as nouns of communication, e.g. otázka ‘question’; nouns denoting positive or negative mental states or dispositions, compare naděje spolupráce ‘hope of cooperation’ in (24) with *obava následků ‘fear of consequences’ in (95)); plain semantic shifts that deverbal nouns have undergone (e.g. the shift to a figurative sense of nouns expressing “negative touch”, see zásah ‘jolt’ in (41) and zásah ‘hit’ in (42); the shift action → mental state or disposition, see politování ‘pitying’ in (45) and politování ‘regret’ in (46)), etc.

b. Properties of valency complementation, such as animacy vs. inanimacy, compare the forms of Patient modifying the noun pochvala ‘praise’ in (70) and (72).

c. Grammatical properties of the source verb, especially perfective vs. imperfective aspect, e.g. upozornění-PFV řidičům ‘warning addressed to drivers’/upozorňování-IPFV řidičům ‘warning addressed to drivers’ (Section 7).

d. Use of the noun within support verb constructions such that the valency of the verbal component of the support verb construction can influence the valency of its nominal component, compare pochválit někoho ‘praise somebody’ with udělit pochvalu někomu ‘to give praise to somebody’ and the dative form of Patient modifying the noun pochvala ‘praise’ in (72).

e. The tendency to avoid syntactic ambiguity, for example, the tendency to differentiate Addressee in the genitive, modifying some nouns of communication, from Actor in the genitive; as a result the noun employs a special form for the Addressee (Section 7).

f. Some other factors such as various types of analogy. For example, the dative form of Addressee when it represents a special shift, as in combination with some nouns of communication, could be used by analogy with the most typical and the most frequent form of Addressee in general, which is the dative form.

9. Conclusion

We have given a complex survey of the typical as well as special valency behavior of Czech deverbal nouns. We have focused on special shifts in the surface forms of participants and their impact on the meaning of the noun. After considering the syntactic and semantic properties of the nouns modified by a participant undergoing a special shift in its form, we delimited a group of nouns situated on the
boundary between syntactic and lexical derivation which allow these shifts. We have taken into account not only the possible combinations of particular forms of complementation (i.e. combinations of the forms corresponding to special shifts and the forms of other modification implying action reading) but also the function of the noun in the language related to its meaning. We suppose that the nouns on the boundary between syntactic and lexical derivation have a similar role as the fully syntactic derivations because they can occasionally replace them.

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PDT-Vallex: Czech Valency lexicon linked to treebanks. (http://ufal.mff.cuni.cz/PDT-Vallex/)


CHAPTER 3

Nominalizations of Spanish perception verbs at the syntax–semantics interface

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Most studies on nominalization focus on nouns derived from action verbs and pay little attention to other semantic types. This article aims to fill this gap by studying a group of perception nominalizations in Spanish. It is well known that the semantic distinctions that cross the field of perception (corresponding to the perception modalities and agentivity of the perceiver) influence the syntax of the corresponding verbs, and especially their complementing pattern. Yet, it has not been studied to what extent these oppositions have an impact on the argument structure of perception nominalizations. Moreover, as opposed to previous analyses, which mainly focus on theoretical assumptions of the nominalization process, this study is corpus-based and provides a quantitative as well as a qualitative analysis.

1. Introduction

It has frequently been stated that deverbal nominalizations should be considered as reclassifications of their corresponding verbal clauses (Heyvaert 2003), and thus that there is a systematic link between a nominalization and its arguments, on the one hand, and between clauses and their verbal head, on the other (Hopper & Thompson 1985; Givón 2001; Heyvaert 2003; Melloni 2007).¹ The literature on nominalizations has generally focused on prototypical instances, i.e. deverbal nominalizations derived from verbs with an agentive subject (e.g. construction, translation, description). These nomina actionis have traditionally been divided into two types, event and result nominals, which are said to influence the

¹ As defined by Fradin (2012: 129), a nominalization fulfills two criteria: (i) it is discursively equivalent to a verbal predicate, and (ii) it presents the distributional and semantic properties of a noun.
morpho-syntactic and denotative properties of the nominal (Grimshaw 1990; Alexiadou 2001; Melloni 2007). Consider the following examples in Spanish:

(1) la traducción de una carta (por (parte de) Emilio)
   the translation of a letter (by (part of) Emilio)
   ‘the translation of a letter (by Emilio)’

(2) una/la traducción (de Emilio) (de una carta)
   a/ the translation (of Emilio) (of a letter)
   ‘Emilio’s translation of a letter’

The first type (1) is an event nominal and behaves like a passive nominal. It is therefore traditionally said to carry an overt patient (de una carta), while the agent, introduced by por (parte de) ‘by’, can be omitted. Event nominals also admit the same aspeclual modifiers as their verbal counterparts, indicating that they preserve the aspeclual properties of the base verb. This is illustrated in (3).

(3) a. El bombardeo destruyó la ciudad en solo dos días.
   ‘The bombing destroyed the city in only two days.’

   b. La destrucción total de la ciudad en solo dos días espanta a todos.
   ‘Everyone is appalled that the city has been completely destroyed in only two days.’

The second type of nomina actionis, result nominals (2), refers to the outcome of the event denoted by the base verb. As a result, they can omit both the agent and the patient, and thus display a merely nominal character. They are said to appear with the entire range of determiners (4a), can be used in the plural form (4b), and they carry optional modifiers (4c-d).

(4) a. la / una / aquella / alguna traducción de la Eneida
   ‘the / a / that / some translation of the Aeneid’

   b. las traducciones de la Eneida
   ‘the translations of the Aeneid’

2. Glosses will be provided only in those cases where the Spanish and English equivalents present a different syntactic structure. When there is a direct word-to-word correspondence, simple alignment is introduced.

3. Examples are based on Grimshaw (1990:58).

c. la traducción de la Eneida fue publicada por Alianza
   ‘the translation of the Aeneid was published by Alianza’

d. La traducción fue publicada por Alianza.
   ‘The translation was published by Alianza.’

However, more recently, many authors have pointed out the need to refine this classification.

In the first place, in recent literature, the narrow interpretation of the result category has been put into question, as it is such a heterogeneous class (Osswald 2005; Melloni 2007, 2010; Scott 2010). In this paper, we will therefore follow the classification provided by Melloni (2007:11), who adopts the term *referential nominal*. This category contains the following semantic subsets: product/result (*construction*), means (*connection*), psychological stimulus (*attraction*), path (*prolongation*), agentive-collective (*administration*), and locative (*entry*).

Next, as has been mentioned above, most studies have focused on nominalizations derived from action verbs and have paid little attention to other semantic types. This clearly reflects on the interpretation of the notion of *event nominal*. According to Melloni (2007:12), this category should equally comprise action nominals and state nominals, since both types usually preserve the argument structure of the verbs they are derived from. So, more recently, state nominalizations and nominalizations derived from verbs with an experiencer subject have been analyzed in more detail (Meinschaefer 2003; Giammatteo, Albano & Ghio 2005; Fábregas & Marín 2012; Fábregas, Marín & McNally 2012). Since the grammatical properties of these two types have been proven to be different both from the category of event nominals as from that of referential nominals, they deserve a proper treatment (Huyghe & Marín 2007; Melloni 2007, Barque, Huyghe, Jugnet & Marín 2009; Fábregas & Marín 2012). The first characteristic of states is that, as opposed to events, they denote non-dynamic situations, by which they cannot be the subject of a predicate like *tener lugar* ‘take place’ (5a). In this property, they behave like result nouns. Second, states have a temporal extension, just like event nominalizations. Therefore, both events and states can be modified by a time expression, such as the adjective *constante* ‘constant’ (5b) (Fábregas & Marín 2012:36).

(5) a. *La preocupación de Juan por la economía
   the preoccupation of John by the economy
   tuvo lugar el verano pasado.5
   have.pst.3sg place the summer passed
   ‘John’s preoccupation with the economy took place last summer.’

5. Examples based on Fábregas & Marín (2012:36)
b. la preocupación constante de Juan por la economía
the preoccupation constant of John by the economy
‘John’s constant preoccupation with the economy’

Throughout, one particular category of deverbal nominalizations has remained fairly neglected in the literature. While many authors have studied the syntactic and semantic behavior of perception verbs (cf. Sweetser 1990; Ibarretxe-Antuñano 1999; Enghels 2007 among others), surprisingly their derived nominalizations have not yet been analyzed in depth.6 Hence, the main objective of this article is to examine the linguistic behavior of perception nominalizations (PN). The group comprises the following cases that are derived from visual perception verbs: visión ‘vision’, vista ‘sight’, and mirada ‘look’. For auditory perception verbs the following cases are relevant: audición ‘hearing, audition’, oído ‘ear, hearing’ and escucha ‘listening, eavesdropping’.7 More particularly, this paper aims to answer these two research questions: (1) to what extent do PNs show the same semantic and syntactic complexity as compared to their verbal bases; and (2) how do PNs fit in the above mentioned classification of event vs. referential vs. state nominal, and to what extent does this classification influence their syntactic behavior.

The outline of this paper is as follows. First, we will motivate our selection of perception nouns, and pay special attention to the properties of their verbal bases (Section 2). Next, we will analyze the polysemy of the PNs, emphasizing the impact of the semantics of their suffixes (Section 3). It will be demonstrated that the PNs can be defined as near-synonyms that, however, seem to have semantically specialized. Finally, in Section 4, we will examine the syntax of our selected PNs, systematically establishing a correlation with their semantic properties on the one hand, and the cognitive-semantic features of their corresponding verbs, on the other hand. The main area that will be studied is the behavior of postnominal prepositional phrases, including de-phrases and other obliques.

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6. The analysis of English perception nominals by Gisborne (1993) is the only exception that we are aware of.

7. Note that we did not include the nominalized infinitives el ver ‘the seeing’, el mirar ‘the looking’, el oír ‘the hearing’, and el escuchar ‘the listening’, which require a separate study (De Miguel 1996; Rodríguez Españeira 2004). A third nominalization derived from ver is vistazo ‘glance’, which has not been included in this study because it is morphologically derived from vista, and not directly from ver. It should also be noted that oído etymologically derives from oír (first attestation between 1220–50) (Corominas 1970), whereas audición (auditio, auditio) is a ‘cultismo’, namely a Latin word introduced in the 14th century. Vista and visión come from Latin (videre) and were first attested in the 12th–13th centuries. Mirada was first attested around 1495, and derives from the Spanish form mirar; escucha was first attested at the end of the 13th century. All these etymological differences will not have any impact on our study, though.
2. Syntax and semantics of perception verbs

In order to better understand the nature of perception nominalizations, it is necessary to first provide a general characterization of perception verbs (PVs) and briefly describe their argument structure. Perception verbs are a class of verbs that share a number of linguistic properties. Nevertheless, in most languages, their semantic nature varies according to two parameters, namely the modality of perception and the degree of agentivity of the perceiver.

As to the former property, the semantics of each verb changes according to the modality of perception: visual, auditory, gustative, tactile, and olfactory. As to the latter, dependent on the relationship between the subject perceiver and the stimulus object, in Spanish one can distinguish between the involuntary PVs ver ‘to see’ and oír ‘to hear’ and the voluntary PVs mirar ‘to look at’ and escuchar ‘to listen to’. Voluntary perception consists of an activity controlled by the perceiver, whereas involuntary perception is a mental process experienced by this participant (Kirsner & Thompson 1976). Therefore, the subject of voluntary PVs has been said to be close to a prototypical agent, whereas involuntary PVs would be performed by an experiencer subject (Gisborne 1993; Taylor 1995). This semantic distinction has been shown to have its impact on the syntax of the corresponding verbs.8

Syntactically, perception verbs are transitive verbs. However, the complex nature of perception triggers a wide range of possible complement types, namely an NP (6a) – with the subtype NP + relative clause (6b) –, NP + gerund (6c), an infinitive complement (6d), and a that-clause (6e).

(6) a. Veo a Juan.
   see.prs.1sg prep John
   ‘I see John.’

b. Veo a Juan que toca la guitarra.
   see.prs.1sg prep John who play.prs.3sg the guitar
   ‘I see John who plays the guitar.’

c. Veo a Juan tocando la guitarra.
   see.prs.1sg prep John play.prog the guitar
   ‘I see John playing the guitar.’

d. Veo a Juan tocar la guitarra.
   see.prs.1sg prep John play.inf the guitar
   ‘I see John play the guitar.’

8. In addition to the discussion on the thematic role of the subjects of perception verbs, the nature of their objects has also been the subject of debate. These have been defined as the product of the perception event or the cause of this event (see Enghels 2007:62–66).
As for involuntary PVs, they appear in a wide range of syntactic constructions, in accordance with their semantic productivity. Moreover, as has been extensively described in the literature (for instance by Miller & Lowrey 2003), the meaning of PVs, mainly visual PVs, depends on the complement they are combined with. Most complement types – in particular infinitives, gerunds and relative clauses – coincide with a direct physical perception reading, whereas others – mainly subordinated that-clauses – trigger an indirect perception or cognitive reading. Given that voluntary perception is said to always be direct perception, mirar ‘to look at’ and escuchar ‘to listen to’ cannot be complemented by a that-clause. On the other hand, since voluntary perception involves a process of directing attention toward a stimulus, its corresponding verbs, and in particular the visual ones, are easily combined with directional prepositional phrases introduced by a ‘to, at,’ para ‘to, at,’ etc. (Hanegreefs 2006):

(7) Mira a–l / hacia el sol.
    look to-det toward the sun
    ‘He looks at the sun.’

The next section examines whether the different PNs reflect the semantic oppositions that cross the field of perception. It also investigates to what extent visión, vista, mirada, on the one hand, and audición, oído, escucha, on the other hand, have suffered a process of semantic specialization, or whether they are to be defined as near-synonyms.

3. Perception nominalizations: A semantically heterogeneous class

3.1 Corpus study: The data

As opposed to previous studies, which have mainly focused on theoretical assumptions of the nominalization process (Grimshaw 1990; Alexiadou 2001; Picallo 1999; Fábregas & Marín 2012), our approach is corpus-based and provides a quantitative as well as a qualitative analysis. To begin with, Table 1 presents the

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9. During a process of direct perception, the perceiver maintains a physical relationship with the external stimuli that directly provide him with information concerning his environment. During an act of indirect perception, however, the perceiver obtains these data through deductive reasoning (Enghels 2009:786).
token frequencies\textsuperscript{10} of each of the six above-mentioned forms in the \textit{Corpus de Referencia del Español Actual} (CREA) between 2003 and 2004.\textsuperscript{11}

<table>
<thead>
<tr>
<th></th>
<th>absolute</th>
<th>/100.000</th>
</tr>
</thead>
<tbody>
<tr>
<td>vista</td>
<td>869</td>
<td>17,029779</td>
</tr>
<tr>
<td>visión</td>
<td>562</td>
<td>11,013505</td>
</tr>
<tr>
<td>mirada</td>
<td>326</td>
<td>6,3886168</td>
</tr>
<tr>
<td>oído</td>
<td>128</td>
<td>2,508414</td>
</tr>
<tr>
<td>audición</td>
<td>36</td>
<td>0,7054914</td>
</tr>
<tr>
<td>escucha</td>
<td>24</td>
<td>0,4703276</td>
</tr>
</tbody>
</table>

Note that the quantitative data confirm the superiority of visual perception compared to other modalities of perception, as has been observed in regard to perception verbs (Viberg 1984; Sweetser 1990 among others). In order to get a clear view of the semantic and syntactic behavior of these PNs, 1200 examples (200 for each PN) were retrieved from CREA, half of which were drawn from the literature and the other half from the press (1996–2004).\textsuperscript{13} PNs can occur in singular (cf. (1)) or plural form. Plurality has been associated with a referential interpretation (see Grimshaw 1990; Picallo 1999; Alexiadou 2001 among others), as well as with a bounded event reading (Picallo 1999; Bisetto & Melloni 2005; Knittel 2011). As these uses deserve a proper treatment, they will not be taken into account in the remainder of this study.

A first step toward a better comprehension of the linguistic functioning of perception nominalizations in Spanish consists of a thorough analysis of their

\textsuperscript{10} It thus counts both singular and plural forms, in the different text types.
\textsuperscript{11} Real Academia Española: Online database CREA: \textit{Corpus de referencia del español actual} (http://www.rae.es).
\textsuperscript{12} The CREA corpus (2003–2004) counts 5,102,826 words. In order to get a clear view of the occurrence of each PN, the relative frequency is calculated on a total of 100,000 words.
\textsuperscript{13} Idiomatic expressions had to be eliminated from the corpus since they could distort our results. According to definitions proposed by the Real Academia Española (2009:53–54) and Piera & Varela (1999:4403), the following types were distinguished: (a) nominal idioms: \textit{punto de vista} ‘point of view’, \textit{umbral de audición} ‘threshold of hearing’, \textit{infección de oído} ‘ear infection’, etc. (b) verbal idioms: \textit{perder de vista} ‘to lose sight of’, \textit{hacer oídos sordos} ‘to turn a deaf ear’, etc. (c) prepositional idioms: \textit{a la vista de} ‘in view of’, \textit{con vista(s) a} ‘with a view to’, etc.; and (d) adverbial idioms: \textit{a vista de pánaro} ‘from a bird’s eye view’, \textit{a la escucha} ‘listening’, etc.
polysemy. However, the study of deverbal nominalizations must also include an analysis of the suffixes added to the verbal bases (Díaz Hormiga 2005; Amador Rodríguez 2009). As will be shown in the next section, the different suffixes -ión, -do/-da/-ta and zero affixation add their own semantic and aspectual values when involved in the process of nominalization of perception verbs.

3.2 The semantics of suffixation

Following the principle of iconicity, an extra formal marking implies an additional semantic value (Haiman 1980). We therefore assume that all suffixes add a certain semantic content to their base, albeit a weak one (Melloni 2007:74).

The suffix -ión, which appears in visión and audición, is generally defined as a transpositional suffix, which principally acts as a category changer (Bisetto & Melloni 2005; Fábregas 2010). Fábregas & Marín (2012) for instance, believe that this suffix does not contain any aspectual information in itself and hence does not change the aspectual properties of the verbal base. However, the suffix -ión does present some specific features. It can convey concrete meanings to the nominal, often through metonymical transpositions (e.g. construcción ‘construction’, traducción ‘translation’) (Pharies 2002; Melloni 2007; Amador Rodríguez 2009). It thus constitutes a very flexible suffix which can add polysemy to its corresponding nominals.

The suffixes -do/-da and their allomorphs, which occur in mirada, oído and vista, are not mere transpositional nominalizers (like -ión or -miento), as they derive from the past participial form of the corresponding verb and therefore display Aktionsart properties (Melloni 2007:108). Their semantics is, in fact, strongly related to the perfective value of the past participle (Amador Rodríguez 2009), by which these suffixes are said to trigger the referential reading. Furthermore, several authors assume that the suffix -(a)da can require a path interpretation and is therefore agglutinated to verbs of inherent direction to form both event and referential nominals (e.g. llegada ‘arrival’, salida ‘exit’) (Melloni 2007; Fábregas 2010; Fábregas, Marín & McNally 2012).

Finally, zero suffixation or conversion implies that the derivation is not realized through the addition of a suffix, but through a categorical change of the base (e.g. escuchar > la escucha) (Amador Rodríguez 2009). As opposed to Fábregas and Marín (2012) we include zero suffixation within the possibilities for deriving

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14. For a more detailed definition of the notion of ‘metonymical transposition’, cf. infra Note 19.

15. The allomorphs arise as a consequence of the existence of irregular participles in Spanish (e.g. dicho, escrito, respuesta, vista).
deverbal nominalizations, but, consistent with the iconicity principle, we presume that it does not add any additional information to the verbal base. In other terms, it merely acts as a category-changing process.

### 3.3 Polysemy of perception nominalizations

A detailed analysis of the corpus shows that the PNs under scrutiny constitute a heterogeneous class. More particularly, all six PNs are semantically ambiguous and most of them, except for *oído* and *escucha*, can denote both an event and a referential object, as will be illustrated below. However, in accordance with the semantics of their verbal bases, only visual PNs can refer to a perception event and to a cognitive process. Table 2 displays the frequency of all three categories for each PN.  

<table>
<thead>
<tr>
<th></th>
<th>visión</th>
<th>vista</th>
<th>mirada</th>
<th>audición</th>
<th>oído</th>
<th>escucha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event (perception)</td>
<td>#17</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Event (cognition)</td>
<td>113</td>
<td>66,9</td>
<td>–</td>
<td>–</td>
<td>55</td>
<td>35,1</td>
</tr>
<tr>
<td>Referential</td>
<td>31</td>
<td>18,3</td>
<td>28</td>
<td>90,3</td>
<td>102</td>
<td>64,9</td>
</tr>
<tr>
<td>Total</td>
<td>169</td>
<td>100</td>
<td>31</td>
<td>100</td>
<td>157</td>
<td>100</td>
</tr>
</tbody>
</table>

To begin with, within the domain of visual perception, *visión* seems to be the nominal that displays the richest polysemy, in accordance with the semantics of its base and its suffix. It can indicate a process of direct physical visual perception, whether it be real (8a) or not (8b) – this example concerns St. Francis’ vision – but it can also receive a more referential interpretation when it denotes the faculty of perception (8c) or a general overview (8d). However, it is most frequently used to refer to a cognitive process (8e), which recalls the polysemy of its verbal base (e.g. Sweetser 1990).

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16. Note that the total number of instances is inferior to 200, because of some semantically ambiguous cases and the large number of idiomatic expressions.
17. I.e. absolute frequency.
18. Only the relevant portion of the examples is provided; the references allow the reader to retrieve the larger context.
(8) a. ante la visión de un niño mutilado
   ‘in front of the sight of a child mutilated
   por las bombas
   by the bombs’ (CREA: La Razón, 09/04/2003)

b. melodías seguidas por la visión de un ángel
   ‘melodies followed by the vision of an angel’
   (CREA: Press, 2003)

c. dos causas importantes de pérdida de visión
   two causes important of loss of sight
   ‘two important causes of loss of eyesight’ (CREA: El País, 13/05/2003)

d. ofrecer una amplia visión retrospectiva de
   offer.a wide vision retrospective of
   lo mejor y más vanguardista de
   the best and most avant-garde of
   la cinematografía española de los años sesenta
   the cinematography Spanish of the years sixty
   ‘to offer a broad retrospective overview of the best and the most
   avant-garde of the Spanish cinematography in the sixties’

e. su visión conservadora de la religión
   its vision conservative of the religion

The PN *vista* can also receive an event interpretation – albeit mainly when it is
used in the context of a lawsuit (9a). Yet, in the overwhelming majority of the
cases, it refers to a referential object. This referential reading includes the interpret-
tation of the faculty of perception (9b), or a panorama (9c).

(9) a. un segundo aplazamiento de la vista de su apelación
   a second delay of the sight of her appeal
   ‘a second delay of (the treatment of) her appeal’
   (CREA: El País, 04/06/2003)

b. La vista de-l pájaro cazador, cuando más
   the sight of-det bird hunter, when more
   alto subía, se deslumbra, se
   high rise.pst.3sg refl dazzle.prs.3sg refl
   ciega, por el exceso de luz.
   blind.prs.3sg by the excess of light
   ‘The eyesight of the bird of prey, when rising, was impaired by the
   excess of light.’
   (CREA: Press, 2003)

c. esa vista desde Plaza Nueva de-l
   ‘that view from Plaza Nueva of-det
Sacromonte vestido de blanco

Sacromonte decorated in white’ (CREA: Ideal Digital, 11/01/2003)

Finally, mirada has specialized in the referential meaning when referring to the look or gaze as instrument of perception (10a). However, as opposed to the semantics of the verb it derives from, mirada is also frequently used to indicate a cognitive process (10b):

(10) a. con el gesto cordial y la viva mirada penetrante
    with the expression friendly and the lively look penetrating
    ‘with the cordial expression and the intense penetrating look’
    (CREA: La Razón Digital, 16/12/2003)

b. Menos abundante, pero no menos
    ‘Less abundant, yet not less
    instructiva, fue su mirada sobre el arte.
    instructive, was his view on art.’
    (CREA: El Cultural, 02/01/2003)

The auditory PNs seem to be less polysemous and can more easily be situated within one particular semantic category. This is certainly the case for oído, which in all its occurrences is referential and either refers to the faculty of perception (11a) or, through a process of metonymical transposition, to the instruments of auditory perception, namely the ears (11b).19 Escucha on the other hand, always denotes an event, and more particularly it can either refer to the process of listening (12a) or a true act of eavesdropping (12b):

(11) a. sobre todo gracias a–l oído y a la visión
    above all thanks to hearing and to the visión
    ‘especially thanks to his senses of hearing and sight’
    (CREA: El País, 30/01/2003)

b. susurrándole melodías tanto en su oído
    whisper melodies both in her ear
    como en su vientre
    and in her belly
    ‘whispering melodies both in her ear and her belly’
    (CREA: Revista Natural, 03/2003)

(12) a. una escucha a lo que puede ser pensado
    a listening to what can be thought

19. Within the category of referential nominals, a particular subset has been distinguished, namely when the interpretation of the nominal refers to a concrete object due to a process that has been defined by Bisetto and Melloni (2005: 400) as ‘metonymic transposition of meaning’: La traducción está en la mesa. ‘The translation is on the table’.
Elisa Bekaert & Renata Enghels

o sentido desde el interior
or felt from the interior
‘a listening to what can be thought or felt from the interior’ (CREA: Press, 2004)

b. una probable y no suficientemente probada escucha
a probable and not sufficiently proven listening
a la novieta de turno de su hijo
at the girlfriend on duty of his son
‘a probable and not sufficiently proven act of eavesdropping at the present girlfriend of his son’ (CREA: El Mundo, 15/10/1996)

As was the case in the domain of visual perception, the nominal derived by -ión is the most polysemous one. Audición denotes a process of direct physical auditory perception, whether it be real (13a) or divine (13b), but has also become semantically specialized to denote a concert (13c), an audition (13d) or an interrogation (13e), which are also events. On the contrary, its limited referential uses denote the faculty of perception (13f):

(13) a. caen en éxtasis a–l hacer la
fall.prs.3pl into ecstasy prep-det do.inf the
oración mental o durante la audición de-l canto
prayer mental or during the hearing of-det hymn
‘become ecstatic while saying a mental prayer or while hearing the hymn’ (CREA: Press, 2003)

b. les provoca alucinaciones y audición
ben cause.prs.3sg hallucinations and hearing
de voces extrañas
of voices weird
‘causes hallucinations and hearing of weird voices’ (CREA: Press, 1997)

c. ofrecerán una audición en el colegio
offer.ft.3pl an audition in the college
‘will give a concert at the college’ (CREA: El Diario Vasco, 13/03/2001)

d. para acceder a esta escuela era necesario
to access at that school be.pst.3sg necessary

20. Note that the PN is introduced by an indefinite article. In the literature (Grimshaw 1990), this property has been defined as an indication of the referential nature of the nominalization. However, we believe that – just as was the case for plural formation – in this context the indefinite article introduces a bounded event reading.
superar una dura audición
endure.INF a hard audition
‘in order to be admitted to this school, a rigorous audition needed to be endured’ (CREA: Val, C. del, Nacho Duato. Por vos muero, 1998)
e. Udre había sido criticada en su audición ante una comisión de interrogación in front of a commission of la Eurocámara.
the European Parliament.’

(CREA: ABC, 03/11/2004)
f. en cuanto a las personas con dificultad in regard to the persons with difficulty
de visión, habla y audición of vision, speech and audition
‘with regard to persons with sight, speech and hearing difficulties’

(CREA: Press, 2004)

3.4 First conclusions

From this survey it becomes clear that, within each field defined by the modality of perception, the PNs appear to be semantically specialized. Moreover, both the semantics of the base verb and of the suffix have an impact on the polysemy of the perception noun. The profile of each PN can be summarized as follows:

visión: [visual, involuntary, – aspeectual suffix]
vista: [visual, involuntary, + perfective suffix]
mirada: [visual, voluntary, + perfective suffix]
audición: [auditory, involuntary, – aspeectual suffix]
oído: [auditory, involuntary, + perfective suffix]
escucha: [auditory, voluntary, zero affixation]

First, the perfective suffixes -ta/-da/-do often – but not exclusively – trigger a referential reading. This is certainly the case with oído (‘ear’) and vista (‘gaze’), and to a lesser extent also with mirada. As has already been stated, the suffix -(a)da particularly appears with verbs that require a path interpretation to form both event and referential nominals. Indeed, the semantics of mirar has been defined as ‘directing his view toward’, emphasizing the aspect of movement and orientation (Hanegreefs 2006). As has been claimed in the literature, -ión seems to be the most flexible suffix that allows the PN to refer to different aspects of the base verb: next to a referential interpretation, it can indicate a direct perception event, as well as
a cognitive process (with visual perception). Indeed, the polysemy of visual PNs is more complex than that of auditory PNs. More particularly, only visual PNs, in accordance with the semantics of their base verbs, allow the extension toward the domain of cognition and require a distinction to be made between event uses referring to physical perception on the one hand, and cognitive processes on the other. Audición also refers to an act of direct auditory perception, besides its referential use. Finally, escucha is the only PN that lacks a referential use and always receives a (perception) event interpretation.

Consequently, it could be said that, as to the semantics of the PNs, the opposition between voluntary vs. involuntary perception seems to be subordinated to the dichotomy between visual and auditory perception. Visual PNs most frequently extend to cognitive event readings, apart from referential uses, whereas auditory PNs – except for oído, which has gone through a lexicalization process – most frequently receive an event reading and extend toward the domain of communication. This opposition recalls a previously stated opposition between both modalities of perception. Indeed, apart from the fact that the two main perception modalities share a number of characteristics (Sweetser 1990: 38–39), visual and auditory perception are two very different ways of acquiring information about the external world (Enghels 2009). In the first place, for visual perception the experiencer subject has more control over the perception process than that of auditory perception, which is less agentive. Secondly, the visual perception of an entity merely follows from its presence in the field of view, whereas auditory perception is a necessary consequence of the effect of a stimulus being present. Finally, and most importantly, what is seen is always located in space and thus displays an objectival character. However, we do not hear an object directly but merely the sounds it produces. Sound is therefore located in time, not space, which explains the predominantly eventive nature of auditory perception (Miller & Johnson-Laird 1976).

The next sections will examine how the different PNs syntactically realize the semantic participants of the events they denote and to what extent they have a surface syntax comparable to the verbs they are derived from.

4. Realization of the argument structure of perception nominalizations

4.1 Introduction

In our corpus, PNs have four types of syntactic constructions at their disposal to realize the perceiver (i.e. First Argument, FA) and the stimulus of perception (i.e.
Second Argument, SA):²¹ (1) prepositional phrases headed by de ‘of’ (14a), (2) prepositional phrases headed by prepositions other than de, such as por (parte de) ‘by’, a ‘to’, hacia ‘toward’, sobre ‘on, at’, etc. (14b), (3) possessive determiners such as su ‘his/her’ (14c) and (4) relational adjectives (Picallo 1999) (14d).²²

(14) a. Dicha visión de-\text{el} personaje iba
that view of-DET character go.pst.3sg
destinada a un “lector pío”.
addressed to a reader pious

“That view on the character was meant for a “pious reader.””
(CREA: Press, 2003)

b. una simple mirada a una página de-\text{el} “Zohar” en hebreo
a simple look at a page of-DET Zohar in Hebrew
‘a simple look at a page of the “Zohar” in Hebrew’

(CREA: La Razón, 01/12/2004)

c. Días después sería su primera audición en Bilbao.
days after be.cond.3sg his first audition en Bilbao
‘Several days later, he would give his first concert in Bilbao.’

(CREA: ABC Cultural, 06/09/1996)

d. Lo achacaron a la histórica mala vista
do attribute.pst.3pl to the historical bad sight
de los germanos comparada con la siempre
of the Germans compared with the ever
excelente vista gala.
elegant sight Gallic

‘[They] attributed it to the historical bad eyesight of the Germans
compared with the ever excellent Gallic eyesight.’

(CREA: Sabadell, M.A., El hombre que calumnió a los monos, 2003)

²¹. We follow the terminology of Gisborne (1993) among others. The objective of this article is not to determine what the syntactic status of these complements is, as stated by Meinschaefer (2003:234): “A crucial difference between verbs and derived nominalizations is that for verbs, syntactic realization of semantic participants is obligatory, while for nominalizations (as well as for non-derived nominals) it is optional. Therefore, it is controversial whether the syntactic complements of nominalizations corresponding to arguments of the base verbs should be termed arguments too, or whether they should rather be classified as adjuncts (…).” Hence, in order to refer to the syntactic realizations of semantic participants, we will alternately use the terms ‘complement’ and ‘argument’.

²². A relational adjective refers to a set of features. For instance, marítimo ‘maritime’ denotes the entire range of properties that define the substantive mar ‘sea’ (Demonte 1999:137).
As is shown in Table 3, the six PNs under scrutiny seem to realize their argument structure quite differently.\textsuperscript{23}

Table 3. Syntactic realization of PN-arguments\textsuperscript{24}

<table>
<thead>
<tr>
<th></th>
<th>visión</th>
<th>vista</th>
<th>mirada</th>
<th>audición</th>
<th>oído</th>
<th>escucha</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#</td>
<td>%</td>
<td>#</td>
<td>%</td>
<td>#</td>
<td>%</td>
</tr>
<tr>
<td>[+FA] [-SA]</td>
<td>23</td>
<td>12,9</td>
<td>20</td>
<td>69</td>
<td>88</td>
<td>75,2</td>
</tr>
<tr>
<td>[+FA (other prep)] [-SA]</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>[-FA] [+SA]</td>
<td>114</td>
<td>64</td>
<td>9</td>
<td>31</td>
<td>22</td>
<td>18,8</td>
</tr>
<tr>
<td>[-FA] [+SA (de)]</td>
<td>109</td>
<td>[95,6]</td>
<td>9</td>
<td>[100]</td>
<td>1</td>
<td>[4,5]</td>
</tr>
<tr>
<td>[-FA] [+SA (other prep)]</td>
<td>5</td>
<td>[4,4]</td>
<td>–</td>
<td>–</td>
<td>21</td>
<td>[95,5]</td>
</tr>
<tr>
<td>[-FA] [+SA (poss)]</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>3</td>
<td>[9,1]</td>
</tr>
<tr>
<td>[-FA] [+SA (rel adj)]</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>3</td>
<td>[9,1]</td>
</tr>
<tr>
<td>[+FA] [+SA]</td>
<td>41</td>
<td>23</td>
<td>–</td>
<td>–</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>[+FA (de)] [+SA (de)]</td>
<td>1</td>
<td>[2,4]</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>[+FA (de)] [+SA (other prep)]</td>
<td>4</td>
<td>[9,8]</td>
<td>–</td>
<td>–</td>
<td>3</td>
<td>[42,9]</td>
</tr>
<tr>
<td>[+FA (poss)] [+SA (de)]</td>
<td>31</td>
<td>[75,6]</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>[+FA (poss)] [+SA (other prep)]</td>
<td>3</td>
<td>[7,3]</td>
<td>–</td>
<td>–</td>
<td>4</td>
<td>[57,1]</td>
</tr>
<tr>
<td>[+FA (rel adj)] [+SA (de)]</td>
<td>2</td>
<td>[4,9]</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>178</td>
<td>100</td>
<td>29</td>
<td>100</td>
<td>117</td>
<td>100</td>
</tr>
</tbody>
</table>

\textsuperscript{23} Note that the examples without any trace of argument realization have not been included in the table, which explains why the total number of examples differs from the one presented in Table 2.

\textsuperscript{24} In this table, the grey rows indicate the argument combinations, namely [+FA][-SA], [-FA][+SA] or [+FA][+SA], whereas the white zones show the frequency of the several syntactic constructions within these types. The composition of Table 5 will be similar.
First, referential nominals such as oído (15a) and vista (15b) often realize their FA through a possessive. This possessive replaces the FA and SA which otherwise could be introduced by the preposition de ‘of’:

\[
\begin{align*}
\text{(15) a. } & \text{Para vivir así, susurró él en su } \text{ear, más vale no morirse.} \\
& \text{to live.INF like this whisper.PST.3SG he in her ear, more be_worth.PRS.3SG not die.INF} \\
& \text{‘To live like this, he whispered in her ear, it is best not to die.’} \\
& \text{(CREA: Pérez-Reverte, A., La Reina del Sur, 2002)}
\end{align*}
\]

\[
\begin{align*}
\text{(15) b. } & \text{Mi mala vista me jugó más de una mala pasada.} \\
& \text{my bad sight BEN play.PST.3SG more than one bad trick} \\
& \text{‘My bad eyesight has played more than one trick on me.’} \\
& \text{(CREA: El País, 22/03/2003)}
\end{align*}
\]

Secondly, referential nominals do not allow for their SA being introduced by a relational adjective (Picallo 1999:385), which explains their absence with oído, vista and mirada.

In what follows, only the distribution of prepositional phrases will be considered. Given that our aim is to describe the syntactic realization of the participants by a complement, examples where none of the participants were expressed have also been excluded (16):\textsuperscript{25}

\[
\begin{align*}
\text{(16) } & \text{versos divinos cantados por un ente sobrenatural} \\
& \text{verses divine sing.PTCP by a being supernatural} \\
& \text{en medio de una visión} \\
& \text{in middle of a vision} \\
& \text{‘divine verses sung by a supernatural being in a vision’} \text{ (CREA: Press, 2003)}
\end{align*}
\]

Indeed, as stated by Heyvaert (2008:248–249), “there is no automatic transfer from clause to NP as far as obligatory participants are concerned”, which also seems to be the case for PNs given the high frequency of zero realization in the nominal domain.

4.2 Results

Table 4 shows the results of classifying our examples according to the presence of one or both complements, when expressed by a prepositional phrase.

\textsuperscript{25} These methodological restrictions reduce our corpus considerably and hence leaves us with a sample of 275 relevant occurrences of the abovementioned PNs.
As opposed to what could be observed for the PVs, it immediately becomes clear that the expression of both arguments with PNs is very rare. Only eight cases were observed, all of which were situated within the domain of visual perception (cf. infra Eg. (23)). The data also point toward a dichotomy between, on the one hand, nominalizations that clearly tend to syntactically realize the argument referring to the perceiver (17a), namely mirada, oído and to some extent also vista, and, on the other hand, PNs that combine with arguments referring to the stimulus of perception (17b), namely visión, audición, and escucha.

(17) a. bajo la mirada de-l internauta
   ‘in front of the view of the netter’
   (CREA: El País, 30/01/2003)

   b. La maternidad te cambia la visión
del mundo ben change.prs.3sg the view
de las cosas y el estándar de valores.
   ‘Motherhood changes your view on things and the standard of values.’
   (CREA: El País, 14/06/2004)

This varied behavior of the PNs in the expression of their complements raises a number of interesting questions. First, as opposed to what has been observed for PVs, the opposition between voluntary and involuntary perception does not seem to be as important for the syntactic behavior of PNs; mirada and escucha for instance, are both voluntary PNs but display a very different syntactic behavior. Hence, the question arises which of the PNs’ semantic properties actually have an impact on their argument realization.

The second interesting issue that follows from the differences in how PNs behave involves the distinction between first argument and second argument realization. This opposition recalls the difference between referential nominals, on the one hand, and event and state nominals, on the other. Indeed, it is generally
accepted that events (the translation of a letter by Emilio) and states (John’s preoccupation with the economy) are naturally in opposition to referential nominals (a construction, that translation), as they usually preserve the argument structure of the base verb (Melloni 2007; Fábregas & Marín 2012). Indeed, traditionally, event nominals are said to carry an obligatory SA (Grimshaw 1990; Picallo 1999; Alexiadou 2001). This claim, albeit an uncompromising one, assumes that there is a systematic link between the presence of the SA and the event reading. On the contrary, referential nominals are often said to absorb the internal argument of the corresponding verb, by which they only allow the expression of the FA. This FA is usually interpreted as a possessor (Alexiadou 2001; Bisetto & Melloni 2005; Gutiérrez Ordóñez 2005; Amador Rodríguez 2009). Although many authors, as well as our own results, have pointed to counter-examples, referential nominals are thus generally assumed to prefer the expression of the FA. In other words, these data confirm that visión, audición and escucha mainly receive an event reading, while mirada, oído and, to some extent vista, which presents an intermediate status, favor the expression of the FA and thus syntactically behave like referential nominals. However, in what follows, we will demonstrate that within the category of event readings, perception events and cognitive events also present some salient differences, which put into question the classification of the cognitive event type.

To this end Table 5 provides a more detailed account of the prepositions that introduce the postnominal complements of PNs.

Table 5. Syntactic realization of prepositional PN-arguments

<table>
<thead>
<tr>
<th></th>
<th>visión</th>
<th>vista</th>
<th>mirada</th>
<th>audición</th>
<th>oído</th>
<th>escucha</th>
</tr>
</thead>
<tbody>
<tr>
<td>[+FA]</td>
<td>[– SA]</td>
<td>6</td>
<td>4,8</td>
<td>6</td>
<td>45</td>
<td>64,3</td>
</tr>
<tr>
<td>[+FA (de)] [– SA]</td>
<td>6</td>
<td>[100]</td>
<td>6</td>
<td>[100]</td>
<td>4</td>
<td>[100]</td>
</tr>
<tr>
<td>[+FA (por (parte de))] [– SA]</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>[– FA]</td>
<td>[+ SA]</td>
<td>114</td>
<td>91,2</td>
<td>9</td>
<td>60</td>
<td>22</td>
</tr>
</tbody>
</table>

(Continued)
When we consider the syntactic realization of the FA, we observe that it is expressed almost exclusively by de-phrases ‘of’. The preposition por (parte de) ‘by’ typically introduces agents and is therefore related to an event reading, so that both state and referential nominalizations reject the use of this preposition. More particularly, since only pure agents can be introduced by por (parte de) ‘by’, state nominals merely allow the expression of a non-volitional causer of the state by de ‘of’ (el aburrimiento de Juan) (Melloni 2007; Fábregas & Marín 2012). Moreover, referential nominalizations combine with genitive possessors, which are expressed by a possessive determinant or the preposition de ‘of’ (Picallo 1999; Amador Rodríguez 2009). It is thus significant that in our sample the only occurrence of por (parte de) ‘by’ was attested by escucha, which always denotes a volitional perception event (cf. Table 2):

(18) para impedir cualquier escucha por parte de

to avoid any listening by part of

- personas no autorizadas
- persons non-authorized

‘to avoid any eavesdropping by non-authorized persons’

(CREA: García de Enterría, E.; Tizzano, A.; Alonso García, R., Código de la Unión Europea, 1996)

The expression of the SA offers a more complex pattern. In our corpus, the SA is generally expressed through a de-phrase ‘of’, except for mirada, which can be used with a wide range of prepositions, such as a ‘to, at’, hacia ‘toward’, sobre ‘on, at’, etc.
This syntactic variation can be explained by two factors. First, as has been stated above (cf. Section 2), voluntary perception (mirada, escucha), and in particular visual perception (mirada), involves a process of directing attention toward a stimulus. Indeed, in our corpus, mirada (59.1%) (19), and to a minor extent escucha (9.1%) (12a;b), allow for the locative directional prepositions a ‘to, at’ and hacia ‘toward’ to introduce the SA, just as their corresponding PVs.

(19) a. la mirada a los valores esenciales
   the look at the values essential
   ‘the look at the essential values’
   (CREA: Press, 2003)

   b. la mirada hacia el usuario único
   the look toward the user single
   ‘the look at the particular user’

The second factor to explain the syntactic variation of the SA involves the use of certain prepositions and their relationship with the perception vs. cognitive event reading. As has already been shown, PVs differ from PNs in that the opposition between voluntary and involuntary perception is crucial for the former, while the modality of perception seems to be more determinative within the field of the latter. This is confirmed by the syntactic analysis of our corpus in which the use of de ‘of’ coincides with both a cognitive event (20a) and a perception event reading (20b). However, other prepositions and in particular sobre ‘on, at,’ clearly trigger a cognitive event reading only of visual perception, in both voluntary (21a) and involuntary (21b) PNs.

(20) a. la visión pragmática de la relación educación-trabajo
   the view pragmatic of the relationship education work
   ‘the pragmatic view of the relationship between education and work’
   (CREA: Comunidad Escolar, 03/12/2003)

   b. ha posibilitado la visión de la respuesta en pantalla
   make_possible.PST.3SG the view of the answer on screen
   ‘made possible to view the answer on the screen’
   (CREA: Rodríguez Calafat, D., Informática avanzada al alcance de todos, 2004)

(21) a. desarrollar una visión crítica sobre los acontecimientos cotidianos
   develop a view critical on the events daily
   ‘to develop a critical view on the daily events’
   (CREA: Arqueoweb, 01/05/2004)

   b. Este film constituye la insólita mirada
   this movie constitutes the unusual look
This movie provides an unusual view on the emotional and sexual repression of a group of nuns in a Tibetan convent.  

What is more, the presence of an abstract SA must be considered as a clear indication of the cognitive event reading of the PN. Table 6 demonstrates that [+SA (de)] allows for a cognitive reading, as these SAs are frequently abstract (20a). Moreover, with visión, which clearly prefers this cognitive reading (66,9%) (cf. Table 2), the use of a preposition other than de, such as hacia ‘toward’ (22a) or respecto a ‘about’ (22b), is restricted to abstract SAs:

(22) a. una visión directa, humanísima y llena de comprensión hacia el oficio más viejo de-l mundo  
‘a direct, most humane view full of comprehension toward the world’s oldest profession’  
(CREA: La Razón, 09/04/2003)

b. la nueva visión respecto a-l uso de la tecnología  
‘the new view on the use of technology’  
(CREA: Geofocus, 2003)

Table 6. Semantic nature of the SA

<table>
<thead>
<tr>
<th></th>
<th>visión</th>
<th>mirada</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#</td>
<td>%</td>
</tr>
<tr>
<td>[-FA]</td>
<td>114</td>
<td>95,8</td>
</tr>
<tr>
<td>[-FA] [+ SA (de)]</td>
<td>109</td>
<td>[95,6]</td>
</tr>
<tr>
<td>SA [+ conc]</td>
<td>44</td>
<td>[40,4]</td>
</tr>
</tbody>
</table>

29. Just like Tables 3 and 5, Table 6 contains subdivisions. Whereas the dark grey rows show the argument combinations, the light grey rows indicate the frequency of the different prepositions within these combinations and the white zones give an idea of the concrete or abstract character of the SA.
To summarize, two factors elicit the use of a preposition other than *de* ‘of’ to introduce the SA: (a) the directionality of voluntary perception in general, and (b) the cognitive event reading of visual perception. As both features converge in *mirada*, this PN allows for the widest range of different prepositions.

Finally, in our corpus, the syntactic realization of both arguments is limited to visual PNs, *visión* and *mirada*, and in all instances provokes a cognitive event reading (23), which is emphasized by the absence of concrete SAs (cf. Table 6).

(23) a. *la “visión positiva” de Mohamed VI respecto a los múltiples desafíos que perturban la buena marcha de la integración africana* ‘Mohamed VI’s “positive view” on “the various challenges that interfere with a fluent African integration”’ (CREA: El Mundo, 10/11/2004)

b. *24 Hour Party People, la mirada más canalla y documentalista de Michael Winterbottom sobre la escena musical de Manchester*
on the scene musical of Manchester

durante las décadas de los 70 y 80.
during the decades of the 70 and 80

‘24-Hour Party People, Michael Winterbottom’s nastiest and most documentary look on the Manchester music scene during the seventies and the eighties.’

(CREA: El Cultural, 02/01/2003)

5. Conclusions

To sum up, a number of interesting conclusions can be drawn from exploring the similarities and differences between perception verbs and their related nominals. Just like the verbs they are derived from, the different PNs cannot form a single unified class since they vary considerably in their semantic and syntactic behavior.

In the first part of this study, it was shown that the different subsets coinciding with the modality of perception, namely visión, vista, mirada and audición, oído, escucha present semantic specialization. More particularly, a distinction has been made between more eventive nominalizations – visión, audición and escucha – and nominalizations tending toward referential interpretations – vista, mirada, oído. This dichotomy was shown to be largely predictable from the semantics of the suffixes that the nominalizations carry. In this semantic characterization, the opposition between voluntary and involuntary perception turned out to be less decisive than the distinction between visual and auditory perception: except for oído, auditory PNs clearly tend toward direct perception event readings (often with communicative meaning), whereas visual PNs frequently trigger the cognitive event reading. This semantic extension coincides with what has been observed for their corresponding verbs.

In the second part of this study, it was shown that, as has been argued for other types of nominalization, the semantics of PNs leads to differences in their morpho-syntactic behavior. A study of the behavior of postnominal prepositional phrases has demonstrated that the six PNs display clear preferences as to the realization of their arguments: the referential nominals oído, mirada and vista most frequently combine with the syntactic expression of the First Argument or perceiver, whereas the event nominalizations visión, audición and escucha in most cases trigger the expression of the Second Argument or object of perception. A more detailed analysis revealed that in the case of visual PNs the cognitive reading is to some extent related to abstract SAs and the use of particular prepositions, which parallels the use of the that-clause after PVs. Moreover, this reading exhibits some similarities with state nominals, such as the impossibility to use the preposition por (parte de) ‘by’ as FA marker. This hybrid character of PNs, behaving both as event nominals and state nominals, recalls the difficult
aspectual classification of the verbs they derive from and will constitute the topic of future research.

References


CHAPTER 4

Case assignment, aspect, and (non-)expression of patients

A study of the internal structure of Czech verbal nouns

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After reviewing various surface realizations of agents, patients and goals in Czech nominalizations, I present a syntactic analysis which straightforwardly accounts for the case form of these arguments, based on the well-known idea in the literature that nouns can share with verbs a substantive part of the extended verbal projection. Moreover, both imperfective verbs and nouns can combine with null existentially interpreted patients while neither perfective verbs nor perfective nouns allow them. I explain this as the interaction of the properties of verbal Aspect/Quantity category and the missing number projection of implicit patients. Finally, I show that only nominals (regardless of their aspecual value) but not verbs can combine with null patients referring to an entity from the previous discourse.

1. Introduction

Nouns derived from verbs preserve to a certain extent the argument structure of verbs (Chomsky 1970; Abney 1987; Grimshaw 1990, and many others). Among these deverbal nouns, names of events are the most faithful to the original valency – as opposed to names of agents, instruments, places, or results. One of the reasons is that they combine with both an agent as well as various internal arguments, as in the classical example in (1), dating back to Chomsky (1970).

(1) the enemy’s destruction of the city

On the other hand, the amount of syntactic structure shared by verbs and nouns is a matter of a long-standing debate in linguistics. This article contributes to this
debate by arguing that certain event nouns have not only the same valency frames as corresponding verbs but also the same aspe... (see Borer 1999 or Alexiadou 2001 for a similar conclusion).

I focus on one type of Czech deverbal event-naming nouns, those ending in -ní/tí. They are sometimes called “verbal nouns” because they are the most “verb-like” of all Czech deverbal nominals. These nouns also represent the most productive class of deverbal nouns in Czech because they can be derived from all verbal stems except those of a few modal verbs. In English, they have the closest parallel in the so-called “ing-of” gerundial nouns such as Peter’s smoking of cigars, cf. Abney (1987). The prenominal position, which is in English occupied by the Saxon genitive (the possessive expression formed by adding an apostrophic ’s to a noun), is in Czech occupied by the so-called possessive adjective, formed from a noun by adding a suffix -ovo (for masculine and neuter nouns in the role of possessors) or -ino (for feminine nouns as possessors). An example is given in (2), with a possessive adjective nepřítelovo ‘enemy’s’ derived from the noun nepřítel ‘enemy’. The English postnominal prepositional of-phrase formally corresponds to a noun in non-prepositional genitive morphological case in Czech.

(2) nepřítel-ovo zničení měst-a
    enemy-poss.nom.sg destroying.nom.sg town-gen.sg
    ‘the enemy’s destruction of the town’

2. Nominal valency frames and their surface realization

In this article I look only at verbal nouns that combine with at least two arguments, because they are the most relevant for the analysis I am going to present. (However, my analysis could be extended to monovalent verbal nouns as well.) Nominal valency frames of different types of verbal nouns have been already discussed multiple times in a more general way in Czech literature, esp. by Novotný (1980), Piťha (1992), Karlík (2000 and 2002), Panevová (2000), Veselovská (2001), Procházková (2006), and Kolářová (2010).

2.1 (Mono)transitive nominalizations

If both agent and patient are overtly expressed with verbal nouns, the patient is assigned postnominal genitive case and the agent is assigned postnominal instrumental case (a parallel to an English by-phrase). I use the terms ‘agent’ and ‘patient’ in the sense of theta-roles, i.e. as generalizations over a part of the semantics of predicates that is syntactically relevant. One theta-role can thus subsume several specific thematic relations, which are nevertheless all associated with one structural position.
(3) přemlouvání stařenk-y podvodným prodavač-em
persuading.NOM.SG grandma-GEN.SG fraudulent-INS.SG seller-INS.SG
‘the persuading of an old lady by a fraudulent seller’

Singular animate nouns without any modifier, both agents and patients, can also take the form of prenominal possessive adjectives. For example, prodavačovo ‘seller’s’ in (4) functions as an agent, and stařenčino ‘old lady’s’ in (5) functions as a patient. The construction in (5) has a question mark because it is slightly degraded with respect to the more preferred construction with the equivalent meaning in (4).

(4) prodavač-ovo přemlouvání stařenk-y
seller-POS S persuading.NOM.SG grandma-GEN.SG
‘a seller’s persuading of an old lady’

(5) stařenč-ino přemlouvání prodavač-em
grandma-POS persuading.NOM.SG seller-INS.SG
‘an old lady’s persuading by a seller’

Agents can appear in the postnominal genitive phrase only if the patient is not present overtly. The resulting construction is then ambiguous between an agent and a patient interpretation of the genitive phrase. The same ambiguity is attested with the prenominal possessive adjective if no postnominal genitive phrase is present.

(6) a. přemlouvání podvodného prodavače
persuading.NOM.SG fraudulent-GEN.SG seller-GEN.SG
‘a fraudulent seller’s persuading’ (‘of/by a seller’)

b. prodavač-ovo přemlouvání
seller-POS persuading.NOM.SG
‘a seller’s persuading’ (‘of/a seller’)

Multiple postnominal genitives are not allowed unless one of them is inherent case associated with the underlying verb; see Panevová (2000) and this volume for examples.

(7) *přemlouvání stařenk-ý prodavače
persuading.NOM.SG grandma-GEN.SG seller-GEN.SG
‘the persuading of an old lady of a seller’

2.2 Ditransitive nominalizations

Dvořák (2010) shows that there are two types of ditransitives in Czech:

1. Dat>Acc ditransitives which have the goal-like argument (corresponding to the indirect object) above the patient (corresponding to the direct object). They
involve the projection of the applicative phrase $v_{\text{Appl}}\ P$ (Marantz 1993) assigning dative case in its specifier and associated with a beneficiary/recipient theta-role. On account of this dative-assigning position, these ditransitives belong to "high dative verbs"; see example (8a) with a verb *darovat* 'to give'.

2. **Acc>Dat** ditransitives which have the direct object above the indirect one and which should be analyzed as involving the conflated null preposition ($P_0$) assigning oblique case and associated with a path theta-role, cf. the similar analysis of McFadden (2004) for German. These ditransitives belong to "low dative verbs" and they are represented by the verb *přizpůsobit* 'to adjust' in (8b).

    teacher.nom gave Mary-dat book-acc
    ‘The teacher gave Mary a book.’

b. *Učitel* přizpůsobil *cvik-y student-ům.*
    teacher.nom adjusted exercises-acc students-dat
    ‘The teacher adjusted the exercises to students’ needs.’

On the surface, both word orders (an accusative argument preceding a dative one as well as a dative argument preceding an accusative one) are allowed for both types of verbs, but Dvořák (2010) provides multiple arguments showing that only one of these orders is basic for each class of ditransitive verbs.

We just saw in 2.1 that a patient argument in accusative always changes its form to genitive case (or a possessive adjective) in *monotransitive* nominalizations. When *ditransitives* are nominalized, a patient also always bears postnominal genitive (or a prenominal possessive adjective form), as expected, while a goal retains its dative case. Interestingly, the patient and the goal arguments appear in the Gen>Dat order for both Acc>Dat as well as Dat>Acc verbs undergoing nominalization. If we expected the plain parallelism between the verbal and the nominal structure, the word order under nominalization would be as expected for low dative verbs but the opposite from the expected one for high dative verbs.

(9) **Dat>Acc** ditransitive nominalized

a. *Darování knih-y Mari-i (se učitel-i nevyplatilo).*
    giving.nom book-gen Mary-dat refl teacher-dat not_paid_off
    ‘Giving a book to Mary (didn’t pay off to the teacher).’

b. *Darování Mari-i knih-y (se učitel-i nevyplatilo).*
    giving.nom Mary-dat book-gen refl teacher-dat not_paid_off
    ‘Giving Mary a book (didn’t pay off to the teacher).’
(10) Acc>Dat ditransitive nominalized
   a. Přizpůsobení cvik-ů student-ům (bylo marné).
      adjusting.NOM exercises-GEN students-DAT was useless
      ‘Adjusting the exercises to students’ needs (was useless).’
   b. *Přizpůsobení student-ům cvik-ů (bylo marné).
      adjusting.NOM students-DAT exercises-GEN was useless

It was noted by an anonymous reviewer that the requirement for the genitive to precede the dative in nominalizations can be subsumed under a more general requirement that the genitive always has to precede all other postnominal arguments and adjuncts. See the contrast between (3) where the agent in the instrumental follows the patient in the genitive and the following example where the agent in the instrumental precedes the patient in the genitive.

(11) *přemlouvání prodavač-em stařenk-y
      persuading.NOM.SG seller-INS.SG grandma-GEN.SG
      ‘the persuading by a seller of an old lady’

2.3 Syntactic realization of participants

When analyzing the syntactic structure of verbal nouns, I advocate the morphosyntactic approach based on the assumption in Generative Grammar that a sequence of functional categories is superimposed above the lexical entry (see esp. the literature within the Distributed Morphology framework). Nominals derived from verbs have a partially common functional sequence that is “closed-off” by a lexical-category morpheme at a certain point (Fu et al. 2001). Concretely, Czech verbal nouns have a nominalizing head (spelled-out as a suffix -í) attached to the extended verbal projection (the term due to Grimshaw 1991). This verbal projection contains at least a (big) verb phrase (VP), spelled out as a verbal root,1 a little verb phrase (vP), spelled-out as various stem suffixes, see Jabłońska (2007), and a voice phrase (VoiceP), spelled-out as a “passivizing” morpheme -n/t-. See the schematic tree diagram for -ní/tí nominalizations in the Figure 1 below, followed by a brief discussion of how various types of participants are introduced syntactically and how they receive case. A more detailed discussion of this syntactic implementation can be found in Dvořák (2011).

1. What I label as “VP” is nowadays often labeled as “√P” instead, in order to capture the intuition that the root itself is uncategorized and it is the little v that functions as a verbalizer, as proposed in Marantz (1997 and 2007). I stick to a more traditional way of labeling here.
2.3.1 Patients
In my analysis I employ the tripartite verbal phrase, introduced in Pylkkänen (2002), consisting of a VoiceP, a vP and a lexical projection. The [-active] Voice present in nominalizations is defective in the sense that it has no case-marking capacity. As a result, the Determiner phrase (DP) merged in the internal argument position of the specifier of a verbal phrase (Spec,VP) gets the patient theta-role (thus conforming to UTAH (Baker 1997)) but not the canonical object case-marking. The patient-expressing DP is then case-marked later: in the spirit of Case Filter (Chomsky 1980: 25), it undergoes raising that leads to the DP’s local relationship with the genitive-valuing nominal head.

2.3.2 Agents
The unavailability of accusative case-marking is connected with the inability of a verb to project an agent theta-role (Burzio 1986). The agent, normally projected in Spec,VoiceP (Hale & Keyser 1993; Chomsky 1995; Kratzer 1996) thus becomes free to reappear in an adjunct instrumental DP, cf. Roeper & van Hout (1999: 187). The deficiency of Voice in nominals is confirmed by the presence of an -n/t- morpheme which is in Czech found also in passive structures (but see Procházková 2006: 64–67 for discussion of the different scope of this suffix in passives as opposed to nominalizations).
2.3.3 Other arguments

If such categories like dative-assigning $v_{\text{Appl}}$ or $P_0$ are present in the nominalized verbal structure, it explains not only the preserved dative morphological marking but also that dative DPs are associated with the same theta-roles as they were in the purely verbal structure.

2.3.4 Details of implementation

Under the assumption that the derivation proceeds by phases (Chomsky 2000, 2001) whereby Spell-Out applies to the complements of phase heads, the patient DP merged within a VP has to move to the edge of a VoiceP phase right before $vP$ (or $v_{\text{Appl}}P$) is sent to Spell-Out. Otherwise the derivation won’t converge due to the unchecked/unassigned case feature on the object DP. This movement complies with the Last Resort condition (Chomsky 1995: 256) because it is a necessary step to eliminate unchecked case features on a DP that could not be eliminated otherwise.

This DP movement explains why direct objects have to precede indirect objects in both types of nominalized ditransitives, as shown in (9b) and (10b). Dative DPs, on the other hand, stay in situ because their theta-marking and their (inherent) case-assignment are simultaneous. The same would be true for all other inherently case-marked DPs as well as for prepositional phrases which appear in the valency frames of nominalized verbs.

3. Aspectual characteristics of verbal nouns

3.1 Aspectual affixes

Czech verbal nouns can combine with the same set of aspectual affixes as verbs, namely with perfectivization prefixes such as pře- or do-, and secondary-imperfectivization suffixes such as -va-.

(12) a. malova-l pře-malova-l
    paint.ipfv-pst pref-paint.pfv-pst
    ‘(he) was painting’ ‘(he) repainted’
    pře-malová-va-l
    pref-paint-ipfv-pst
    ‘(he) was repainting’

b. malová-ní pře-malová-ní
    paint.ipfv-ing.nom pref-paint.pfv-ing.nom
    ‘painting’ ‘repainting’
    pře-malová-vá-ní
    pref-paint-ipfv-ing.nom
    ‘process of repainting’
It has been agreed in the literature that there are two types of prefixes in Slavic: lexical (or VP-internal) such as na- in *nanést* ‘to dash something somewhere’ or po- in *pomalovat* ‘to cover something with painting’, and superlexical (or VP-external) such as cumulative na- in *napéct* ‘to bake a lot of’ or distributive po- as in *poutrácet* ‘to spend bit by bit’; see Smith (1991) for the introduction of this distinction. Many researchers working on Slavic languages assume that lexical prefixes are generated within a VP under Res (the head of a Resultative Phrase) or a parallel category that introduces a result state subevent (Svenonius 2004; Ramchand 2004; Romanova 2004, among others). Since these prefixes change the event type, they constitute so-called inner aspect (telicity). Superlexical prefixes, on the other hand, are generated outside of VP, much like adverbs, and they constitute what is called outer aspect (AspP); see Gehrke (2008), who explicitly argues that Czech superlexical prefixes function as adverbial modifiers. Secondary imperfectivization suffixes (-va-) are typically analyzed as a specific instantiation of the Asp head itself (Ramchand 2004: 355).

The purpose of this section is not to embrace the extremely complicated area of aspectual affixes in Slavic but to point out that if we want to capture fully the parallels between verbs and nominals, including those exemplified in (12) and (13), we have to assume that such verbal syntactic projections like ResP or AspP are present within the nominals as well, as depicted in Figure 2 below. Moreover, we can expect that the aspect- and telicity-related projections will further interact with the projections introducing arguments that were discussed in 2.3. Section 4.3 is devoted to one example of such interaction, namely the interaction between VP and AspP.

### 3.2 Aspectual adverbials

Other support for the presence of an aspectual node in the tree in Figure 2 comes from aspect-sensitive adverbials. Perfective verbs (those describing telic events)
combine only with terminative adverbials like “in an hour” while imperfective verbs (verbs with a primary atelic interpretation) combine with durative adverbials like “for an hour” (see Dowty 1979 for the introduction of this test in English). In Czech, imperfective verbs can describe telic events as well but only in habitual contexts. As expected, in that case they can combine with terminative adverbials (Dočekal & Kučerová 2010). Importantly, perfective (14b) and imperfective (15b) nominals fully follow the same pattern.

(14) a. *na-malova-t jeden portrét *hodin-u/za hodin-u
    pref-paint.pfv-inf one portrait.acc hour.acc/in hour.acc
    ‘to paint a portrait for an hour/in an hour’

    b. *na-malová-ní jednoho
    pref-paint.pfv-Ing.nom one
    portrait-gen hour.acc/in hour.acc
    ‘painting a portrait for an hour/in an hour’

2. “In time x” adverbials are ambiguous between the meaning where the whole event takes time x and the meaning where the event described by the VP starts after time x has passed. Here I consider only the former, event-measuring interpretation.
(15) a. malova-t jeden portrét hodin-u/za hodin-u
    paint.IPfv-INF one portrait.ACC hour-ACC/in hour-ACC
    ‘to be painting a portrait for an hour/in an hour (hab.)’

b. malová-ní jednoho portrét-u hodin-u/za hodin-u
    paint.IPfv-ing.NOM one portrait-GEN hour-ACC/in hour ACC
    ‘painting a portrait for an hour/in an hour (habitually)’

Notice that Czech -ní/tí nominals are very different from English -ing nominals in this respect. It is known that English nominalizations neutralize the difference between durative and terminative adverbials, as the full grammaticality of the gloss in (14b) confirms.

4. Aspect-related patient obligatoriness

4.1 Introducing the contrast between perfectives and imperfectives

Czech verbal nouns take not only the same aspectual affixes and aspectual modifiers as verbs but they also seem to impose the same requirements on the expression of patients. Procházková (2006) shows that the patient of nouns derived from imperfective verbal stems does not have to be expressed overtly but can be just “implicitly satisfied” by being existentially quantified over (Zucchi 1989: 186). In contrast, nouns derived from transitive perfective stems become typically ungrammatical unless the slot for the patient gets filled by some overt DP. See the parallelism between the verbal structures in (16a) and (17a), and the nominal structures in (16b) and (17b). The underscore in the following examples stands for the phonetically null patient.

(16) a. Včera večer jsme kreslili__/*nakreslili__.
yesterday evening aux.1pl drew.IPfv drew.PFV
    ‘We were drawing/drew yesterday in the evening.’

b. Celý večer nám zabralo kreslení__/*nakreslení__.
    whole evening us took drawing.IPfv drawing.PFV
    ‘Drawing took us the whole evening.’

(17) a. V neděli jsme lovili__/*ulovili__ v lese.
on Sunday aux.1pl hunted.IPfv/hunted.PFV in forest
    ‘On Sunday, we were hunting/hunted in the forest.’

b. Tát-ovi udělalo radost lovení__/*ulovení__ v lese.
dad-DAT made joy hunting.IPfv/hunting.PFV in forest
    ‘Hunting in the forest made my dad happy.’

Even though the observation made in Procházková (2006) is correct, the matter is not as simple as it might seem. The contrast between perfective and imperfective
nominals holds only in all-new contexts (typically represented by “out-of-the-blue” contexts). I leave the discussion of the cases where nominals do not behave like verbs when it comes to non-expressing patients for the Section 5.1.

Note on resultativity
Before we look at the aspect-driven contrast in (16) and (17), I would like to point out that all of the generalizations presented so far hold for verbal nouns which describe events. The eventive interpretation is the primary interpretation of -nī/tī nominals though they can often have the derived, resultative interpretation. The valency frames of such resultative nouns are more varied (see esp. Kolářová 2010 and this volume) and the aspect-related properties described above do not hold for them either. See the contrast between the eventive (18b) and the resultative (18c) noun oznámení, derived from the verbal stem oznámi- ‘announce.’ The patient is only omissible with the resultative noun in (18c).

(18) a. Komise konečně oznámila *(výsledk-y).
   PFV committee finally announced results-ACC
   ‘The committee finally announced the results.’

b. Oznámení *(výsledk-ů) za tak krátkou chvíli
   PFV announcing results-gen in such short while
   all.DAT embarrassed
   ‘Nobody liked the announcement of the results in such a short time.’

c. Na nástěnce viselo oznámení *(změn-y)
   PFV on board hang announcing change-gen
   seat-gen company-gen
   ‘There was an announcement (of the change of the company’s headquarters) on the notice board.’

Note on perfective verbs
The generalization that perfective transitive verbs need an overt object does not hold for a few lexicalized cases, which are well-known in the literature (Daneš 1971; Panevová 1974, among others). The most prominent of these are the verbs denoting various chores in (19) and the verbs denoting committing something wrong in (20a) and (20b). That this is not a systematic exception is shown by two facts: omitting an overt object is allowed neither for all the house works nor for all the wrong-doings. Moreover, near synonyms behave differently when it comes to allowing null objects, cf. the contrast between the verbs zabít ‘kill’ versus zavraždit ‘murder’ in (20a), or zradit ‘betray’ versus podvěst ‘deceive’ in (20b).
(19) **Karel vytřel__, vysál__, uklidil__, zametl__.**
Charles wiped.PFV vacuumed.PFV cleaned.PFV swept.PFV
vypral__, nakoupil__, ustlal__, uvařil__.  
laundered.PFV shopped.PFV made_the_bed.PFV cooked.PFV

‘Charles wiped the floor, vacuumed, cleaned up, swept the floor, did the
laundry, did the shopping, made the bed, and cooked dinner.’

(20) a. **Karel zabil__. / ??Karel zavraždil__.**
Charles killed.PFV Charles murdered.PFV
‘Charles killed.’ ‘Charles murdered.’

b. **Karel zradil__. / ??Karel podvedl__.**
Charles betrayed.PFV Charles deceived.PFV
‘Charles betrayed.’ ‘Charles deceived.’

None of the null patients combining with perfective verbs in (19) gets interpreted
existentially, i.e. as a null “something”. The empty position is rather interpreted as
a prototypical object that the given housework applies to, and which can be further
contextually determined. For example, object-less **uvařit** ‘to cook (completely)’
doesn’t mean just to cook something but to make a full meal, i.e. to make dinner/
supper, depending on the situation. Similarly, the perfectives with the grammatical
null object in (20a) and (20b) entail that there was one particular person or group
of people who were killed/betrayed by Charles, not just some unquantified peo-
ple. Most relevantly for the line of analysis presented here, both verbs and nouns
behave **equally** when it comes to allowing these sorts of null patients in combina-
tion with perfective stems.

(21) **Vyprání a uklizení zabralo Karl-ovi celý den.**
laundering.PFV and cleaning.PFV took Charles-DAT whole day
‘Doing the laundry and cleaning up took Charles the whole day.’

4.2 Existentially interpreted null patients

There are numerous proposals in the literature addressing how to analyze the non-
over explicit arguments, ranging from analyses that give them a full syntactic
status to analyses that treat them as only conceptual elements with no linguistic
impact whatsoever; see Bhatt & Pancheva (2006) for a nice summary of the field.
In Dvořák (2013), I argue that implicit patients of the sorts exemplified in (16) and
(17) (i.e. those that systematically combine with imperfectives) should be analyzed
on a par with indefinitely interpreted bare plurals such as **knihy** ‘books’, and bare
mass nouns such as **sůl** ‘salt’ because they behave identically under various syn-
tactico-semantic tests: (i) they do not express quantity, (ii) they allow only a weak
(low-scope) indefinite reading, (iii) neither indefinite bare plurals or mass terms, nor indefinite implicit patients can combine with perfective transitive verbs.

Bare plural and mass terms are standardly treated as existentially quantified elements that do not undergo quantifier raising but stay in-situ where they are existentially closed over (Diesing 1992). As a result, these “nonquantificational indefinites”, as Diesing and Jelinek (1995) call them, can get only a weak (non-specific) reading unless they overtly move out of VP. Benedicto (1997) further refines this proposal by showing that the nuclear scope of the existential closure corresponds to the c-commanding domain of the verb (after its movements), rather than to the VP itself as in the original proposal by Diesing. I suggest that this analysis of bare plurals and mass nouns should be extended to existentially interpreted null patients and I employ the framework of Borer (2005a, b) to do so.

In Borer’s theory, both DPs and VPs have an articulated internal functional structure where each projection is headed by a categorially labeled open value \(\langle e \rangle\) that needs to be assigned range by some functional item, i.e. needs to be bound by the appropriate functional operator.

Since going into the details of Borer’s general framework would take us too far from the topic of this study, I will present just the part which is directly involved in accounting for the difference between perfectives and imperfectives introduced in 4.1. In this framework, count interpretation is the property of syntax so all noun denotations are mass (they are of type \(\langle e, t \rangle\)). As non-quantity structures, neither bare plurals nor mass nouns project a category of number/quantity associated with an open quantity value \(\langle e \rangle\) (and only plurals project a category of classifier associated with \(\langle e \rangle_{\text{DIV}}\) where DIV stands for “divided”). In order to capture
the parallelism between overt non-quantity nouns like mass nouns and non-overt non-quantity nouns like implicit patients, we have to assume that all of the following three nominal structures are possible:

(22)

a. bare plural noun: \[ DP \langle e \rangle_d [\text{ClP} \langle e \rangle_{\text{DIV}} [\text{NP } \sqrt{\text{noun}}]] \]
b. bare mass noun: \[ DP \langle e \rangle_d [\text{NP } \sqrt{\text{noun}}] \]
c. null implicit patient: \[ DP \langle e \rangle_d [\text{NP } \text{pro}_{(e,t)}] \]

Borer (2000a) further proposes that when the low-scope existential closure à la Diesing applies, it assigns a range to an open value \( e \), i.e. it binds the logical variable \( e \), but it is not capable of binding \( e \). The result of combining a non-quantity noun with a verb could be schematically captured as follows (subscripts stand for the binding relation).

(23)

a. existentially quantified overt noun:
\[ \exists_i [V \sqrt{\text{verb}}] [DP \langle e \rangle_d [NP \sqrt{\text{noun}}]] \]

b. existentially quantified non-overt noun:
\[ \exists_i [V \sqrt{\text{verb}}] [DP \langle e \rangle_d [NP \text{pro}_{(e,t)}]] \]

This proposal was originally formulated for verbs, but if we assume that verbal nouns contain a full syntactic projection of the verbal head that introduces the patient argument, as suggested in 2.3.1 (as well as several other higher verbal heads connected by verb-movement), we can readily account for the existence of indefinite null patients within nominals, without a need to introduce any additional theoretical machinery.

4.3 Incompatibility of null patients with perfective verbs and nouns

Once we understand the structure and the interpretation of existentially quantified null patients, we can proceed to analyzing the incompatibility of these patients with perfective verbs and perfective nominals exemplified in (16) through (18b). The strategy I am defending in this study is that whatever principle guides this incompatibility in the case of verbs should also guide it for nominals, precisely because in both cases it is tied to a purely verbal category of aspect (the presence of which in the structure of verbal nouns was already justified in Section 3). In the rest of this section I will sketch an analysis based on this logic.

I propose (Dvořák 2013) that it is the perfective verb’s need for a quantity patient DP that excludes implicit patients (but also indefinite bare plural and mass nouns) as licit direct objects of transitive perfective verbs. Borer (2005b) makes a proposal along the same lines for English telic predicates even though she talks only about bare plurals and mass terms, not about non-overt patients. I rely on her framework once again when formally capturing the same incompatibility in Czech.
Recall that according to Borer, not only nominals but also verbs project a category of quantity which is in the case of verbs associated with an aspectual phrase (labeled as Asp_Q\(^P\) whereby Q stands for quantity). The open value \(\langle e \rangle_#\) heading such aspectual projection is in need of range assignment, but in contrast to nominals, which can value their \(\langle e \rangle_#\) by means of various quantifiers, perfective verbs do not have any such direct range assigner. However, the verbal \(\langle e \rangle_#\) can still be valued indirectly, through specifier-head agreement. This happens when there is a quantity DP in Spec,Asp_Q and the particular quantity value of this DP (labeled as Q\(^i\) in Figure 4) gets assigned not only to a nominal number \([\_P \langle e \rangle_#\]) but also gets copied onto the verbal “number” \([\_AspQP \langle e \rangle_#\]). As a consequence, only the combinations of quantity DPs and transitive perfective verbs are well-formed.

When it comes to imperfective verbs, there are at least two theoretical possibilities: They either do not project Asp_Q\(^P\) associated with \(\langle e \rangle_#\) at all, or they do project it but in contrast to perfective verbs, they have an internal \(\langle e \rangle_#\)-range assigner. While the former path is taken by Borer (2005b), the latter one seems more plausible to the author of this study, given that imperfectivity is in Slavic languages associated with a specific progressive-like interpretation (e.g. Altshuler 2010), and the aspectual node should be the locus of this interpretation. One of the morphology-based arguments for the latter approach is the existence of a morphological reflex of imperfectivization, namely the suffix -va-, which is the most productive means of deriving imperfective stems in Czech, cf. (12) and (13). On the other hand, there is no unique perfectivizing affix (see Filip 2003 for an argument against the view of prefixes as perfectivity markers). The imperfectivizing suffix -va- and its counterparts can thus fulfill the role of functional items assigning the range to a verbal quantity value \(\langle e \rangle_#\) directly, which in turn means that
imperfective verbs do not need an external range-assigner in the form of a quantity DP in Spec,Asp_Q.

\[ \text{Asp}_Q \text{P} \]
\[ \text{DP} \]
\[ \langle \text{PROG} \rangle \]
\[ \langle \text{ePROG} \rangle \]
\[ \text{VP} \]

Figure 5. Imperfective verbs: direct assignment of range to an open verbal-quantity value

I hope I have demonstrated that if we acknowledge the presence of such verbal projections like Asp_QP in the nominalized structure, and we further accept that the head of this projection can interact with the argument introduced lower in the structure in the same way as it does in the purely verbal structure, we can explain an important parallel between verbs and nouns regarding the non-expression of their objects. Since providing a full-fledged analysis of the interaction between phonological nullity of patients and imperfectivity of verbs is not the task of this study, precisely because there is nothing specifically nominal about this interaction, I will stop at this point in order to look at some interesting differences between verbs and argument-taking nouns.

5. Other types of null patients

5.1 Contextually dependent null patients

In the previous section we discussed cases where patients with a meaning roughly corresponding to “something” did not have to be expressed overtly with nominals but could be just tacitly present. We found out that the same type of silent patient can occur with verbs, and that nominal and verbal null patients can be analyzed uniformly. In addition to such existentially interpreted null patients, Czech verbal nouns can combine with null patients referring to a contextually salient entity, i.e. they behave like true overt pronouns. Interestingly, this is something that verbs do not allow.

‘The teacher gave Charlie the task to draw a snowman over the weekend.’

a. Karlík *kreslí*/ *nakreslí__ v neděli odpoledne.
Charlie drew.ipfv drew.pfv on Sunday afternoon
‘Charlie was drawing/drew on Sunday afternoon.’
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b. Karlík nechal kreslení__ / nakreslení__ na neděli odpoledne.
   Charlie left drawing.ipfv drawing.PFV for Sunday afternoon
   ‘Charlie left drawing (it) for Sunday afternoon.’

The possibility of taking a contextually-dependent null patient has no relation to aspect: it is attested for both perfective and imperfective nominals, and it is not attested for either perfective or imperfective verbs.

The expected form of the sentence in (24a) is with an overt pronoun ho ‘him’, referring to the snowman. The number sign (#) in front of the verb kreslil in (24a) marks that the sentence with the imperfective verb is not ungrammatical but only semantically awkward because it can have an alternative meaning, involving a patient’s implicit existential quantification. As we already discussed in relation to (16a) and (17a), the sentence “Karlík kreslil v neděli odpoledne” could be roughly paraphrased as “Charlie was drawing something on Sunday afternoon”. Since we know from the context that he was supposed to draw a snowman, not just “something”, most speakers deduce that this “something” was presumably a snowman. However, this meaning has the character of an implicature and as such it can be canceled (in the same context as given in (24)).

(25) Karlík kreslil___ v neděli odpoledne, ale ne sněhulák-a.
   Charlie drew.ipfv on Sunday afternoon but not snowman.acc
   ‘Charlie was drawing something on Sunday afternoon, but not the snowman.’

On the other hand, the null patient of the perfective nominal nakreslení in (24b) has to refer to the snowman mentioned in the previous sentence, therefore its context-dependent interpretation cannot be canceled (it is a part of the presupposition).

(26) *Karlík nechal nakreslení___, ale ne sněhulák-a,
   Charlie left drawing.PFV but not snowman-gen
   na neděli odpoledne.
   for Sunday afternoon
   ‘Charlie left the drawing but not (the drawing) of the snowman for Sunday afternoon.’

The null patient of the imperfective nominal kreslení in (24b) allows both interpretations: the existential one which we saw already in (16b) and (17b), or the contextually dependent one. The latter, contextual one is most probably going to be picked because the existential interpretation would be pragmatically odd in the given context.

In (27) I provide one more set of examples showing the contrast between verbs and nouns when it comes to allowing a null contextually dependent patient. This example shows that the antecedent does not have to be a syntactically uniform
category. In this case, it is the subject of the preceding clause that serves as an antecedent for the null object in the following clause.

(27) Context: Soutěž Supertalent měla letos dva moderátory.
‘The Supertalent contest had two hosts this year.’

a. Na začátku uváděla / *uvedla ___ at beginning introduced.ipfv introduced.pfv
švédsk-á moderátork-a.
Swedish-nom host-nom
‘A Swedish host was introducing/introduced at the beginning.’

b. Počáteční uvádění / uvedení ___ initial introducing.ipfv introducing.pfv
(švédsk-ou moderátork-ou) bylo trochu těžkopádné.
Swedish-ins host-ins was bit clumsy
‘The initial presentation (by a Swedish host) was a bit clumsy.’

While I gave a systematic account of various properties of verbal nouns that were presented in the previous sections, I do not have a full-fledged explanation for the contrast presented here, i.e. why nominals allow a discourse anaphoric null patient but verbs don’t. I only suggest a possible way to go here.

Landau (2010) distinguishes two types of implicit arguments: strong implicit arguments (which he labels pro) consisting of a D-feature (“D” stands for “Determinate”) and a set of phi-features (person, number, gender), and weak implicit arguments consisting only of phi-features. He also notes that the presence of a case-feature requires the presence of a D-feature because case is a property of DPs (Landau 2010: 380).

There is an important difference between verbs and nominals when it comes to the presence of an unchecked case feature: projections of transitive verbs contain an accusative (Acc) feature if there is an active Voice introducing an external argument (or an active little v which is the head with the same function as Voice in many proposals). Nominalized structures, on the other hand, contain a passive-like Voice, cf. 2.3.1 and 2.3.2, so they do not have an unchecked Acc feature. Moreover, genitive-assignment is optional in transitive nominals, as opposed to the obligatory assignment of accusative case in transitive verbs (see Dvořák 2011 for more details on structuralness versus inherentness of postnominal genitive). It follows that only active verbal structures but not nominalizations based on transitive stems require a full DP that would bear a direct object theta-role and structural case associated with it. Nominals can combine also with non-D arguments because they do not need to check their case against an unchecked case on a DP.

I already proposed that existentially quantified null patients have a D-layer, cf. (22c), so they would count as strong implicit arguments for Landau. In Borer’s
framework, it is precisely the variable associated with the Determiner category that gets bound by the existential quantifier, as shown in (23b). On the other hand, it is plausible that discourse anaphoric null patients, exemplified in (24b) and (27b), do not project the D-layer at all. Their incompatibility with active verbs would then follow from the fact that they cannot satisfy the case feature on Voice/v. I leave the verification of this hypothesis for further research.

5.2 [+HUM] null patients

So far, we have been focusing on non-overt patients that correspond to inanimate objects. The last set of data that I present here shows that verbal nouns can also combine with non-overt patients denoting humans. The behavior of these patients is different from that of non-human null patients in one important aspect: they seem to be able to combine with perfective nominals even in out-of-the-blue contexts, i.e. without the possibility of referring to an entity from the previous discourse.

(28) a. Na vánočních trzích šidili_/*ošidili_.
   at Christmas markets cheated.IPfv cheated.PFv
   ‘They were cheating/cheated at the Christmas market.’

   b. Na vánočních trzích došlo k šizení_/ošizení_.
   at Christmas markets went to cheating.IPfv/PFv
   ‘At the Christmas market, cheating occurred.’

(29) a. Během obřadu kněz rychle křtil_/*pokřtil_.
   during ceremony priest.Nom quickly baptized.IPfv baptized.PFv
   ‘During the ceremony, the priest was also quickly baptizing/also
   quickly baptized.’

   b. Obřad byl spojený s rychlým
   ceremony was connected with quick
   křtěním_/pokřtěním_.
   baptizing.IPfv/baptizing.PFv
   ‘The ceremony was connected with quick baptizing.’

The sentences (28a) and (29a) show that perfective verbs taking [+HUM] direct objects cannot combine with a null implicit patient in episodic contexts, on a par with non-[+HUM]-object taking verbs, cf. (16a) and (17a). In contrast, verbal nouns derived from the same stems are not ungrammatical if combined with a null patient, regardless of their aspect; see (28b) and (29b) on one side, and (16b)

3. Perfective verbs with human objects behave differently in generic sentences, but I will not discuss those here at all.
and (17b) on the other. The perfective nominal is of particular interest here: Why does the perfectly marked noun allow combination with a null patient when the perfective verb derived from the same stem does not?

A detailed analysis of this interesting contrast goes far beyond the scope of this paper so I make just a short related note here. The compatibility of a null human patient and a perfective nominal in (28b) and (29b) would follow if: (1) these patients expressed the category of nominal quantity, which allows them to assign range to the open quantity value of perfective stems (see Figure 3), (2) they were similar to contextually-dependent implicit patients discussed in 5.1 in that they would not have the Determiner category so they could not be assigned case. Consequently, they could not appear in structures with active Voice, which are characterized by obligatory case assignment to their internal arguments.

6. Conclusion

This article had a threefold aim: (1) to give an overview of certain assumptions about the syntactic structure of verbal nouns, especially the assumptions related to the case forms of various members of nominal valency frames (Sections 2 and 3), (2) to analyze one type of non-expressed patient that can be present in nominal structures as well as verbal structures (Section 4), and (3) to examine whether there are any other types of non-expressed patients (Section 5). The logical link between the first two aims is that we can systematically account for all sorts of verb – noun parallels without a need to extend our theoretical apparatus if we assume that verbs and nouns share a substantial part of their functional structure.

When it comes to the first aim, the Czech data confirmed that nouns can share with verbs all projections where internal arguments are syntactically introduced: VP, PP, vApplP, but also other phrases in the extended verbal projection, namely vP, AspQP, VoiceP. However, nouns differ from (active) verbs in projecting passive-like Voice which is deprived of case-marking capacity. Nouns provide their own structural slot, licensed by the nominalizing suffix (of category n) where both patient and agent DPs can get genitive-case marked.

In the second step, it has been shown that there are at least two types of non-overt arguments that combine with verbal nouns: existentially quantified indefinite patients and contextually dependent patients. While the former ones are parallel to non-overt indefinite verbal arguments in not combining with perfective verbs, the latter ones are attested only in nominal structures. Figure 6 summarizes which types of null patients can appear in which types of structures.

The behavior of existential non-overt patients in nouns, which mirrors the behavior of the same types of patients in verbs, was accounted for by the presence
of an aspectual quantificational head in their structures and its need for a quantity object in its specifier. The requirement associated with perfective aspect is not met in the case of mass-like null patients.

On the other hand, I related the non-existence of contextually interpreted null patients in active verbal structures with the structural element missing in nominals: accusative-assigning Voice. Finally, in 5.2 I discussed what seems like yet a third type of null arguments, human implicit patients.

Even though I made several important findings throughout the paper, contributing to a better understanding of the internal structure of verb-like nouns, the last section revealed that there still remains a lot more work to be done in this area. The classical research rule saying that the more questions get answered, the more new questions arise got confirmed once again.

### References


Borer, Hagit. 1999. The form, the forming, and the formation of nominals. Ms, University of Southern California.


<table>
<thead>
<tr>
<th></th>
<th>∃-quantified indefinite patient</th>
<th>Context-dependent patient</th>
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<td>Imperfective</td>
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<td>✗</td>
</tr>
</tbody>
</table>

Figure 6. Typology of implicit non-human patients in Czech


Novotný, Jiří. 1980. Valence dějových substantiv v češtině (Valency of event nouns in Czech) [Sborník pedagogické fakulty v Ústí nad Labem], Prague: SPN.


A data-driven analysis of the structure type ‘man–nature relationship’ in Romanian*

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The Romanian tri-nominal juxtaposition structure relație om – natură ‘man–nature relationship’ is cross-linguistically widespread and typical of a series of relational nouns, such as agreement, interaction, and mixture, which can have a “compound” expansion (Canada–U.S. agreement, parent–child interaction, air–water mixture, etc.). Our analysis is twofold: we first examine the grammatical relationship between relație ‘relationship’ and om – natură ‘man–nature’, and second the construction om – natură. On the basis of data from a large Romanian newspaper corpus, we show that the “compound” construction om – natură is in fact a free phrase; we call it a Relational Coordination Construction (RCC). It usually embodies valency complements of a relational noun, and it semantically implies reciprocity. The analysis adopts a non-transformational, data-driven perspective within the Construction Grammar framework.

1. Introduction

This chapter approaches the general problem of noun valency in Romanian by concentrating on one specific issue. Noun valency is often analyzed analogously to verb valency, especially in the case of deverbal nouns (see Panevová, this volume).¹

¹ I express my gratitude to Olga Spevak for her numerous comments and suggestions. My thanks also go to the two anonymous reviewers of this paper. All remaining errors are mine.
Nevertheless, a series of nouns – relational nouns – have also been identified as nouns with valency that require complements, some of them without being deverbal.

The literature devoted to this topic has focused on only a small group of non-deverbal relational nouns. These are nouns expressing inter-human relationships (kinship, friendship, neighborhood), such as father, brother, friend, and neighbor. All the other relational nouns have been virtually ignored, although obviously they are more numerous. Among this latter group are the typical relation(ship) and also alliance, antagonism, asymmetry, etc.; that is, a series of nouns expressing a symmetrical (or reciprocal) relationship between at least two elements. Such a relational noun always denotes a state of fact (not a class of individuals).² In this chapter, we argue that the elements involved in the relationship expressed by such a noun represent its valency structure.

In Romanian, the relationship between two nominals is usually expressed by the genitive case: lucrarea studentului (work-art student-art.gen, ‘the student’s work’), or by a prepositional phrase: ușa de casă (door of house, ‘door of a house’). Much less frequently, nominal dependency can also be expressed by juxtaposition (also called apposition), when a noun in the nominative is simply attached to a head noun: sintagmă cu centru pronume (phrase with head pronoun, ‘a phrase with a pronoun head’). This is the case of the structure discussed here. The dependent elements are nouns or noun phrases in the nominative juxtaposed with one another. Further, they are appositively attached to a noun head, and the structure thus obtained is a phrase with three members N₁ N₂ N₃ (a tri-nominal structure). A typical example in this respect is relație om – natură ‘man–nature relationship’, where relație = N₁ om = N₂ natură = N₃ (man = N₂ nature = N₃ relationship = N₁).

This type of structure appears extensively in newspapers and scientific literature. It is preferred for its concision. In our research, we mainly used the Internet and the corpus ZiareRom, a corpus of written newspapers.³ It is worth pointing out that there are several ways of spelling the construction N₂ N₃: with a slash, a hyphen, a dash, or a blank space. Here are some examples of the structure N₁ N₂ N₃ extracted from this corpus:

² This feature distinguishes a relational noun such as father from those like relationship; compare the entity X is a father with *the entity X is a relationship. The relational noun father can also be used as a sortal noun, but relationship cannot. For the distinction sortal vs. relational nouns, see Partee & Borschev (2012: 446).

³ For a detailed description of the corpus, see (www.lingv.ro/Resurse lingvistice).
In previous studies of relational nouns, few references to the above nominal construction are found. The dominant point of view treats the sequence of arguments $N_2 N_3$ (for instance man–nature in (1a)) as a compound noun. As for the syntactic function of this sequence, we have found references in Noaillly (to appear), where the compound noun $N_2 N_3$ is considered the adjunct of $N_1$. Likewise, on a merely semantic basis, Olsen (2001 and 2004) treats the sequence $N_2 N_3$ as a complex argument whose parts stand in the ‘between’ relation to the head $N_1$.

In this chapter, we first argue that $N_2$ and $N_3$ form not a compound noun but a phrase of coordinated elements of a special type, called here Relational Coordination Construction (hereafter RCC). In this construction, components $N_2$ and $N_3$ preserve their morphological, syntactic and semantic individuality. In Section 3, arguments are supplied that $N_2$ and $N_3$ should be considered complements of $N_1$. Using data in the corpus, in Section 4 some possible realizations of the arguments of relational nouns (that is, subcategorization frames) are given; RCC is also characterized in detail. Upon deeper examination it appears that RCC, as an independent phrase, is, in most cases, a subcategorization frame for relational nouns, but in some cases it can also be an adjunct. In Section 5, a formal representation of RCCs is proposed within the framework of Construction Grammar, which, in our opinion, best reflects the properties of the corpus data. Finally, in the last section we put forward some conclusions about the tri-nominal juxtapositional structure, which we consider a specific realization of the relational noun arguments.
2. Relational Coordination Construction (RCC)


Olsen (2004: 27) in turn considers $N_2$ and $N_3$ to be “copulatives occurring as front forms of more complex compound stems.” In other words, the whole structure, for instance *man–nature relationship*, is a compound in which *man* and *nature* are word parts contributing to the meaning of the whole.

In the absence of any argument, however, it is very difficult to accept that *parents-enfants* (in *un conflit parents-enfants*) and *om – natură* (in *relația om – natură*) are lexical (or morphological) compounds. In what follows, we bring into discussion some arguments which prove that the sequence $N_2N_3$ is not a compound but a free construction (or phrase) without any lexical or morphological cohesion. This position is endorsed by tests elaborated by Bouvier (2000). His tests are precisely designed to identify the properties that help to distinguish lexical compounds from phrases.

According to Bouvier, a defining property of a lexical compound is the fact that it represents a new and unique concept obtained through lexicalization (Bouvier 2000: 170). From this point of view, the construction *om – natură* ‘man–nature’ does not represent a lexical compound not only because it does not express a new and unique concept, but because it cannot actually be assigned any concept at all, and moreover because no set of semantic features capable of defining an entity – even plurality, according to Noailly – might be associated with it. Thus, unlike constructions such as *istorie-geografie* ‘history-geography’, which is really a plurality, whose parts are connected by means of the hypernym *scientific discipline*, the parts of the construction *om – natură* ‘man–nature’ are not conceptually connected. In the domain of semantic ontology, there would be no room for such

4. “Forms such as *parents-child* are compound words of the same type as *history-geography*, which denotes a plurality formed out of several elements.”

5. See Mathieu-Colas (1995) and Gushchina (2008), who also believe, without explicit arguments, that such constructions are not compounds.
Chapter 5. Man–nature relationship

The immediate consequence of this fact is that if one wished to introduce the construction in a dictionary, like any other lexical compound, no definition of its meaning would be possible. In short, this construction violates Olsen’s Principle of Ontological Coherence, according to which a complex concept as the denotation of a morphological object should pick out a coherent individual from one of the domains of individuals (Olsen 2004: 19).

On the other hand, as Bouvier (2000: 170) notes, a lexical compound does not preserve its meaning if one of its elements is replaced with a synonym. This is not the case with the constructions under scrutiny here. In the example (relația) om – natură ‘the man–nature (relationship)’; om ‘man’ may be replaced by the phrase ființă umană ‘human being’, the result being (relația) ființă umană – natură ‘the human being–nature (relationship)’ with no consequent change in meaning. This shows again that what we are dealing with here is not a lexical compound.

Finally, the type of construction analyzed here differs from lexical compounds in morphology. Thus, unlike lexical units, in the case of om – natură ‘man–nature’ it is impossible to determine the grammatical gender. In Romanian, om is masculine and natură is feminine and neither of them imposes its gender on the whole sequence. At the same time, the parts of the construction may have independent inflection (with slight modification of meaning):

\[(2) \quad \text{(relați-a)} \quad \text{părinț-i} – \text{copil} / \quad \text{părinț-i} – \text{copi-i} / \quad \text{părinț-i} – \text{copi-i} / \quad \text{copi-i} / \quad \text{copi-i} / \quad \text{copi-i} / \quad \text{părint-e} – \text{copi-i} / \quad \text{părint-e} – \text{copi-i} / \quad \text{părint-e} – \text{copi-i} / \quad \text{părint-e} – \text{copi-i} / \quad \text{părint-e} – \text{copi-i} / \quad \text{părint-e} – \text{copi-i} / \quad \text{părint-e} – \text{copi-i} / \quad \text{părint-e} – \text{copi-i} / \quad \text{părint-e} – \text{copi-i} / \quad \text{părint-e} – \text{copi-i} / \quad \text{părint-e} \]

‘the relationship between parent(s) and child(ren)’

Moreover, the elements of the construction may appear in inverted order in the same context (3).

\[(3) \quad \text{Am urmărit} \quad \text{una, televizată, despre relația} \quad \text{aux \ watched-1sg.pst} \quad \text{one televised about relationship} \quad \text{jurnaliști-scriitori și scriitori-jurnaliști.}^6 \quad \text{journalists-writers and writers-journalists} \quad \text{‘I watched a TV debate about reciprocal relationships between writers and journalists.’ (Ziua 14/06/07)}\]

All of this shows a certain morphological independence which is not characteristic of the elements of a lexical compound.

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6. In this example, the relationship is considered to be oriented from journalists toward writers and from writers toward journalists, respectively.
Further evidence that $N_2 N_3$ (in a relational structure $N_1 N_2 N_3$) is a phrase comes from the following facts:

1. $N_2$ and $N_3$ have distinct referents. Proper names (of persons, political parties, organizations, etc.), which are very frequent in such a construction, illustrate this property very well: *relația NATO – Uniunea Europeană* ‘the NATO–European Union relationship’ (Ziua 01/02/07).

2. $N_2$ and $N_3$ may have their own dependents (4). Bouvier (2000:167) uses this feature, too, as evidence for rejecting the idea that they form a lexical compound.

(4) a. *cercetarea experimentală a interacțiunii roată cu pneu* – investigation experimental of interaction wheel with tire

   *cale nedeformabilă de rulare*  
   track undeformable of traffic

   ‘the experimental investigation of the interaction between wheel with tire and undeformable traffic track’ (Internet, 20.06.2012)

b. *relația drept-urile om-ului – mass media* – relation right-art.nom.pl human-art.gen.sg mass media

   *societatea civilă*  
   society-art.nom civil

   ‘the human rights – mass media – the civil society relationship’  
   (Euractiv-ro 05/04/07)

Note that sequences are not restricted to two elements $N_2$ and $N_3$ but can contain three or more nouns, as in (4b).

Having accepted that the sequence $N_2 N_3$ does not represent a lexical compound but a free phrase, we must still determine what kind of phrase the construction actually is.

Coordination as a type of relationship between the members of a (bi-nominal) “compound” is widespread in the literature. For instance, Noailly (1990:65) identifies a logical relationship of coordination between two nouns: when they have equal importance in the structure which they form by juxtaposition. Examples clearly illustrating this relationship, in Noailly’s opinion, are *l’ambivalence violence-indolence* ‘violence–indolence ambivalence’ or *la cohésion verbe-nom* ‘verb–noun cohesion’: that is, the complex structure $N_1 (N_2 + N_3)$ where the coordinate nouns $N_2 + N_3$ have the same head, the relational noun itself (Noailly 1990:84). The same type of coordination structure is mentioned in Barbaud (1971, *apud* Guschchina (2008)), Bauer (2008), and Olsen (2001 and 2004).

However, Olsen (2001:299) adds that the characterization of $N_2 N_3$ as members of a coordination construction is not enough, even if coordination is
understood as being copulative – that is, a construction creating a plurality. Olsen correctly observes that conceiving of this construction as a simple operation of plural formation does not capture the correct semantic representation of the whole structure (i.e. $N_1 (N_2 + N_3)$). Besides, this characterization actually fails to explain the ill-formedness of the structures obtained just by expressing the coordinating conjunction: *relația om și natură ‘the man and nature relationship’, *ambivalența violență și indolență, ‘the violence and indolence ambivalence’, or *coeziunea verb și nume ‘the verb and noun cohesion’.

What is essential in the analysis of these coordination-based constructions are the facts that, as Noailly noticed, they have the same noun as their head, and also that this noun is relational in its nature. A relationship obligatorily involves at least two elements – that is, a plurality. The plurality may be expressed in two different ways:

1. by morphological means – mainly, the plural number:

   (5) relația dintre oameni / *om
   relationship between man-pl man-sg
   ‘the relationship between men / man’

2. by syntactic means:
   a. conjunctive copular coordination: relația dintre om *(și natură) ‘the relationship between man *(and nature);

At the same time, these examples show that relational nouns involve not merely plurality, but also reciprocity. Reciprocity is expressed by the reciprocal prepositions dintre (with the variant între) ‘between’ and cu ‘with’ that are grammatically and semantically selected by relational nouns. One may thus conclude that plurality and reciprocity are two semantic features simultaneously imposed by relational nouns. As a consequence, in the tri-nominal structure discussed here (e.g. relația om – natură, ‘the man–nature relationship’), the construction $N_2 N_3$, in the absence of any preposition, has to incorporate both of these features, plurality and reciprocity. Therefore this construction represents a coordination phrase which is not merely copulative but also involves a reciprocal (or relational) status of its conjuncts. We term this phrase a Relational Coordination Construction.

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7. Reciprocity is meant to define a relation between equipotent members.
In Section 3 we provide a detailed characterization of this construction and the tri-nominal structure discussed here using, evidence from the corpus.

The next step of the analysis is to establish the syntactic function of N₂ and N₃ in the triadic structure headed by N₁.

3. N₂ and N₃ as complements of N₁

As already mentioned, Noaillé (to appear) puts forward the view that the sequence N₂ N₃ is a compound word with the syntactic function of adjunct of N₁. The compound makes implicit reference to a relationship expressed by a preposition. This structure (N₁ N₂ N₃) patterns like binominal French noun phrases such as un problème cheveux or un programme enfants, where the prepositions expressing the relationship between the two nouns are avec ‘with’: un problème avec les cheveux ‘a problem with the hair’ and pour ‘for’: un programme pour les enfants ‘a program for the children’, respectively. In the same vein, in a structure such as la cohesion verbe-nom ‘verb–noun cohesion’, the compound verbe-nom ‘verb–noun’ establishes a relationship with cohesion which may be glossed by the preposition entre ‘between’: la cohesion entre un verbe et un nom ‘the cohesion between a verb and a noun’.

We showed in the previous section that the sequence N₂ N₃ (like verb–noun in the above example) is not a lexical compound. We now present evidence that these nominals are not adjuncts but, in most cases, complements of N₁, and that they occupy argument positions. Additionally, we try to prove that the sequence N₂ N₃ represents an alternative argument realization to the between-PP. The facts that support our interpretation are the following:

1. The arguments of a relational noun must be known.
2. The complements of a verb become the complements of the corresponding relational deverbal noun.
3. The arguments of a relational noun may have multiple realizations.
4. The arguments of a relational noun may be involved in the phenomenon of argument-sharing.

3.1 The mandatory realization of the arguments

From a semantic point of view, relational nouns are predicates with two places or more: relationship′(x, y), mix′(x, y), combination′(x, y), conflict′(x, y), dialog′(x, y), etc. Knowing the arguments is compulsory. For example, (6) is

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8. Olsen (2001:299) refers to these arguments as “semantic requirements of certain types of relational heads”, while Bauer (2008:12) calls them co-participants.
bad both semantically and pragmatically, if the universe of the discourse does not make available the elements which the fair relationship refers to:

(6) \#S-a stabilit o relație echitabilă.
    pass-aux establish-3sg.pst a relationship fair
    'A fair relationship has been established.'

Example (6) becomes acceptable if one adds an RCC as in (7):

(7) S-a stabilit o relație om – natură echitabilă.
    pass-aux establish-3sg.pst a relationship man nature fair
    'A fair man–nature relationship has been established.'

However, we may note that even if the arguments are not overtly expressed, they must be recoverable from the (discourse or knowledge of the world) context:

(8) Omul a înțeles că trebuie să protejeze natura.
    man aux understand-3sg.pst that must sbvj-protect-3sg nature
    Astfel, s-a stabilit o relație echitabilă.
    thus pass-aux establish-3sg.pst a relationship fair
    'Man understood that he must protect nature. Thus, a fair relationship has been established.'

This situation is examined in Herbst (1999), who foregrounds the so-called contextually optional complements necessary to the syntactic realization of the arguments that are obligatorily recoverable from the context. Herbst makes a distinction between optional complements, whose omission yields an indefinite meaning – as in the example *John is reading*, equivalent to *John is reading something* – and contextually optional complements, whose omission is allowed only if the complement in question can be retrieved from the context, as in the example *John objects / is objecting* which is meaningful if it is already known what John is objecting to.

Relational nouns, therefore, align with predicates that have contextually optional complements.

3.2 The complements of derived relational nouns

Another argument in support of the fact that $N_2$ and $N_3$ are complements of the relational noun $N_1$ is offered by relational nouns which have in their lexical family verbs with uncontroversial complements. For example, Guțu-Romalio (2005: 416) says that prepositional complements (or oblique objects) are verb phrase components which have semantic roles. Verbs selecting an obligatory prepositional phrase are, for instance, “symmetric” verbs (those having the semantic feature [+ Reciprocal]), such as *a se asemâna cu* ‘to resemble with’, *a colabora cu* ‘to collaborate with’, *a comunica cu* ‘to communicate with’, *a rivaliza cu* ‘to rival with’, etc. as exemplified in Guțu-Romalio (2005: 416). So in (9a) *Romania* and (cu) *Bulgaria*
are the arguments (expressed as the subject and the oblique object, respectively) of the verb *colaborează* ‘collaborates’. If the verb is nominalized, the corresponding noun has the same arguments, *România* and *(cu)* *Bulgaria*, expressed by a genitive and the same oblique object (9b). These arguments remain the arguments of the nominal head even if they are expressed by an RCC, as in (9c).

(9) a. *România* colaborează *cu* *Bulgaria* în *turism*.

    Romania *collaborates* with Bulgaria in tourism.

b. *Există* o colaborare *a* Români-*ei* *cu* *Bulgaria* in *turism*.

    exists a collaboration of Romania-*gen* with Bulgaria-*acc* in *tourism*.

    ‘Collaboration of Romania with Bulgaria in tourism exists.’

c. *Există* o colaborare *România* – *Bulgaria* în *turism*.

    exists a collaboration România-*nom* Bulgaria-*nom* in tourism

    ‘Romania–Bulgaria collaboration in tourism exists.’

Example (10) is similar, where the noun *similaritate* ‘similarity’ is derived from the adjective *similar* ‘similar’ and inherits its complements:

(10) a. *Om-ul* este similar *cu* *animal-ele*.

    human-*art.nom.sg* is similar to animal-*art.acc.pl*

    ‘Humans are similar to animals.’

b. Similaritate-*a* *om-ului* *cu* *animal-ele*

    similarity-*art.nom* human-*art.gen.sg* to animal-*art.acc.pl*

    este evidentă.

    is obvious

    ‘The similarity of humans to animals is obvious.’

c. Similaritate-*a* *om* – *animal*

    similarity-*art.nom* human-*nom.sg* animal-*nom.sg*

    este evidentă.

    is obvious.

    ‘The human–animal similarity is obvious.’

We may therefore extrapolate and say that relational nouns marked [+ Reciprocal], such as *relație* ‘relationship’, *armonie* ‘harmony’, and *simetrie* ‘symmetry’, require the same types of complements, even if they do not come from verbs or adjectives.

In essence, then, from the point of view of the present discussion, these predicates are of the same nature as *colaborare* ‘collaboration’ or *similaritate* ‘similarity’. That is, accepting that the construction *România–Bulgaria* expresses the complements
of collaboration in (9c) triggers the fact that the same construction expresses the complements of relationship in a similar example, such as A Romania–Bulgaria relationship in tourism exists, as well.

3.3 Multiple argument realizations

Levin (1993) and Meyers et al. (1996) observe that argument phrases participating in valency alternations are usually complements, not adjuncts. In (11), the arguments of the verb a colabora ‘to collaborate’ illustrate two different realizations: as multiple subjects in (11a), and as a subject and prepositional object in (11b):

(11) a. Statele Unite și Rusia colaborează.
   the United States and Russia collaborate

 b. Statele Unite colaborează cu Rusia.
   the United States collaborates with Russia

Multiple argument realizations also appear in the case of relational nouns, both derived (as already reflected in (9) and (10) above) and underived, as may be seen in (12) for the noun relație ‘relationship’:

(12) a. Relația-a Stat-elor Unit-e cu Rusia
   relationship-art.nom State-art.gen.pl United-pl with Russia-acc
   este stabilă.
   is stable

   ‘The relationship of the United States with Russia is stable.’

 b. Relația dintre Stat-ele Unit-e și Rusia
   relationship between State-art.acc.pl United-pl and Russia-acc
   este stabilă.
   is stable

   ‘The relationship between the United States and Russia is stable.’

c. Relația Stat-ele Unit-e – Rusia
   relationship State-art.nom.pl United-pl Russia-nom
   este stabilă.
   is stable

   ‘The United States–Russia relationship is stable.’

This example displays three different subcategorization frames for the noun relationship: genitive complement and with-PP (12a); between-PP (12b); RCC (12c). These frames are common to the majority of relational nouns.

It is important to highlight that RCC represents just another argument realization, equivalent to between-PP, and not derived from it by preposition omission.
Olsen (2004: 28) and Noailly (to appear) make a connection between the sequence $N_2 N_3$ (that we call RCC) and *between*-PP, by rendering RCC as *between*-PP more explicitly (e.g. *lawyer–client relationship > relationship between a lawyer and a client*). Mathieu-Colas (1995: 163) in turn interprets RCC as an *ellipsis* and proposes more possible paraphrases.

In the following, we show that RCC is not a result of the ellipsis of the *between*-PP.

First, the hypothesis of the omission of the preposition *dintre* ‘between’ is not supported by morphological data: in Romanian, the presence of the preposition requires the accusative (13a), whereas RCC requires nominative forms of the argument nouns (13b) and excludes accusative ones (13c). Note that in a true ellipsis, the morphological case is preserved (13d).

\[(13)\]

<table>
<thead>
<tr>
<th>a.</th>
<th><em>relația dintre mine și tine</em></th>
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<tr>
<td>b.</td>
<td><em>relația eu – tu</em></td>
</tr>
<tr>
<td>c.</td>
<td><em>relația mine – tine</em></td>
</tr>
<tr>
<td>d.</td>
<td><em>Ion a dat o floare Mariei, iar Radu ___ Danei.</em></td>
</tr>
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</table>

‘the relationship between me and you’

‘the I – you relationship’

‘the me – you relationship’

‘John gave a flower Mary-DAT and Radu Dana-DAT’

The omission hypothesis, therefore, has to explain why a simple deletion involves systematic case modification of the complements.

Second, an explanation is needed of why the construction in (12c) comes from (12b) through preposition deletion, and not from (12a). And finally, there is no answer to the legitimate question of why the preposition *dintre* ‘between’ may not be elided in the structure with a locative *dintre: pomul dintre casă și garaj* ‘the tree between the house and garage’ / *pomul casă – garaj* ‘the house–garage tree’.

All these problems disappear if it is admitted that there is a certain type of phrase, identified here as a *Relational Coordination Construction*, which is not reducible to another “more basic” one. This phrase is composed of nominative NPs (see (13b)) that represent an alternative realization of the arguments of a relational noun.
3.4 Argument sharing

Another reason for treating $N_2 N_3$ as a construction of complements of $N_1$ and not as an adjunct is the fact that the arguments of the relational noun may be inherited by its governor.

In general, a constituent may have arguments which are shared with the head of the projection it belongs to. For example, in (14a) the subject of the verb *a citi* 'to read' is also the subject of its governor, the verb *a încerca* 'to try'. This is the phenomenon of control, which is marked by coindexation (indicated by $i$ in the examples below). In (14b) the verb *a putea* 'can, may' shares the direct object with the verb complement *a contacta* 'to contact'. This time, we are dealing with a phenomenon of raising.

(14) a. Ion $i$ încercă [să citească].
   John tries to read
   ‘John tries to read.’

b. Ion îl putea [contacta $i$]
   John him.ACC could contact
   ‘John could contact him.’

Relational nouns too can exhibit cases of shared arguments, but this sharing is not mandatory as in cases of control and raising. In (15), for example, the complements of the noun *relație* 'relationship' are at the same time the multiple subjects of its governor, the verb *a stabili* 'to establish':

(15) [Omul $i$ natura] stabilește o armonioasă [relație $i$].
   man and nature establish a harmonious relationship

What proves the existence of shared arguments is the ill-formedness of (16). (16) does not specify with whom (or what) nature establishes a harmonious relationship. At the same time, it ought to be noted that it is not the verb *a stabili* 'to establish' that imposes multiple subjects in (16), because this verb may also have a subject in the singular. So, the multiple subjects are in fact required by the noun *relație*. And this means that the structure is ill-formed because the valency of the noun *relație* is not saturated, even if the matrix-verb valency is saturated with the subject and the direct object.

(16) *Natura stabilește o armonioasă relație.
   nature establishes a harmonious relationship

For a better understanding of the manner in which argument structures of relational nouns and, especially, RCCs are expressed, we have developed a detailed
analysis based on data in the ZiareRom corpus (we also resorted to Internet linguistic samples). The results of the analysis are given below.

4. Further corpus data

4.1 Argument realization structures

Given that our corpus (ZiareRom) is large (over 80 million words), the analysis had to use both machine and manual processing. First, we built an inventory of relational nouns found in the corpus. In order to achieve this goal, we first extracted all the nouns followed by prepositional phrases headed by the preposition *dintre* 'between'-PP. We then kept in our inventory only the nouns with a *between*-PP expressing reciprocity and we identified 224 relational nouns.9 We further checked how many of them occurred in at least one context with RCC. We thus obtained a list of 173 nouns, given in the Appendix.

In what follows, our analysis concentrates on the context of the noun *relație* 'relationship', which is neutral from a semantic point of view and well represented in the corpus (13,358 occurrences). We focus on the argument realizations of this noun and in particular on the argument realization through RCC. The results are summarized in Table 1.

Table 1. Argument realization structures of the noun *relație* ‘relationship’

<table>
<thead>
<tr>
<th>Subcategorization frame</th>
<th>cu-PP (with-PP)</th>
<th>dintre-PP (between-PP)</th>
<th>RCC (eg. man-nature)</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of occurrences</td>
<td>6,015</td>
<td>2,146</td>
<td>529</td>
<td>4,668</td>
</tr>
<tr>
<td>Rate</td>
<td>45%</td>
<td>16%</td>
<td>4%</td>
<td>35%</td>
</tr>
</tbody>
</table>

As Table 1 shows, the noun *relationship* has several subcategorization frames. By far the most frequent structure is that involving *cu*-PP 'with'-PP. A typical example is: *relația mea cu familia* ‘my relationship with my family’. Another is given in (17).

(17) *Un medic chiar are o relație cu pacient-ul.*

a physician really has a relationship with patient-

9. It is worth noting that in Romanian, as in English, the preposition *dintre* 'between' also denotes a position (as in *numărul dintre doi și patru* 'the number between two and four') or partition (as in *alegerea dintre Dumnezeu și Diavol* 'the choice between God and the Devil').
The structure in (17), where one argument of the predicate *relationship* is shared with the subject argument of its governor, probably satisfies discourse requirements the best and therefore is the most frequent.

The examples in (18) illustrate the subcategorization frame with *dintre-PP* 'between'-PP:

(18) a. relația dintre cele două state
   relationship between the two states
b. relațiile dintre Tokyo și Phenian
   relations between Tokyo and Pyongyang

Under the “Others” heading we list the cases displaying a plural possessive adjective, *their relationship*; a genitive plural noun phrase, *the relationship of the two states*; a compound “group” adjective, *American–Russian relations*; an inter-derived adjective, *inter-human relations*; or simply the cases where the noun *relationship* lacks arguments in the same sentence, because they are recoverable from the larger context.

It is worth mentioning that the relational nouns grouped by Olsen (2004: 299) under the heading Collection Type, such as *combination* and *mixture*, in our corpus also select a *between-PP*. This fact shows that they are ordinary relational nouns with reciprocal meaning. However, their meanings express a relationship from which new entities result, so that the elements participating in the relation become parts of the resulting entity. Due to this fact, collective relational nouns can select a *de-PP* 'of'-PP expressing the content of the entity (19).

(19) a. o combinație dintre alb și negru / de alb și negru
   a combination between white and black / of white and black
b. amestec-ul dintre sare și apă / de sare și apă
   mixture-art between salt and water / of salt and water

Note that with nouns like *dialogue, interaction, relationship*, etc., in which participants keep their individuality, the *of-PP* realization is not allowed: *dialogul de mamă și fiică* ‘the dialogue of mother and daughter’, *interacțiunea de asfalt și pneu* ‘the interaction of asphalt and tire’, or *relația de SUA și Rusia* ‘the relationship of the USA and Russia’.

In what follows, we pay special attention to evidence from the corpus regarding the RCC.

The elements of the RCC are of two major types: proper nouns (simple or compound), *relația Cotroceni – Palatul Victoria* ‘the Cotroceni–Victoria Palace relationship’, and bare nouns (that is, nouns without determiner or dependents) *relația antrenor – jucător* ‘the coach–player relationship’. However, there are also cases where RCC elements are nouns with dependents and determiners. In this
situation, the nouns are always generic: *relația autor – locul faptei* ‘the author–crime scene relationship’ (see also (4) above).

It is worth mentioning that the determiner allowed to occur in RCC seems to be exclusively the definite article (*-ul* ‘the’). This fact strengthens the generic interpretation of this type of argument realization, unlike the other realization types, such as those involving *between*-PP or *with*-PP, which are used precisely for specific individuals. This fact could also explain the relatively low percentage (4%, Table 1) of the use of RCC.

Despite these quite severe restrictions in use – proper nouns, bare nouns, definite article – RCC allows users’ creativity sometimes to be manifest.  

### 4.2 On RCC independence

In the following, we attempt to answer the question whether RCC is to some extent independent by looking for evidence in our corpus. This question arises from Olsen’s statement that the constituents $N_2 N_3$ saturate the argument position of the head at the morphological level (2004:28). In other words, the structure $N_1 N_2 N_3$ forms a complex morphological compound.

The following data in the corpus cast doubt on the adequacy of treating trinominal structure as a morphological unit.

1. The head noun may have an adjunct placed between it and the RCC: *o relație armonioasă PNL-PSD* (‘a harmonious relationship between the PNL and the PSD parties’) (7PLUS 03/04/07).
2. There are coordinate RCCs, as we have seen in (3), and also coordinate heads: *comunicarea și cooperarea cluburi-FRF-AJF* (‘the communication and cooperation between the FRF, AJF, and clubs’).
3. The appositive status of RCC can be explicitly emphasized:

   \[(20)\] *o relație de tip protector – protejat*
   
   a relationship of type protector – protégé

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10. See for example “Combinarea sacul cu bani – Steaua – cruci mari făcute cu dreapta de față cu ziariști – câțiva consilieri pricepuți – charisma celui care știe cum se mulge o oaie pare, în anul 2007, formula ideală pentru un prezidențial cert” (EvZ 30/03/07). ‘The combination bag full of money – Steaua football team – the making of the sign of cross in the presence of the press – some skilled advisors – charisma of the one who knows how to milk a sheep seems in 2007 the best device for a successful candidate for the presidency.’

11. Bernard Fradin also considers that the whole structure $N_1 N_2 N_3$ forms a construction and that $N_2 N_3$ cannot be used independently (p.c.).
All these examples show that the head and the RCC in a tri-nominal structure can independently undergo syntactic operations like adjunction, coordination or appositive expansion. This fact invalidates the assumption that the structure is a morphological unit.

Special attention should be paid to example (20). It suggests that RCC is not always a valency complement: it can also be the adjunct of the relational noun. This hypothesis is supported by examples like (21).

(21) *Avem* o *relație* jucător - antrenor.

have.1PL a relationship player coach

‘We have a player–coach relationship.’

It is obvious that the elements participating in the relationship are referred to by *we*, which is inferable from the verb *avem*. In this case, the construction *player–coach* is an adjunct showing the kind of relationship. The adjunct status becomes more obvious when the noun *relationship* is modified by a *de*-PP ‘of’-PP, as in (22).

(22) a. *Eu am avut cu el o relație* de patron – manager.

I had with him a relationship of owner manager

‘I had a relationship of owner–manager with him.’

b. *Politicienii au o relație* de iubire-ură cu presa.

politicians have a relationship of love hate with press

‘The politicians have a relationship of love–hate with the press.’

The PP headed by *de ‘of’* in (22) seems to specify the type of relationship (or its property), not the arguments of the relationship. In this respect, the above structures follow the pattern “I had a relationship of love/of cooperation/of mutual respect … with him”.

In this situation the *of*-PP is an adjunct. At the same time, the constructions patron-manager ‘owner–manager’ in (22a) and iubire-ură ‘love–hate’ in (22b) may be considered RCCs, too. The former denotes the relationship between an owner and a manager, as the following paraphrase shows: “I had a relationship with him like the one between an owner and a manager”. The latter is special because its meaning is not “The politicians have a relationship with the press like the one between love and hate” but “The politicians have, with the press, a relationship alternating or combining love and hate”. Thus, the RCC *love–hate* proves to have its proper relational meaning, that of alternation or amalgamation.

We also recognize the possibility of associating an RCC with non-relational nouns as an argument that RCC can independently have a relational meaning – thus

12. The arguments are *I* and *him* in (22a), and *the politicians* and *the press* in (22b).
expressing an underspecified type of relation. Mathieu-Colas (1995:165) notes that in these cases the articulation between the elements remains implied.

(23) ș i d u s - u l l a f i l m e o a c t i v i t a t e m a m - a - f i i c ă  
also go-PTCP-ART to movie is an activity mother daughter
'going to movie is also a mother-daughter activity' (Cancan 17/04/11)

In (23), activity is not a relational noun, yet the speakers do understand that it refers to an activity that involves the interaction between mother and daughter. With respect to this fact, Olsen (2001:300) says that, in examples such as mind–body problem, cost–benefit analysis, Clinton–Lewinsky saga, the between relation seems to be a conceptual inference induced by the meaning of the head (i.e. problem, analysis, saga). We, on the contrary, sustain the opposite idea, namely that the conceptual inference of a relation is induced by the RCC itself.

From a syntactic point of view, the relative independence of RCC is proved by the operation of topicalization, as in (24a) (a headline) and (24b).

(24) a. SUA – Rusia: paş i de i n t â m p i n a r e , d a r n u c u  
USA – Russia: steps toward negotiations but not at
orice preţ  
any price (Finan. 10/03/09)

b. La ANRE, înt r e 1 8 p e s o a n e e x i s t ă r e l a ț i i d e r u d e n e i , u n  
at ANRE between 18 persons exist relations of kinship a
tip de “famiglia” din energie: soţ-soţie,
type of famiglia in energy husband-wife
frate-soră, mamă-fiică.
brother-sister mother-daughter

‘At ANRE, there are 18 persons between whom kinship relationships exist, a type of “famiglia” in the energy domain: husband–wife, brother–sister, mother–daughter.’ (EvZ 06/06/2007)

On the basis of a similar example in French (Royal-Sarkozy: projet contre projet ‘Royal–Sarkozy: project versus project’), Gushchina (2008:2514) holds that the link between the two components (Royal and Sarkozy) expresses two semantic nuances: coordination and complementation induced by the preposition contre ‘versus’. Just as this chapter does, she holds that this type of example seems to represent the free juxtaposition of two independent NPs.

The independent meaning of RCC is sometimes hard to obtain if an appropriate context is not provided. The constructions USA–Russia, mother–daughter, and Greece–Russia: 1–0, are easy to understand because political, familial, and sports relationships are common. Conversely, the construction man–fence is weird, so
long as it is not placed in a context that specifies the relationship between a man and a fence, such as in *The man–fence contact triggers the house alarm*, or *Man–fence: a dangerous contact* (if the fence is electric).\(^{13}\) Besides, being a phrase, RCC creates the necessary syntactic opportunities for expressions like “A star–mercy relationship doesn’t exist”, where two completely different concepts (e.g. *star* and *mercy*) are connected into a meaningful utterance.

In sum, assuming the independence of RCC should not imply that an RCC can occur anywhere in a sentence. It obeys syntactic rules like any other phrase. What we did was merely to point out that RCC exhibits some features supporting its relative independence, namely:

a. the availability of syntactic operations like coordination, adjunct insertion, and explicit classifying apposition;\(^ {14}\)

b. a proper meaning allowing RCC to be attached to nouns other than relational nouns;

c. the ability to be topicalized;

d. the capacity to fulfill different grammatical functions such as complement or adjunct of a relational noun, as well as complement of the preposition *de* ‘of’.

In Figure 1 we offer a schematic syntactic representation of the tri-nominal structure discussed above. The head is a relational noun, and the complements in an RCC are expressed by bare nouns.

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13. Note that a copulative coordination phrase, whose independence is uncontroversial, such as *man and fence* is as weird as RCC, if a context is not provided.

14. For the meaning of the term classifying apposition, see Bosque & Demonte (1999:4779). In short, a classifying apposition is one allowing the insertion of a word like *type*, *style*, *class*, etc.: *una pintura Renacimiento = una pintura (estilo) Renacimiento*. 

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**Figure 1.** Tri-nominal syntactic structure
In what follows, a formal representation of the structure under scrutiny here is given. It is expressed within the framework of Construction Grammar, which, at Fradin’s (2009) suggestion, best reflects the data from the corpus.

5. A Construction Grammar representation

5.1 Advantages of the constructionist approach

Construction Grammar (CG) is a usage-based grammar model. Its goal is to account for all the constructions in a given language, regardless of the so-called ‘core–periphery’ distinction. In this respect, even if RCCs appear ‘marginal’ because of their relatively low frequency, e.g. 4% in Table 1, CG is able to account for their existence in a simple yet principled way.

At the same time, CG provides the best solution to the oscillations in treating these tri-nominal structures in the syntax or morphology or the interface between them. Aiming for a satisfactory explanation of the data encountered in the corpus, we argued in this paper for the free phrase nature of RCC and the whole structure that contains it. Nevertheless, CG imposes no a priori choice in this respect (see also the comments on this issue in Fried & Östman 2004: 17). In other words, constructions are representational and analytical devices appropriate for approaching expressions belonging to any type of linguistic level: lexicon, morphology, syntax, semantics, pragmatics, or discourse.

Another attractive aspect is that CG is surface-oriented. Unlike transformational grammar, which obtains structures from more basic ones through derivational processes, CG approaches ‘unpredictable’ structures directly. For example, instead of proposing a sophisticated succession of rules which could derive RCC from a between-PP, CG is able to describe RCC by means of a specific construction.

One of the main sections of the analysis of the tri-nominal structure focused on showing that RCC is just one of several possible realizations of the relational-noun arguments. This concerns Linking Theory, which occupies an important place within the constructionist framework. From this point of view, it ought to be noted that our approach follows that of Fried and Östman (2004: Chapter 2), which differs from that of Goldberg (1995). An important difference between the two versions is that Fried and Östman’s analysis allows the complements to successively attach to the predicate that requires them, through ‘linking constructions’. Goldberg’s, on the other hand, avoids succession and treats both the complements and their predicate in only one construction. As shown in
Section 4.2., we consider the representation of RCCs as constructions independent of the relational noun to be more suitable. This representation allows RCC to occur as a construction attached to a (non-)relational noun or, alternatively, to occur freely.

Technically speaking, a construction is a form–meaning pair learned as such. Any linguistic pattern, then, is a construction, as long as a given aspect regarding its form or function cannot be predicted on the basis of its components or on the basis of other already inventoried constructions. At the same time, though, if the patterns are sufficiently frequent, they are themselves considered constructions, even if they are fully predictable.

Constructions combine freely to form actual expressions (technically termed constructs), insofar as they do not conflict with each other. The tool for construction representation is the formal device of feature structures. The principle that governs what set of feature structures is allowed to form a construction is the operation of unification (see Goldberg 1995, 2006; Fried & Östman 2004). An example of how a constructional device works is given in the following section, together with the formal representation of the tri-nominal structure relație om – natură ‘man–nature relationship’.

5.2 Formal representation of tri-nominal structure

In the constructional representation of the tri-nominal structure, we concentrate on specific constructions. Only the relevant features of these constructions are mentioned. In order to represent the autonomy of RCCs, we propose a general construction, depicted in Figure 2. The following elements are relevant in it. Semantic information (encoded as sem) is represented as an unspecified relationship (R) between two or more equipotent items (for more than two items, we use Kleene’s sign ‘+’). The items are tagged (#1, #2, etc). Multiple use of the same tag is the mark for coindexing (that is, sharing the same element). Each tag denotes an item displaying certain syntactic features (encoded as syn), namely the noun category and the nominative case (cat n, case nom). The semantic information of the items is left unspecified (…). The construction formed from these elements is general enough to be a valency of a relational noun or an adjunct in other environments.

15. The conjunction of predicates R & EQUIPOTENT actually notes a relational coordination.
If an RCC is used as a valency frame (not an adjunct), it combines with the linking construction Relational Noun Valency (RNV, see Figure 3, where val stands for valency frame). RNV stipulates that a relational noun realizes its arguments by means of complements with the grammatical function of object (gf obj). The connection between the two constructions is achieved through the indication Inherit RCC. This indication specifies the subcategorization frame of the relational noun. In the present case, it specifies that it is an RCC (not a between-PP or with-PP) that is appropriate to the relational noun.

Figure 4 depicts the construction which corresponds to the noun relație ‘relationship’. This is a lexical construction (marked by the feature lxm, lexeme), indicating that this noun is a predicate with two or more arguments. Argument realization can be achieved through RCC (because the construction inherits RNV, which inherits RCC). The representation also specifies the type of relationship expressed by the noun (i.e. RELATIONSHIP’). This type will later override the unspecified relation type of RCC.

16. Note that there are some predicates that restrict the number of arguments. For instance, two arguments define a pair relationship (PAIR\((x, y)\)), whereas three arguments define a trio relationship (TRIO\((x, y, z)\)).
Before describing the construct that corresponds to the phrase *relație om – natură* ‘man–nature relationship’, we also have to specify the device which licenses expansions of the noun. This is the general instantiation construction NP (Figure 5). The NP construction may get the desired constructs ‘projected’ by a relational noun. The semantics of the NP construction incorporates the semantics of its parts.\footnote{As the reader can see, the semantic representations are not elaborated here due to their complexity, which would require a specific study.} This is expressed by the symbols $\downarrow 1$ and $\uparrow j$. It is worth mentioning that the NP construction also allows the combination of a non-relational noun with an RCC, as in the example *mother–daughter activity*. In such cases, RCC contributes the semantics of the whole nominal phrase with an unspecified relationship, whose members are equipotent.

We are now in a position to supply the representation of the whole construct *relație om – natură* ‘man–nature relationship’. This is done in Figure 6.
The right-hand box incorporates the lexeme boxes (i.e. lexical constructions) om and natură into RCC, by indicating that they are the arguments of an unspecified equipotent relation and are expressed, at a syntactic level, by nouns in the nominative. The left-hand box displays the superposition of several constructions. The lexical construction relație describes the noun relație as the semantic predicate relationship′ with (two or more) arguments that are valency elements as well. This construction combines with the RNV, which adds the information that the valency elements are objects (not obliques). Further, the result combines with the RCC formed earlier, which instantiates the valency elements (by also limiting them to two). The semantic predicate relationship′ overrides the unspecified relation R of the RCC (see the upper level) and takes over its arguments by coindexings #1 and #2. Finally, all combine with the NP construction, which imposes relație as the head of a noun phrase and combines the semantic information of the NP components in a complex way only sketched here (by ↓↑4 and ↓↑5).

6. Conclusion

This chapter has discussed a problem regarding the valency complements of symmetric relational nouns. We have shown that these types of nouns may express their arguments by means of a juxtapositional construction of two nominals. We termed this construction Relational Coordination Construction (RCC). The head noun along with its RCC forms a tri-nominal structure of the type relație om – natură ‘man–nature relationship’. It ought to be emphasized that RCC is only specific to nouns. Verbs cannot use this option of expressing their arguments (not even those verbs belonging to the same lexical family as the relational deverbal noun).
Examination of the corpus data reveals, on the one hand, that within an RCC
nominals may be gather together which are morphologically, syntactically, or
semantically independent of one another. It is true, however, that bare nouns and
proper names are the most frequent. The RCC meaning is generic. Whenever it
occurs independently of a relational noun, RCC expresses an underspecified rela-
tionship between equipotent members.

On the other hand, the corpus shows that there are also some (few) situations
where RCCs are not valency complements of a relational noun, but adjuncts. In
this latter case RCCs make explicit the type of relationship of the noun. They thus
work as classifying appositions or prepositional adjuncts.

In the last section we sketched a formal representation within the construc-
tionist framework, which essentially accounts for all these data. We illustrated the
way the analysis works by modeling the structure relație om – natură.

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Appendix

The following symmetric relational nouns (selecting between-PP) occur in at least one context with RCC, on the web.

acord ‘accord’
adversitate ‘adversity’
afacere ‘affair’
aliantă ‘alliance’
alternanță ‘alternation’
amestec ‘mixture’
amicitie ‘friendship’
analogie ‘analogy’
antagonism ‘antagonism’
antiteză ‘antithesis’
apropriere ‘approach’
aranjament ‘arrangement’
armonie ‘harmony’
asemănare ‘resemblance’
asimetrie ‘asymmetry’
asociere ‘association’
astragasiune ‘attraction’

autostradă ‘highway’
balanță ‘balance’
bătălie ‘battle’
blocka ‘freeze’
câștorie ‘marriage’
câsnicie ‘matrimony’
ceartă ‘controversy’
cioară ‘encounter’
coalitie ‘cohesion’
coalitie ‘coalition’
colaborare ‘collaboration’
combinatie ‘combination’
comparation ‘comparison’
compatibilitate ‘compatibility’
competiție ‘competition’
complicitate ‘complicity’
comunicare ‘communication’
comuniune ‘communion’
concordanță ‘concordance’
concubinaj ‘cohabitation’
concurență ‘competition’
conexiune 'connexion'
cuondreată 'junction'
confruntare 'confronting'
conlucrare 'cooperation'
contact 'contact'
contract 'contract'
contradicție 'contradiction'
confluență 'junction'
confruntare 'confronting'
cooperare 'cooperation'
corelare 'correlation'
corepondență 'correspondence'
culoa 'corridor'
cumețrie 'godfathership'
cuplu 'couple'
decalaj 'discrepancy'
demarcăție 'demarcation'
desebire 'difference'
departajare 'deciding between'
dependență 'dependence'
derby 'derby'
desincronizare 'desynchronisation'
dezacord 'disagreement'
dezbatere 'debate'
dezechilibru 'imbalance'
dialog 'dialogue'
diferend 'argument'
diferență 'difference'
discrepanță 'discrepancy'
discriminare 'discrimination'
discuție 'discussion'
disociere 'dissociation'
disonanță 'dissonance'
dispropoziție 'disproportion'
dispută 'dispute'
distanță 'distance'
distincție 'distinction'
divergență 'divergence'
divorț 'divorce'
dragoste 'love'
drum 'way'
dualism 'dualism'
duet 'duet'

duel 'duel'
dușmanie 'enmity'
echilibrur 'equilibrium'
egalitate 'equality'
finală 'final game'
fricțiune 'friction'
frontieră 'frontier'
fuziune 'fusion'
gâlceavă 'quarrel'
grup 'group'
identitate 'identity'
idilă 'idyll'
impact 'impact'
imcompatibilitate 'incompatibility'
inegalitate 'inequality'
teracțiune 'interaction'
tericonectare 'interconnection'
tericonexiune 'interconnection'
terdependență 'interdependence'
terfață 'interface'
terferență 'interference'
teroperabilitate 'interoperability'
terseceție 'intersection'
terival 'interval'
îubire 'love'
imbinare 'joining'
încăierare 'skirmish'
încredere 'confidence'
înfrățire 'fraternity'
înfruntare 'facing'
întâlnire 'meeting'
întrevedere 'meeting'
înțelegere 'agreement'
joc 'game'
legătură 'link'
limită 'limit'
litigiu 'dispute'
luptă 'fight'
marij 'marriage'
meci 'match'
negociere 'negotiation'
opozite 'opposition'
oștită 'hostility'
pact 'pact'
pereche 'pair'
paralelism 'parallelism'
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CHAPTER 6

Classifier noun phrases of the type N1N2 in Bulgarian

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This chapter discusses classifier* noun phrases of the type Noun1 Noun2 (N1N2) in Bulgarian. The data analysis and the language-specific properties described show that the apposition-like relation between the two nouns is in fact a government relation. For that reason, within the framework of Head-driven Phrase Structure Grammar (HPSG) I consider classifier noun phrases to be phrases of type head–complement, where the first noun (N1) is the syntactic and semantic head, while the second (N2) is an argument, which, however, might be optional on the syntactic level. Three semantic subtypes are presented and discussed: measure – substance, container – contained, and form of grouping – grouped entities. The fine-grained distinctions among them are also made explicit within the ideas of qualia structure and the generative lexicon.

1. Introduction

Many languages allow nominal phrases of the type Noun1 Noun2 (N1N2) or Noun Phrase1 Noun Phrase2 (NP1 NP2). They can exhibit two relations between the first (N1) and the second (N2) nouns: either apposition or government. Hence,

* The categorization of nouns in a cross-linguistic context is far from a trivial task. Usually ‘classifiers’ are viewed as an intermediate state of noun classification systems – positioned between lexical noun terms and morphosyntactic noun classes (see further in Grinevald 2002). Although, when following these considerations, Bulgarian is not considered a ‘classifier language’, I believe that it has classifier-like constructions. These constructions are functionally close to the true classifiers, typical of languages like Chinese. Like Lehrer (1986) I assume that the notion of ‘classifier’ subsumes the notions of measures, containers, and forms of groupings (collectives).
these relations are language-dependent. By ‘apposition’ I understand a grammatical relation in which two nouns are placed next to each other and one modifies the other. By ‘government’ I mean a grammatical relation, in which the head subcategorizes for its dependent.

In contrast to other Slavic languages, Bulgarian is mainly an analytic language. Historically, its development (mainly lexicon and grammar) has been influenced by the Greek and Turkish languages. Concerning the nominal system, Bulgarian has lost its case declension. The weakening of synthetism (including cases) dates back to the 12th–14th centuries AD. Only the vocative still exists, but only some nouns have a distinct vocative form. Instead, a reduced set of case forms is preserved in some types of pronouns. Bulgarian has a definite article, which is realized as a postposed making part of the word. However, syntactically it is considered a phrasal affix within an NP.

Bulgarian noun phrases, in particular, can show four internal syntactic relations, three of which are presented below:  

1. agreement in gender and number (Adjective Noun),
2. prepositional linkage (N preposition N),
3. juxtaposition (NN). Semantically, the third, apposition-like type can be divided into two subgroups: (3a) true appositions and (3b) classifier expressions.

(1) Agreement: A N
   xubav-a žena
   pretty-F.SG woman-F.SG
   ‘a pretty woman’

(2) Prepositional linkage: N p N
   žena ot Sofia
   woman-SG from Sofia
   ‘a woman from Sofia’

(3) Juxtaposition: N N
   a. čičo Ivan
      uncle-M.SG Ivan-M.SG
      ‘uncle Ivan’
   b. čaša voda
      glass-SG water-SG
      ‘a glass of water’

The fourth syntactic relation – government – if considered in a broader sense (i.e. not only as a case assignment) is typical of deverbal and relational nouns.
I consider examples like (3a) to be appositions, in which one of the nouns modifies the other. There are arguments in favor of analyzing N1 as the head and arguments in favor of selecting N2 as the head. However, this issue is not the focus of this text.

My aim is to show that although type (3b) displays an appositional ordering, that is, it lacks overt case marking, which is lost in Modern Bulgarian, and sometimes it also lacks number agreement – in fact it exhibits government relations. Furthermore, the nouns involved are transitive nouns with an obligatory argument. And, finally, at the syntactic–semantic interface these classifier nouns are placed closer to relational nouns. They are also viewed as supporting the work of quantifiers.

In traditional Bulgarian grammars, both phrases (3a and 3b) are viewed as appositions, and discussion mainly concerns the problem of which noun is the head and which is the modifier. In Vakarelijska (2011:48), these constructions are considered head–modifier phrases, in which N1 is the syntactic head and N2 is the modifier. Such phrases are called partitive–category constructions. As has recently been proposed for other languages, such as Russian, German, and Dutch (see Corbett et al. 1993; Teubert 2003; Trawinski 2000; Van Eynde 2006), I assume that in these phrases the first noun functions as head. However, in contrast to the predominant analyses, in which these classifier nouns are viewed as types of numerals and thus – selecting their nominal heads, I argue that N1 subcategorizes for N2. The proposed analysis in this text follows the HPSG theory (Pollard & Sag 1994). In the HPSG literature the ‘mutual-selection’ feature is preferred when NP-internal agreement is considered. This means that there is a mechanism through which the head selects its dependent as well as the dependent selects its head at the same time. The mechanism differentiates between specifiers and modifiers: “The factor which distinguishes specifiers from modifiers is lexical selection: while specifiers are selected by their head, modifiers are not” (Van Eynde 2006:159). This is thus a good alternative analysis to the one I propose here. However, I consider N1 nouns to be closer to relational and deverbal nouns than to determiners and quantifiers. This means that I view N1 nouns as subcategorizing heads rather than modified heads or dependents. In this way, I pursue a unified analysis of Bulgarian argument-taking nouns.

The semantics of nominal constructions with classifiers has been explored in many theoretical frameworks and for a number of languages. The problem of their typology remains complex and non-homogeneous. Borer (2005), among others, considers lexical expressions of quantity to be ‘stuff dividers’, which seems applicable to quantity nouns, too. Pit’ha (1981:219) calls such nouns ‘quantifiers in a broad sense’ and says that nouns of the type ‘group’ have ‘frames with obligatory actants’.
In this chapter, as mentioned above, the phenomenon is analyzed in the constraint-based framework of Head-driven Phrase Structure Grammar, in which I incorporate Pustejovsky’s ideas of the generative lexicon (Pustejovsky 1998). The incorporation adds to the semantic nature of the classifiers in their exophoric and endophoric usages.

The chapter is structured as follows: Section 2 presents the typology of Bulgarian classifier noun phrases. It also provides some language-specific properties, whose selection properties differ with respect to the complement/adjunct distinction. Section 3 describes the proposed analysis, according to which classifier NPs are considered head–complement phrases. Additionally, the specific behavior of each subtype is outlined. Finally, the semantic contribution of the head is discussed. The last section offers conclusions.

2. Typology and language-specific properties

I use the term ‘classifier’ as a hypernym for all the specific types listed below. Needless to say, the content of this notion is very different from that used extensively for languages like Chinese, where nouns and quantifiers are systematically mediated by ‘classifiers’. However, as that sense also exists idiosyncratically in languages like English (one pair of shoes), I adopt it for clarity when presenting the typology in Bulgarian.

The N1N2 classifier expressions can be subdivided into three groups: (i) measure – substance (4), (ii) container – contained (5), and (iii) form of grouping – grouped entities (6). As the names of the types suggest, in type (i) the first noun indicates measure; in type (ii) it indicates a container; and in type (iii), a grouping formation.

(4) measure – substance
a. litâr mljak-o
   liter-sg milk-sg
   ‘a liter of milk’

b. kilogram jabâlk-i
   kilo-sg apples-pl
   ‘a kilo of apples’

2. Note that in HPSG both roles, modifier and adjunct, are called adjuncts.
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(5) container – contained
   a. čaš-a vod-a
glass-sg water-sg
‘a glass of water’
   b. košnic-a domat-i
basket-sg tomatoes-pl
‘a basket of tomatoes’

(6) form of grouping – grouped entities
   a. oblak prax
cloud-sg dust-sg
‘a cloud of dust’
   b. tâlp-a xora
crowd-sg people-pl
‘a crowd of people’

For the describing properties of these constructions, I use several linguistic criteria: selectional restrictions (2.1), paraphrases with a prepositional phrase (2.2), comparison with synthetic Slavic languages (2.3), subject–predicate agreement vs. NP-internal agreement (2.4), pronominal coreference substitution (2.5), and obligatoriness of the noun within the NP (2.6). Then I give some additional local properties by type. The rationale behind outlining these properties is to show that the phenomenon is complex at the syntax–semantic interface, and also to provide evidence that the proposed head–complement analysis is appropriate for Bulgarian.

My hypotheses have been verified using data from the Bulgarian National Reference Corpus.3

2.1 Selectional restrictions

The second noun (N2) in the classifier expressions is an argument required by the valency frame of the first noun (N1), which is the classifier. On the syntactic level, such arguments are called the complements of the head. All head nouns (N1) require their dependents (N2) to be determiner-less and quantifier-less. The presence of indefinites, determiners, or quantifiers renders the phrases ungrammatical, as illustrated in (7).

(7) a. litâr *tova mljako
liter this milk
   b. litâr *mljako-to
liter milk-art

3. ⟨www.webclark.org⟩
c. *chasha edno kafe
   cup one coffee

d. *grupa njakakvi studenti
   group some students

It can be seen that all three types of N1 introduced above require a noun in either the singular (*mljako, kafe), or the plural (*studenti), depending on the semantic characteristics of N1, that is, whether it requires a non-discrete or a discrete entity. In this respect classifier nouns differ from numerals, since numerals usually require discrete entities to combine with.

This property shows that N1 imposes grammatical restrictions on N2. Thus, it is the head, which selects for its complement.

2.2 Paraphrase with a prepositional phrase

Classifier expressions compete with prepositional phrases, as in (8). Appositives do not allow this kind of alternative marking. They usually compete with predicative constructions that express attributive equality. Compare the appositional construction uncle John with the predicated paraphrase John is my uncle.

\[\text{(8) measure – substance} \]
\[
\text{litâr ot mljako-to} \\
\text{liter-sg from milk-sg.art} \\
\text{‘a liter of milk’}
\]

The type presented in (8) shows the strongest partitive relation ‘something from/of something’ of the three types. Here are examples of the other two:

\[\text{(9) container – contained} \]
\[
\text{čaša s voda} \\
\text{glass with water} \\
\text{‘a glass filled with water’}
\]

\[\text{(10) form of grouping – grouped entities} \]
\[
\text{tâlpa ot/s xora} \\
\text{crowd from/with people} \\
\text{‘a crowd of people’}
\]

As is evident, in type (9) a non-partitive preposition is used, while in type (10) a partitive preposition (ot ‘of, from’) alternates with an additive one (s ‘with’).\(^4\) No definiteness marker on N2 is required as it is in type (8).

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\(^4\) The preposition \(s\) has a phonetically conditioned allomorph \(sâs\), which is used when the next word begins with \(s\)- or \(z\)-. Note that the additive preposition is not used very frequently, but it does occur.
Although it is assumed that NPs with prepositional phrases ‘compete’ with the above mentioned NPs of type N1N2, it must be noted that the former phrases are rarer, in general, than the latter to express exactly the same meaning. Thus, using nouns with prepositional phrases is evoked by a special context, such as the need to stress the partitive relation (as in (8)), the content (as in (9)), or the form (as in (10)). For example, the statistics of the word group in NPs of the type N1N2 or NP PP in the corpus showed the following ratio: of 783 relevant occurrences, 560 are of the NN type while 223 are of the NP with a PP type that have the same meaning.

This criterion shows that the obligatory argument can be expressed in alternative ways, which is good evidence for considering N1 the head subcategorizing for its arguments.

2.3 Comparison with other Slavic languages

In similar N1N2 phrases, the second noun (N2) in synthetic Slavic languages has overt genitive case marking. Since modern Bulgarian has lost its declension system, such contrastive approaches are justified and helpful for interpreting the grammatical relations, which are overtly non-marked. Here are two examples comparing Russian with Czech:

(11) Russian: litr molok-a
    Czech: litr mlék-a
          liter milk-gen
          ‘a liter of milk’

(12) Russian: stakan vod-y
    Czech: sklenice vod-y
          glass water-gen
          ‘a glass of water’

Since these modern Slavic languages are closer to Old Bulgarian in their grammatical systems, it can be assumed that in contemporary Bulgarian N1N2 classifier phrases, the relation between the two nouns is government rather than apposition.

This property shows that N2 is morphologically marked in other Slavic languages as a dependant. Thus, N1 is the head of the construction, subcategorizing for N2.

Apart from the morphosyntactic properties listed in 2.1, 2.2, and 2.3 above, there are also other properties typical of classifier expressions that, however, also display non-local features (2.4, 2.5, and 2.6 below), and thus are conditioned by discourse.

5. According to our tradition, I use Old Bulgarian as a synonym to Old Church Slavonic.
2.4 Subject-predicate agreement vs. NP-internal agreement

In subject position, the agreement of a classifier NP allows for alternative patterns: the predicate agrees either with the head (dojde), or with the dependent (dojdoxa). For example:

(13) *Grupa student-i doj-e/doj-oxa.*
    group-sg students-pl come-aor.3sg/aor.3pl
    'A group of students came.'

In contrast to Romanian, where the use of a modifier/determiner/quantifier other than the indefinite article itself (*a group*) would require only singular agreement, in Bulgarian there is no such restriction. The type *form of grouping* – *grouped entities* seems to be the most unrestrictive type with respect to alternative agreement behavior. The other two types, however, *measure* – *substance* and *container* – *contained*, seem to be more dependent on specific conditions in the sentence, such as word order and the semantics of the predicate.

Thus, this property does not favor any of the nouns as head or dependent. This fact is not as peculiar as it seems at first sight, since similar variance of agreement can be observed in coordinated NPs in subject position. If the coordinated NPs are semantically close, then the agreement with the predicate might be singular.

The agreement within NPs of all the N1N2 types considered here shows another tendency. Preposed extensions (such as adjectives) agree only with N1, while postposed modifiers (such as relatives) might agree with either N1 or N2 depending on the semantics. This fact supports the idea that N1 is the head of the N1N2 construction, since it takes the local morphosyntactic agreement, while N2 is its governed complement.

2.5 Pronominal coreference substitution

Either the first noun (N1) or the second (N2) can be pronominalized in semantically unspecified contexts. This is shown in (14) with the type *container* – *contained*, where *ja* pronominalizes čaša or *go* pronominalizes kafe:

(14) *Vze-x čaša kafe. Iz-pi-x ja/go.*
    take-1sg.aor cup-f.sg coffee-n.sg pfv-drink-1sg.aor her-f.sg/it-n.sg
    'I took a cup of coffee. I drank it up.'

The same observation holds for the other two types: *measure* – *substance* and *form of grouping* – *grouped entities*. Like the subject–predicate criterion discussed above, this one does not distinguish any of the nouns as head or dependent.

6. I owe this observation regarding Romanian to Ana-Maria Barbu.
The observations in 2.4 and 2.5 comply with Corbett’s agreement hierarchy (Corbett 2003), in which from left to right syntactic agreement weakens, while semantic agreement becomes stronger: *attributive* < *predicative* < *relative pronoun* < *personal pronoun*. In the case of Bulgarian classifier NPs of the type N1N2, the attributive use of the modifier is always syntactically bound, while agreement with predicates, relatives, and anaphoric pronouns is semantically justified, thus allowing alternative patterns. Recall that N1 has no restrictions on its attributive agreement (it might agree locally with determiners, quantifiers, adjectives, etc.), while N2 exhibits some restrictions on its local syntactic agreement (it cannot agree with determiners or quantifiers).

To sum up, local attributive agreement in the N1N2 nominal phrase, which is completely morphosyntactic, has as its locus N1, thus supporting my hypothesis that N1 is the syntactic head, subcategorizing over N2.

2.6 Obligatoriness of the nouns within an NP

This criterion might be related to the phenomenon of ellipsis, and it also depends on the lexical semantics of the predicate. In this respect I support Zwicky’s opinion, which is cited in (McGlashan 1993: 205): “The notion of obligatoriness, however, must be approached with caution, since the absence of a category can indicate either optional or elliptical status.” The obligatoriness criterion is also closely related to the issue of the reference status of this NP type. In my opinion, the measure – substance type as well as the grouping type have only one referent, while the container – contained type has two specific referents. This assumption is justified by the fact that in the first two types either of the two nouns can be omitted within the discourse, while in the last case the omission can also be evoked by the lexical meaning of the predicate. An example is (15): omission of *butilka* ‘bottle’ would produce an ungrammatical sentence, because the lexical semantics of the verb ‘to break’ requires an overt expression of some container. However, such occurrences are rare in general. In Bulgarian, this meaning would be normally expressed by other means (NPs with PPs, as discussed above; without the complement; or by a whole sentence). Additionally, it seems that concrete words denoting containers have different combinatorial powers. For example, the word *bottle* is more natural in such expressions than the word *cup/glass*.

(15) *Sčupix butilka vino.*

break-1SG.AOR bottle wine

‘I broke a bottle of wine.’

The omission of the container is allowed with another type of verb, such as ‘to give’ (to order, to drink, etc.), which evokes metonymical uses of the liquid taking on the role of the container, as in (16).
This property helps in distinguishing semantically among the three subtypes rather than in assigning the appropriate phrase type (head–complement or head–adjunct).

2.7 Other local properties

The three types of NP under examination show some further specific properties.

First, the measure–substance type can take count as well as mass nouns. Hence, a restriction of number applies to them in that count nouns appear in the plural and mass nouns in the singular. Additionally, apart from the numerals or other quantifiers, which stand in anteposition, only a reduced number of pre-modifiers of N1 can be used. For example, it can be modified by ‘whole’ or ‘additional’ (17a) but not by a qualifying adjective such as ‘beautiful’ (17b).

(17) a. Izpih cjal / dopâlnitelen litâr voda.
   drink-1SG.AOR whole additional liter water
   ‘I drank up the whole/an additional liter of water.’

b. *Izpih xubav litâr voda.
   drink-1SG.AOR beautiful liter water
   ‘I drank up a beautiful liter of water.’

Apart from the DP (Determiner Phrase)/QP (Quantifier Phrase) analysis, where the determiner or the quantifier is the head, in the linguistic literature there is also an alternative approach, according to which some combinations can be regarded as complex specifiers that modify their head. This is the view adopted, for example, in HPSG (Pollard & Sag 1994:360). Following this perspective, classifier nouns, which are countable, might form a complex specifier with the preceding numeral, as in (18).

(18) dva litr-a mljako
   two liter-PL milk
   ‘two liters of milk’

However, in our analysis we prefer to regard classifier expressions as heads. In accordance with this, combinations of a numeral plus a classifier like two liters might be treated as complex heads (not specifiers), which then subcategorize for N2 (milk). This issue is not further elaborated or pursued as a solution in this chapter, since in the singular and in some plurals the presence of a quantifier is optional in Bulgarian.
In the PP paraphrase, this type strongly favors the partitive preposition *ot ‘from/of’. But in such cases it assumes the entire quantity of N2. For that reason N2 within the PP paraphrase can only be definite (marked either by a definite article or by a demonstrative pronoun: *dva litra *ot mljako-to; two liters of milk-ART). This criterion also shows that N2 is an argument of N1, since the PP is a paraphrase of the N1N2 type. Compare the example where the noun ‘milk’ in square brackets is presupposed as a default argument, which remains unexpressed: *dva litra [mljako] *ot mljako-to (two liters [milk] of milk-ART).

Second, the *container – contained* type also takes count as well as mass nouns. The PP paraphrase prefers the preposition *s ‘with’. If the whole quantity is indicated by N2 via a definite article, then N1 also has to be definite. Thus, some kind of definiteness agreement is imposed by N2. For example, a phrase with an indefinite N1 (19a) is ungrammatical, while one with definiteness agreement (19b) is grammatical. This fact seems to be a counterargument to my claim that N1 imposes various restrictions on N2. However, the role of the category of definiteness in these phrases needs more elaboration, which remains beyond this chapter’s scope.

(19) a. *čaša s voda-ta  
glass with water-ART  
‘a glass of the water’  
b. čaša-ta *s voda-ta  
glass-ART with water-ART  
‘the glass with the water’

Note that the expressions become grammatical when the partitive preposition *ot ‘from/of’ is used with a definite N2. This situation is shown in (20). In such cases this type becomes closer to the type *measure – substance*.

(20) Izpix čaša *ot vino-to.  
pfv-drink-1sg.aor glass from wine-ART  
‘I drank up a glass of the wine.’

Third, the *form of grouping – grouped entities* type can also take count as well as mass nouns, depending on the entity that is formed (e.g. grupa studenti ‘a group of students’, but oblak prax ‘a cloud of dust’). The PP paraphrase can take the partitive preposition *ot ‘from/of’, s ‘with’, or na ‘of’. The situation with imposed definiteness agreement is similar to the previous type. For example, the phrase without definiteness agreement (21a) is questionable, but the phrase with agreement is grammatical.

(21) a. *grupa sas/ot/na studenti-te  
group with/of students-ART  
‘a group of the students’
b. *grupa-ta* *sas/ot/na* *studenti-te*
   group-ART with/of students-ART
   ‘the group of the students’

Note that when some syntactic definiteness is added, these constraints might be loosened. For example, the addition of a relative clause that modifies the noun *studentite* (‘the students’) makes the sentence grammatical (22).

   (22) Pokanix *grupa* *ot* *studenti-te*, *koito* *uchat* *tuk.*
       invite-1SG.AOR group of students-ART who study-3PL.PRS here
       ‘I invited a group of the students that are studying here.’

3. The proposed analysis

Our analysis is based on the distinction between the argument structure and valency lists, which is defined in the theory of HPSG (Manning & Sag 1995). The argument structure (ARG-ST) encodes the potential obligatory participants in the situation as an ordered list. This list follows the obliqueness hierarchy. It is used for modeling binding phenomena. The valency lists encode the projections of ARG-ST, which are syntactically realized. These lists include subject, complements, and specifiers. Thus the mappings between the two levels of representation might be:

- The argument exists in ARG-ST *and* it is also realized in Valency list(s).
- The argument exists in ARG-ST *but* it is not realized in Valency list(s).

An example of the first case is (23).

   (23) *Izvikax* *grupa-ta* *studenti.*
       PFV-call-1SG.AOR group-ART students
       ‘I called the group of students.’

N1 (‘group’) subcategorizes for N2 (‘students’). An example of the second case is the same sentence (24), but without the word *studenti* (‘students’).

   (24) *Izvikax* *grupa-ta.*
       PFV-call-1SG-AOR group-ART
       ‘I called the group.’

7. Specifiers are not considered here. They are mentioned just for completeness.
In this case N1 still requires N2 semantically, but N2 is omitted, since it is derivable through the wider context. As mentioned above, the measure and grouping types can omit their arguments within the given discourse, while omission in the container type also depends on the lexical semantics of the predicate. Figure 1 is a simplified lexical specification for these nouns. Note that the example is for the grouping type, but it also holds for the other two types.

```
word
PHON < group >
SYNSEM|LOC|CAT [ HEAD noun
             VAL|COMP < >
ARG-ST < NP >
```

**Figure 1.** The lexical specification of all the classifier noun types

The specification means that for the noun group in the syntactic-semantic domain (SYNSEM) and in the local environment (LOC), the syntactic characteristics in the category domain (CAT) are head (HEAD) and valency (VAL). The value of the feature HEAD is noun, while the empty value of the complement (COMP) within VAL indicates the optionality of the argument. At the same time, the argument is encoded in the argument structure (ARG-ST) as a NP, which is governed.

This approach is combined with the qualia structure approach presented in Pustejovsky (1998). The qualia structure, together with the argument structure, event structure, and inheritance structure, constitutes a mechanism of lexical decomposition, which underlies the notion of a generative lexicon. According to Pustejovsky (1998), each word can have the following qualia: Formal, Telic, Constitutive, Agentive. The Formal feature encodes the differentia specifica of the concept designated by the word. This refers to the properties that differentiate one concept from other concepts. The Telic feature presents the purpose (use, function). The Constitutive feature refers to the parts of an entity. The Agentive characteristic presents the origin. Pustejovsky also introduces four types of arguments. These are: ARG0 (the ontological label of the word), T-ARG (true argument, i.e. the one that has to be realized syntactically), D-ARG (default argument, i.e. the one that might not be realized syntactically), and S-ARG (argument in shadow, i.e. the one that is realized syntactically only under special conditions, since it is part of the lexical meaning of the word).
Figure 2 gives an example for the relational noun *brother* from (Pustejovsky 1998).

![Figure 2.

The relational noun *brother*](image)

The schema says that *brother* itself has the ontological value (ARG) *human*. It has a default argument (D-ARG) whose value is also *human*. The Qualia encode the *differentia specifica*, which is the value *Formal: brother_of*, and the more specific ontological restriction, the value *Constitutive: male*.

Osenova (2009: 104) shows that these qualia can be ordered in a hierarchy with respect to the relational properties of the various relational nouns. The proposed hierarchy is as follows: *Formal > Constitutive > Telic > Agentive*. The idea is that the ‘relational property’ of the nouns diminishes from left to right. In the present analysis, only *Formal* and *Constitutive* features are used, which means that classifier nouns have a high degree of relational properties.

Classifier N1N2 types are argument-having, and thus complement-taking nouns. I place them closer to the relational nouns and view them as supporting the work of quantifiers, since at the same time they presuppose another entity and also facilitate its quantification. The representations of *measure* and *grouping* types are as follows:

\[
\text{[QUALIA|FORMAL} \quad \text{measure_of} (x, y)]
\]

\[
\text{[QUALIA|FORMAL} \quad \text{group_of} (x, y)]
\]

As can be seen, both have values with two arguments for the feature *Formal*. These values are relations. In the first case it is *measure_of*, while in the second case it is *group_of*.

The representation of the *container* type is as follows:

\[
\text{[QUALIA} \quad \text{FORMAL} \quad \text{container_of} (x, y)]
\]

\[
\text{[QUALIA} \quad \text{CONSTITUTE} \quad \text{container} (x)]
\]

Note that only the *container* type representation has a value for the *Constitutive* qualia. In this way the fact that N1 refers to an object in the world is reflected,
in contrast to the other two types, in which N1 is an abstract noun (being measure, form).

Let us consider the integrated view of HPSG and qualia specifications for the three subtypes.

**Figure 3.** The integrated specification for *measure type* with example word ‘liter’

Figure 3 presents more detailed information than Figure 1, which concentrates on syntax. In the semantic part (CONT) there are two semantic features: INDEX and QUALIA. The syntactic and semantic features NUMBER and GENDER have structure-shared values. This word has a default argument – D-ARG (following Pustejovsky), since it is semantically required, but optional at the syntactic level. The argument is structure-shared with the second argument of the *measure_of* relation within the features QUALIA|FORMAL. The variable is named \( y \). The variable \( x \) (the ontological label of ‘liter’) is structure-shared with INDEX. Thus, more fine-grained semantic information is added into the lexical specification.

In Figure 4 the lexical specification is given for the *form-of-grouping* type. As can be seen, there is no difference from Figure 3 except for the presence of the relevant relation *group_of*. Thus, all other differences would be found in the semantic selectional requirements of the head over its complement. In this way, the head in Figure 3 will take only nominals that can be measured, while the head in Figure 4 will take nominals that can be grouped.
Figure 4. The integrated specification for the form-of-grouping type with example word ‘group’

Figure 5. The integrated specification for the container type with example word ‘cup/glass’
The container type specification in Figure 5 follows the same representation as above. However, the QUALIA feature has the additional feature CONST(itutive) with the ontological variable $x$ as its value. In this way, as noted above, the difference remains between the abstract index and the specific index of the nouns. Again, the idea is that selectional properties over and by this noun are made explicit and thus the proper semantic combinatorics are ensured.

The idea of viewing these nouns so close to relational nouns is neither new nor revolutionary. However, it is not typical, either. If we consider only the prototypical relational nouns (such as kinship or part–whole), then such a decision would sound strange. But in NomBank (Meyers 2007), for example, the nouns assembly and type are considered relational (among 16 types of relational nouns): an assembly of shareholders and a different type of filter. (Barker & Dowty 1993) also include abstract nouns in the group of relational nouns. Hence I support the broader understanding of what belongs to the relational nouns group.

Now let us discuss the head issue. Since the HPSG theory has been adopted for the present analysis, phrases of the type N1N2 are considered head–complement phrases, in which N1 is the syntactic head and N2 is the complement. In HPSG, in head–complement phrases the syntactic head is also a semantic head. Thus, the contribution of the semantics of N2 is incorporated into that of the head noun.

The split head analysis, in which one daughter of the phrase might be considered the syntactic head while another might be viewed as the semantic head, would be appropriate for the head–adjunct phrase, where the adjunct (modifier) is the semantic head. This means that in those phrases the syntactic and semantic heads are different, while in phrases of the type head–complement the syntactic head is also a semantic head. Thus, the contribution of the semantics of N2 is incorporated into that of the head noun.

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Semantically, the three N1N2 subtypes that have been considered are not completely identical. The measure and container types facilitate the quantifiers’ job, although the container type has a specific referential index in contrast to the measure type’s abstract referential index. The grouping type is closer to relational nouns, but also to appositions, since the ‘equality’ test turns out to be valid for this type only. Compare the typical apposition in (25) and the grouping phrase in (26), both used predicatively.

(25) *Teresa e majka.*
Teresa is mother
‘Teresa is a mother.’

(26) *Student-i-te sa grupa.*
student-pl.art are group
‘The students are a group.’

The apposition constructions might show some agreement markers of genre, for example, both nouns *majka Teresa* ‘Mother Teresa’ are feminine, but no other grammatical restrictions are observed, no PP-paraphrasing is possible.

4. Conclusions

This chapter aims to contribute, first, to the discussion of the properties that would be useful for identifying nominal phrases of the classifier type N1N2 in Bulgarian as head–argument constructions, and hence as head–complement rather than head–modifier (head–adjunct) phrases. The criteria discussed give enough evidence for considering N1 the head. The semantic treatment of N2 as argument as well as its syntactic analysis as complement rely mainly on semantic grounds, which are provided by Pustejovsky’s generative lexicon architecture and the syntactic–semantic interface apparatus behind the HPSG theory.

Second, the chapter provides evidence that the classifier ‘apposition-like’ NPs in Bulgarian show hidden government relations. These findings are important for distinguishing between constructions that exhibit the same syntax but are not identical from a semantic point of view.

The evidence presented here shows that: the three subtypes that have been distinguished share some common properties but also exhibit their own specific features – especially in the lexical semantics area; that all the types can be placed very close to the set of relational nouns and can be viewed as quantifier facilitators, with a different degree of similarity; and that the PP-paraphrases need to be the object of further research as to whether they should be viewed as adjuncts or complements to N1.
References


CHAPTER 7

Noun phrasal complements vs. adjuncts

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This paper draws a parallel between verbs selecting phrasal complements or adjuncts and nouns followed by Relative clauses (RCs), referring in particular to German. According to Meinunger (2000) a restrictive relative clause (RRC) attached to a noun and a sentential complement of a factive verb are both sister complement phrases (CPs) of lexical heads. This paper aims at providing evidence of the fact that a RRC and its head are linked by a head-complement-relationship while a non-restrictive relative clause (NRRC) can be seen as an adjunction to its head. NRRCs merge with maximal projection late in the derivation of the associated clause rather than being selected by a lexical head during the construction of the matrix clause. This paper presents evidence for this difference, such as the parallelism with Haegeman (2002–2008)’s dichotomy between central and peripheral clauses.

1. Introduction

The concept of valency is traditionally connected to verbs and refers to their internal property of selecting any argument controlled by the verb predicate itself. This also includes the possibility of not selecting any arguments. Verb valency is often related to the traditional notion of verb transitivity, although do not correspond entirely as valency may also involve the external argument whereas transitivity does not. In this paper, the traditional concept of verb valency (in specific cases referred to as transitivity) is taken a bit further and extended to the nominal domain. The aim of this work is to explore specific syntactic verbal and nominal (in particular phrasal) structures, which share similar properties, to provide evidence for a parallelism between verb and noun arguments, and finally to find a pattern of generalization for the concept of valency for verbs and nouns as far as phrasal arguments are concerned. The syntactic structures that support the idea of a parallelism between verb and noun valency are phrasal arguments for verbs and
relative clauses for nouns. The aim of this paper is to draw an analogy on the basis of the German language.

2. Noun and verb valency

One of the most explicit formal proposals of the parallelism between nouns and verbs selecting or not selecting phrasal arguments is Meinunger’s (2000: 206) work on topic effects over extraction and extraposition. In an endeavour to explain how different types of syntactic movements are all restricted by the blocking effect of topics, he draws “a parallel between this finding and the behavior of argument sentences of factive predicates, which turn out to be of the same category (= topics)” (Meinunger 2000: 179). Following these assumptions, and in order to provide more accurate evidence on similarity between leftward movements like wh-extraction, topic movement out of noun phrases and rightward movements like relative clause extraposition, he makes some claims about the position of relative clauses with respect to their nominal antecedent. Relative clauses in this respect are then compared with phrasal factive complements. Accordingly, relative clauses and nouns share the same index, just as a verb shares the same index with its argument. It is the lexical head that provides its phrasal argument with index, which can be both referential, or not. If the index is referential, the argument is said to carry a referential theta-role and counts as a true participant in the event; if it is not referential, the argument does not participate directly in the event and it is considered a “quasi-argument or a non-referential expression” (Meinunger 2000: 206). The starting point of my analysis was the assumption made at this point by Meinunger (2000), and specifically the following:

A noun that is identified by a restrictive relative clause assigns a referential index to it in the same way as, for example, a verb of saying marks its sentential complement with argument index, since in both cases we are dealing with sister CPs of lexical heads (Meinunger 2000: 206).

![Figure 1. Sister CPs of lexical heads](image)

Meinunger’s idea accounts for the fact that in the above mentioned construction, the CP is linked to the head by a very close head-argument relationship and that the base position of a restrictive relative clause or of a factive phrasal
complement is the sister of the lexical head it refers to (we will see in 3.2 that the lexical head $N^0$ is not exactly the lexical head we want the restrictive relative clause to be linked to). The aim of this work is to support this analogy with further evidence and to show that there is a hitherto undisputed difference with respect to whether the CP of the structure given in Figure 1 is a restrictive or non-restrictive relative clause. The difference in the syntactic derivation of the two sentences will not invalidate the original parallelism between nominal and verb valency but, on the contrary, we will propose that the hierarchical location for non-restrictive relative clauses is similar to that of a verb adjunction.

Since the distinction between these two types of relative clauses is crucial to my argument, the following section will focus on some relevant syntactic and semantic properties of the two types of relative clauses, which will be useful for later argumentation.

3. Restrictive and non-restrictive relative clauses

3.1 Semantics

Contrary to English and Italian, German relative clauses do not have any overt syntactic elements that are unambiguously and graphically able to distinguish between two types of clauses. The relative pronouns are always der, die, das (with declination), and in none of the cases can they be omitted. This is why in our German examples an “appositive” adverb such as übrigens has been added inside the non-restrictive clause: it forces the parenthetical reading without destroying the minimal pair.

The semantic difference between restrictive and non-restrictive relative clauses is immediately evident in the following minimal pair of clauses (1a–b).

(1) a. *Julia kennt wenige Frauen, die sehr gut kochen können ≠*  
Julia knows few women that very good cook can  

*Julia kennt wenige Frauen*  
Julia knows few women  

‘Julia knows few women that know how to cook very well. ≠ Julia knows few women.’

b. *Julia kennt wenige Frauen, die (übrigens) gut kochen können = Julia kennt wenige Frauen*  
Julia knows few women, who (by the way) good cook can  

kennen = *Julia kennt wenige Frauen*  
know can Julia knows few women  

‘Julia knows few women, who (by the way) know how to cook. = Julia knows few women.’
A restrictive relative clause narrows down the field of reference of the antecedent and provides relevant information to limit, restrict or unequivocally identify the noun it modifies. It is therefore a real post-nominal modifier of its antecedent because by removing the relative clause, the underlying meaning of the main sentence changes. If we look at the definitions of modifiers proposed in the literature we see that no doubts arise about the modifying nature of restrictive relative clauses. According to the theoretical definition, a modifier is restrictive if the set of objects denoted by a modified head is properly contained in the denotation of the head alone. From a procedural point of view, a restrictive modifier contributes to identifying the referent of a complex term expression of the form 'Determiner Head' (Alexiadou 2001; Umbach 2006). There is little consensus about the discourse-related status of restrictive modifiers. They may be an active part of the presupposition but they can also represent new information (Fabricius-Hansen 2009).

According to these definitions, sentence (1b) does not seem to have the same status. In fact the denotation of the head and the head itself are equal and the relative clause provides additional information about some already identified discourse referent. From a discourse-related point of view non-restrictive relative clauses consist of new information that can also often be stated as a separate assertion without changing the meaning.

Non-restrictive antecedents are not identified by non-restrictive relative clauses but by the context or by the noun itself. The relative clause provides supplemental information which does not limit the meaning domain of the noun it modifies.

By removing the relative clause, the truth-value of the main clause does not change and the relative clause turns out to be only a supplement to the basic meaning of the sentence.

Based on this assumption, it seems that non-restrictive relative clauses cannot be modifiers of the antecedent, and consequently, following Meinunger’s analysis they should not be able to profit from a co-indexing relationship with a lexical head.

3.2 The antecedent

Based on the assumptions made so far about the semantic difference between restrictive and non-restrictive relative clauses, we can deduce which nouns can exclusively introduce one type or the other. Non-restrictive relative clauses relativize already defined nouns (such as proper nouns, but rarely pronouns), which are well identified and limited (2a). Proper nouns in the sense of (2a), with respect to substantives in general, are in a way “intransitive” and cannot therefore have any
arguments. The syntactic characterisation of proper names as intransitive deter-
minders is motivated by the fact that they can form DPs by themselves, they can be
modified, and are incompatible with determiners (Egg 2007). Again, we see that a
tree like (1a) is not suitable for non-restrictive relative clauses because the lexical
head must be at least transitive to project an argument.

(2)  

\[ \text{Peter, der übrigens auf die Party kommt, ist ein Freund von meinem Bruder.} \]

‘Peter, who by the way comes to the party, is a friend of my brother.’

A non-restrictive relative clause is also sensitive to the kind of determiner that
precedes the antecedent noun, especially when it is a quantifier that makes the fol-
lowing noun unidentifiable. This is the case with a distributive quantifier like jeder,
which extends the meaning of a specific reference to a broader undefined unit of
references (3a) or a negative determiner like kein (3b).

(3)  

a.  

\[ \text{Jeder Professor, der übrigens eingeladen wurde, hat an der Konferenz teilgenommen.} \]

‘Every professor, who was invited, attended the conference.’

b.  

\[ \text{Keine Frau, die (übrigens) Julia kennt, kann gut kochen.} \]

‘No women, who (by the way) Julia knows, knows how to cook.’

We see from (3a) that the possibility of attaching a non-restrictive relative clause
depends not only on the nature of the noun it refers to but also on the kind of
determiner or quantifier merged with it. This could be because a relative clause
merges after the entire DP has been built and that the determiner of a non-restric-
tive head is therefore part of what we call the relative clause’s head; otherwise an
external determiner could not interfere in the grammaticality of a relative clause.
Semantically, only a complete DP can be understandable on its own, and this is
what a non-restrictive relative clause like (1b) requires to attach to and none the
less be an independent speech act, conveying new information.

If the point of attachment of a non-restrictive relative clause is a maximal pro-
jection like DP (or NP), the relative clause is definitely a non-argument because
there is no transitive lexical head, as in (1a), which can project it. Most of the
analysis that put restrictive and non-restrictive relative clauses in different syntactic positions choose a lower position for restrictive relative clauses and a position that is higher for non-restrictive ones (Ziv & Cole 1974; Emonds 1979; Fabb 1989) even if the configuration proposed at different stages of the theory differs consistently. Sections 3.2 – 3.4 will deal with the actual syntactic derivation of relative clauses.

We then need to consider that a restrictive relative clause can only have nominal antecedents, while a non-restrictive relative clause can also take entire CPs as antecedent (4). This means that restrictive relative clauses are limited in this manner because they are selected through a single lexical head which they are complement to. Non-restrictive relative clauses, on the other hand, are not ruled by sisterhood relationship and since they do not profit from co-indexing relationship, they may take other possible maximal projections.

(4) Er wohnt in Berlin, worüber er auch froh ist.

he lives in Berlin about this he also happy is

‘He lives in Berlin, which makes him very happy.’

What forces the two types of relative clauses to appear in different positions? Semantically, the fact that just one of the two is a modifier is sufficient to predict that there is a different structural relation; their relation with the antecedent and with determiner is the empirical evidence that supports the semantic intuition.

A difference in the way relative clauses relate with the determiner of their antecedents concerns the possibility of leaving a floating quantifier of the antecedent inside the relative clause (Bianchi 2000: 46). German quantifiers like alle (8a–b) or beide, which introduce a definite DP, can be stranded when the noun they refer to moves to the left.

(5) a. Alle Studenten haben die Prüfung bestanden

all students have the exam passed

b. [DP Die Studenten] haben [alle t_{DP}] die Prüfung bestanden.

the students have all the exam passed

‘All the students have passed the exam.’

If the DP becomes antecedent of a restrictive relative clause, the quantifier stranding is no longer possible (6b):

(6) a. Alle Studenten, die die Prüfung bestanden haben, wollen mit

all students that the exam passed have want with

dem Professor sprechen.

the professor speak

‘All the students that passed the exam want to speak with the professor.’
b. "Students, die alle die Prüfung bestanden haben, wollen mit dem Professor sprechen."

Non-restrictive relative clauses, instead, allow for a stranded quantifier because the head is a full DP (5b). Moreover, a stranded quantifier forces the non-restrictive reading of the relative clause, as the minimal pair (7a–b) shows.

(7) a. Die ausländischen Studenten, die alle im Wohnheim wohnen, müssen pünktlich zu Hause sein.

b. Die ausländischen Studenten, die im Wohnheim wohnen, müssen pünktlich zu Hause sein.

‘The foreign students, who live in the dorm, must be home on time.’

This is possible only if we consider that the determiner of the antecedent of a restrictive relative clause is the only part of the antecedent that does not directly belong to the clause. According to Cinque (2008: 6), the noun of an Italian restrictive relative clause does not show any definiteness and intersects its value with external material (which is D). Here we will attempt to see if this can be extended to German relative clauses as well. If the definite article precedes the noun in a declarative sentence (8a), the non-specific reading we have with an indefinite article (8b) is of course excluded. The indefinite article enables both the specific and non-specific reading. In (8b), the speaker may refer either to a specific actor he/she has in mind, or to any actor in general.

(8) a. Ich weiss, dass der bekannte Schauspieler auf die Party kommen wird.

b. Ich weiss, dass ein bekannter Schauspieler auf die Party kommen wird.

‘I know that the/a famous actor will come to the party.’
It is interesting to see that the definite article acquires a non-specific reading if a restrictive relative clause follows (8c). According to Cinque (2008: 7), the non-specific reading of the relative clause’s head (which has no article) is not lost. The Head Raising Analysis proposed by Kayne (1994) was a brilliantly innovative intuition, even though, as proposed in Resi (2011), it should not have been generalized to include all kinds of relative structures. Only in restrictive relative clauses is the noun the internal head, which raises to the specCP without determiner. It is a bare noun that merges with an external determiner once the movement has already taken place and the CP is completely merged (Kayne 1994: 86). This is the reason why a restrictive relative clause is not affected by the kind of determiner, which precedes the noun that has to be restricted by the relative clause. The relationship between *das* and *Buch* in an isolated nominal phrase (9a) and the relationship between *das* and *Buch* when a relative clause follows (9b) has a completely different syntactic derivation.

(9)  

a. \[N^0 + \text{restrictive relative clause}] =  
\[
\text{buch} + \text{das ich t gelesen habe}\]  
book that I read aux.1sg  

b. \[\text{DP} [N^0 + \text{restrictive relative clause}] = \]  
\[
\text{das} [\text{Buch, das ich gelesen habe}]\]  
the book that I read aux.1sg  

‘the book that I have read’  

On the other hand: nouns introducing a non-restrictive relative clause form a constituent with the preceding determiner analogously to a non-relativized DP/NP. They are grammatical both on their own and when they are relativized, and their meaning does not change in either case. This is not so with restrictive relative clauses where the head noun, modified by a restrictive relative clause, cannot be the only direct complement of the determiner as it is generated inside the CP

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1. He even suggests that a silent indefinite article raises between the determiner and the noun: *Der [ein] bekannte Schauspieler, der auf die Party kommen wird, wird bestimmt sehr elegant aussehen* (Cinque 2008: 7).
of the relative clause. I suggest that the entire CP (including the internal head) is complement of the lexical head D⁰ and that the determiner is the external element selecting the restrictive sentence (Figure 2).

![Figure 2. Syntactic derivation of RRCs and NRRCs](image)

It is worth considering if a restrictive relative clause also behaves like a complement of the D⁰ lexical head it refers to. And if this is really the case, what about non-restrictive relative clauses? What is the exact hierarchical location for non-restrictive relative clauses?

3.3 Complementation and adjunction

Following Williams’ (1980) idea, Meinunger (2000) suggests that co-indexing between two elements necessarily requires a c-command relationship, and that CP is sister of the lexical head D⁰ or V⁰. In fact, everything inside the CP is c-commanded by the external lexical head which is a V⁰ in the case of phrasal complements of verbs or, as we have proposed, a D⁰ in the case of relative clauses. If we assume this, we would expect, following our analysis, that everything inside a restrictive relative clause is in the domain of the matrix clause. On the other hand, a non-restrictive relative clause is next to the head DP but, as syntactic tests will show, neither is c-commanded by anything inside the matrix clause nor is c-commanded by the DP itself. There is evidence that non-restrictive relative clauses merge much later in the derivation of the sentence than restrictive relative clauses, and that they function as adjunction to the maximal projection of DP/NP.

The first piece of evidence is the fact that the external head is a maximal projection and adjunction can in fact only add to maximal projections. We see that the CP of a non-restrictive relative clause behaves like phrasal adjunctions with respect to some syntactic phenomena. We assumed from the beginning that a restrictive relative clause and its head are linked by a head-argument-relationship similar to that of verbs selecting their arguments. We will try now to provide evidence of both syntactic derivation and see if the complement/adjunction distinction suits sentences in the nominal domain as well as in the verbal domain.

The idea that adjuncts to verbs can be merged late in the derivation has been used extensively and is not particularly controversial. The reason is that adjuncts
are exempted from the theta-criterion, which is the condition that forces complements to be inserted in the derivation as early as the predicates they receive a theta-role from. So the key criterion to distinguish arguments from adjuncts in the verbal domain is that only arguments obey the theta-criterion and we suggest that this difference can be implemented in the restrictive/non-restrictive dichotomy.

First of all I will show that variable binding, licensing of polarity items, and the isle condition correspond for restrictive relative clauses to those of a complement rather than an adjunction. A VP-internal position like the indirect complement, *jedem* in (10a) must be able to c-command the internal head and consequently the pronoun *er* within the relative clause. In fact in (10a) the pronominal variable *er* is regularly bound with the quantifier of the matrix clause. If the subordinate clause were an adjunction, this would not be possible, as in (10b). The non-restrictive relative clause in (10c) behaves exactly like an adverbial clause in adjunct position. Examples are taken from Haider (1997: 130).

(10)  
a. *Hast du jedem_i die Details genannt, an denen er_i interessiert war?*  
*Have you sent the details to anyone who is interested?*

b. *Hast du jedem_i die Details genannt, nachdem er_i die Situation erklärt hat?*  
*Have you sent the details, after which he the situation explained has?*

c. *Hast du jedem_i die Details genannt, an denen er_i übrigens interessiert war?*  
*Have you sent the details, in which he by the way interested was?*

A second piece of evidence in favour of the presence of a c-command relation between the head and the material internal to the restrictive relative clause (which proves the fact that a restrictive relative clause is a complement of its external head D0), derives from the behavior of polarity items. These are licensed from the external head material, as is usually the case for heads and the material internal to its complement. If the antecedent of a restrictive relative clause has a negative determiner (11a, c), this should be able to license a polarity item inside its complement CP (the restrictive relative clause).

(11)  
a. *Kein, Schüler der in den Ferien jemals gelernt hat,...*  
*No pupil that on holiday never learned has*  
*‘No students that studied during the holiday…’*
b. *Der Schüler, der in den Ferien jemals gelernt hat,…
the pupil that on holiday never learned has

c. Keine Frau, die Julia sonderlich gut kennt, kann
no woman, that Julia particularly good knows can
gut kochen.
good cook
‘No woman that Julia knows particularly well how to cook.’

d. *Die Frau, die Julia sonderlich gut kennt, kann
the woman that Julia particularly good knows can
gut kochen.
good cook

Our expectations on the c-command relationship between the external D₀ and the material internal to CP were right. Sonderlich (11c) and jemals (11a) are allowed only if the head is a negative determiner because they belong to its c-command domain. The result of this analysis is not surprising if we consider our suggestion; a complement is always in the domain of the head from which it has been selected exactly like the CP-internal material is in the domain of the D₀ which selects it.

3.4 Central and peripheral clause

So far we have distinguished two types of relative clauses, according to their indexing, antecedent and of course relationship with the matrix clause; additionally, we have proposed a configuration where these two subordinate clauses, depending semantically on noun phrases, actually can be aligned syntactically with classical subordinate clauses depending on verbs. In particular, we have suggested that restrictive relative clauses are complements and non-restrictive relative clauses are adjuncts, the first being attached to a lexical head D₀ which projects its argument and the latter being merged to a maximal projection DP. This analogy with verb transitivity is supported by another syntactic consideration with respect to the moment of merge of the two structures. As complement, a restrictive relative clause should merge inside the matrix clause at the time when its head projects it, while a non-restrictive relative clause should merge later in the derivation when the entire matrix clause has already been projected.

According to Haegeman’s (2002, 2004a–b, 2006, 2010) analysis, subordinate clauses depending on verbs in general do not have the same syntactic derivations and do not behave homogeneously with respect to the matrix clause. Two main subtypes can be syntactically distinguished with respect to their degree of subordination to the associated clauses, the timing of merge and the consequent internal structure, which may or may not convey independence from the speech act of the
sentence. In particular, central clauses are merged with the associated clause early in the derivation of the sentence. Specifically, they are merged before IP is completed. Peripheral clauses are adjoined after the associated CP has been projected. Central clauses are part of the speech of the matrix clauses while peripheral clauses have their own illocutory force. In the latter case, we have two different speech acts. As a consequence of their external syntactic properties, these two types of subordinate clause also differ in their internal structure and, in particular, in the complexity of the CP domain.

Haegeman (2004b) first tests the dichotomy of central and peripheral clauses on English conditional clauses, and secondly on other types of subordination, including complement clauses. As far as complement clauses are concerned, Thurmair (1989: 74ff), Haegeman (2002: 159f) and Meinunger (2000: 206ff) make a distinction between complement clauses depending on verba dicendi and the other types of complement clauses. They suggest that properties of central clauses only occur in the first type of complement clauses, which Meinunger calls factive complement clauses and represents with the structure (1a) that was provided at the beginning of the present article. Adverbial subordinate clauses may also be central or peripheral according to various criteria. What is more, German subordinate clauses (complement and adverbial clauses) do not behave homogeneously and display the same differences for most of the relevant criteria proposed by Haegeman (Coniglio 2011).

In this chapter, the criteria for external and internal syntax proposed by Haegeman (2000, 2004b, 2010) for English and by Coniglio (2011) for German subordinate clauses will be briefly presented and applied, where possible, to German restrictive and non-restrictive relative clauses. From a semantic point of view, the analogy between peripheral and non-restrictive relative clauses is straightforward. Non-restrictive relative clauses and matrix clauses constitute two different illocutory speech acts. This type of relative clause provides background information for the main assertion but it is are not relevant for processing the proposition expressed in the matrix clause like it is for central clauses. Restrictive relative clauses, on the other hand, contribute to the proposition expressed in the associated clause and are necessary. The restrictive relative clause helps identify the nominal group of the matrix clause. The non-restrictive relative clause describes a context but is not essential. Does this semantic analogy have a syntactic counterpart?

3.4.1 Differences in external syntax
As far as external syntax is concerned, Haegeman (2000, 2004b, 2010) lists syntactic properties on the basis of English examples that account for the difference between central and peripheral clauses. As we said before, a central clause merges
earlier in the derivation of the matrix clause while peripheral clauses merge later. Consequently, the time of the central clauses depends on the time of the matrix clauses (12a), while the tense of the associated clauses does not affect the time line of the peripheral clause (12b) at all. Examples are taken from Haegeman (2002: 123–4).

(12) a. If your back-supporting muscles tire (future), you will be at increased risk of lower-back pain.
   b. If we are short of teachers […], why don’t we send our children to Germany to be educated? […]

This aspect is not directly evident in relative clauses because they depend on nominal elements of the associated clause, which do not have the time property. However, it seems that relative clauses do bear covert time properties, which is evident when we consider prenominal participial construction. Only a restrictive relative clause can be converted into a prenominal participial construction with an implicit verb (13a–b).

(13) a. Der Mann, der an Krebs gestorben war, war noch sehr jung.
   the man that from cancer died was was still very young
   ‘The man that died of cancer was very young’
   b. Der an Krebs gestorbene Mann war noch sehr jung.
      The from cancer died man was was still very young
   c. Paul, der an Krebs gestorben war, war noch sehr jung.
      Paul that from cancer died was, was still very young
   d. *Der an Krebs gestorbene Paul war noch sehr jung.
      thee from cancer died Paul was still very young

This is also evident in Italian, where only restrictive relative clauses can have an infinitive verb. (14) can have only a restrictive reading.

(14) le cose da mangiare (= le cose che devono/possono essere mangiate)
    things to eat (= things that must/can be eaten)

If central clauses are said to be within the scope of temporal operators in the associated clauses we can suppose that the reason that only restrictive relative clauses can be placed prenominally without overtly expressing the finiteness of the verb is because their time depends on the time of the matrix clause, and is therefore not necessary. Since non-restrictive relative clauses have their own time reference, this
must always be expressed as in peripheral clauses, where tense interpretation is independent (Haegeman 2004b, 2010).

Moreover, central clauses are said to be within the scope of operators in the matrix clause because they are c-commanded by material internal to the matrix clause. We have seen in 3.3 that the c-command relationship is suitable for restrictive relative clauses, but not for non-restrictive relative clauses, which, on the contrary, are completely outside the scope of the operators. Polarity items (Examples 11) and binding operators (Examples 10) only have an effect on c-commanded material.

Another syntactic phenomenon, which should account for this difference, is licensing of parasitic gaps. In English, parasitic gaps are licensed only with central clauses because the gaps need to be c-commanded by the matrix clause (Haegeman 2002, 2004a, 2010). Unlike English, the parasitic gap in German may never appear in a complement clause, even in a factive one, as we would expect if we extend Haegeman’s analysis on the German language. It has even been suggested that parasitic gaps may not exist in the German language and that instead, the construction that appears to resemble a parasitic gap construction is actually an instance of forward deletion (Fanselow 2001). Sabel (1996) also suggests that what look like parasitic gaps in German are actually ‘pseudo-parasitic gaps’ in the sense of Postal (1994). Whether or not parasitic gaps exist in German, it is interesting to note that against any expectation, they are not licensed in factive complement clauses.

If the analogy we have drawn so far is correct, we would expect that restrictive relative clauses in Standard German, being central clauses, do not license parasitic gaps either. If relative clauses behave like central clauses in German, they should in fact also respect the syntactic behavior of central clauses with respect to the possibility of licensing parasitic gaps. Examples (16a) and (16b) meet our expectations.

(15) a. *Wer hat Kevin t überredet [CP dass wir e anrufen sollen]?
   who has Kevin convinced that we call should
   ‘Who convinced Kevin, that we should call?’

   b. *Wem hast du t gesagt [CP dass wir am Sonntag e treffen würden]?
   who have you said that we on Sunday would meet
   ‘Who did you say we would meet on Sunday?’

(16) a. *Dies ist ein Mann den Leute [die e treffen] t,
   this is a man that people that meet
   echt mogen.
   truly like
   ‘This is a man, that people really like.’
b. *Welches Auto mogen Leute [die e_i fahren] t? 
Which auto like people that drive 
‘Which car do people like?’

While this analysis is based on Standard German, an examination of more than one dialect of German would be beyond the scope of this work; it is, however, worth noticing that the parasitic gap construction appears in certain similar contexts in Bavarian. The following data on Bavarian are taken from Felix (1985: 6), where (17a) is grammatical in the Bavarian variation but ungrammatical in Standard German (17b).

(17) a. Das ist eine Frau, die wenn etwas verspricht hält es auch.
that is a woman who when something promises keeps it also
‘She is a woman that keeps the promises she makes.’

b. *Das ist eine Frau die wenn etwas verspricht hält es auch.

For the sake of parallelism between central and restrictive relative clauses, we expect that a parasitic gap is licensed in the types of central clauses described for English by Haegeman (2002 and following works). For example, according to Bayer (1984), conditional central clauses in Bavarian license parasitic gaps (18).

him if I catch I
‘I slay him if I catch him.’

3.4.2 Differences in internal syntax

As far as internal syntax of central and peripheral clauses is concerned, Haegeman lists other criteria, which influence how far the two different speech acts (associated clause and subordinate clause) are independent and, as a result of that, how complete their internal CP-domain is. According to Haegeman, peripheral clauses, like root clauses, have a much more complete left periphery than central clauses and they are therefore much more independent with respect to the matrix clause than central clauses are. The latter lack projections in the CP domain, which encode illocutory force and therefore the possibility of anchoring the utterance to the speaker’s opinion. This is evident from the fact that peripheral clauses may contain elements of epistemic modality or elements, like modal particles, which relate the utterance to the speaker.

These speaker-oriented elements must depend on the presence or absence of a projection with these properties. ForceP encodes illocutory force, which is a property of root like clauses, independent speech time and epistemic modality. As far
as speech time is concerned, central clauses do not need this projection because their time depends on the time of the matrix clause. They are allowed to have a non-finite verb and occur in prenominal position as participial construction. To describe this difference, Haegeman adopts Rizzi’s (1997, 2001, 2004) well-known theories on the fine structure of the CP. Central clauses present a reduced CP compared to that of peripheral clauses.

Clauses displaying a reduced structure not only cannot license fronted arguments and focused elements (Haegeman 2002, 2004a, 2006, 2010), but they cannot contain modal particles either, since they cannot licence root phenomena at all. Modal particles can only occur in those contexts that, according to Haegeman (2002, 2004a, 2006, 2010), display a full left periphery and thus root properties. They are banned from non-root contexts since the latter do not constitute independent speech acts, and also from central clauses. We therefore expect that they cannot occur in restrictive relative clauses (19a-b). Examples are taken from Zimmermann (2004: 32).

   A colleague that PTCL in Siracuse lives, will come.

   b. *Die Firma sucht einen Angestellten, der ja immer
      The company looks for an employee that PTCL always
      pünktlich ist
      on time is.

   c. Peter, der ja nichts verpassen will, ist immer dabei.
      Peter, who PTCL nothing miss want is always present
      ‘Peter, who does not want to miss anything is always present.’

Non-restrictive relative clauses, which are far more independent than restrictive relative clauses, have no problem with modal particles and epistemic modality. The use of modal particles can even disambiguate the reading of German relative clauses and influence the grammaticality of the proposed sentence. (20b) can only have a non-restrictive reading because of the presence of a projection that hosts the modal particle ja.

(20) a. Autos, die laut sind, sollten mit einer
      autos that loud are should with a
geschlossenen Motorkapsel versehen werden.
closed motorcapsule provided be
‘Loud cars should be provided with a motorcapsule.’

Restrictive reading:
On the one hand we have root-clause-like embedded clauses with a full structure, which are also endowed with illocutory force; on the other hand there are embedded clauses displaying a reduced CP domain without illocutory force, which depend on the matrix clause as far as the anchoring of force to the speaker is concerned. They do not have a ForceP projection on their own (Figure 3).

<table>
<thead>
<tr>
<th>Central clauses</th>
<th>Sub</th>
<th>ModP</th>
<th>FinP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peripheral clauses</td>
<td>Sub</td>
<td>ForceP TopP</td>
<td>FocusP ModP</td>
</tr>
<tr>
<td>Main Clauses</td>
<td>ForceP TopP</td>
<td>FocusP ModP</td>
<td>FinP</td>
</tr>
</tbody>
</table>

**Figure 3. Internal syntax**

### 3.4.3 Implementation of Haegeman’s analysis

Due to the previous analysis we can see that there are syntactic phenomena that account for an implementation of Haegeman’s distinction to relative clauses both for external and internal syntax. The time dependency and the possibility of some elements of scoping over the relative clause account for a different time in merging with the associated clause. Availability of epistemic modality, licencing of modal particles or, in general, the lack of a position that guarantees anchoring to the speaker and which is usually projected in root clauses, together account for a different internal structure. Restrictive relative clauses have a shorter left periphery than non-restrictive relative clauses, which, like root clauses, are provided with a
full structure. It is by no means accidental that non-restrictive relative clauses can be transformed into two different clauses where the second one refers anaphorically to the first one through a pronoun (21b). This is not possible for restrictive relative clauses (21d).

   Peter is a friend of my brother, that by the way comes to the party.
   ‘Peter is a friend of my brother, who by the way comes to the party.’

   Peter is a friend of my brother he comes to the party.

   c. An der Konferenz hat jeder Professor teilgenommen, der eingeladen wurde.
   at the conference has every professor taken part, that invited was.
   ‘Every invited professor came to the conference.’

   d. *Jeder Professor hat an der Konferenz teilgenommen.
   Every professor has at the conference taken part.
   Er wurde eingeladen.
   He was invited.

What is interesting for our analysis is that relative clauses have two different syntactic structures. Relative clauses, like central clauses, are embedded in the matrix clause and, as we have seen, they are selected as complement of a lexical head (22a). The restrictive relative clause is integrated in the main clause. It is merged within the IP of the matrix clause and the nominal head belongs to the relative clause while the external determiner governs over the entire clause as if it were its complement (Resi 2011). Non-restrictive relative clauses are adjunctions to maximal projections NP/DP and they are merged later in the derivation when the IP has already derived, most probably as adjunctions (22b).

(22) a. Das [CP[NP Bild], [das [Peter t NP gesehen hat]]] the picture that Peter seen has ‘The picture that Peter has seen.’

   b. [DP Mein Vater], [CP<mein Vater>i den du ti (übrigens) schon kennengelernt hast] my father my father that you by the way already known has ‘My father, who you, by the way, already know.’
The non-restrictive relative clause is integrated in the matrix clause, but it is merged or adjoined to the CP of the associated clause in a structure which resembles coordination rather than subordination. The external head, which is the entire NP or DP, is not part of a syntactic chain.

I therefore propose that restrictive relative clauses, like central clauses, are merged at an earlier point of the derivation than non-restrictive or peripheral clauses. Restrictive relative clauses are merged within the matrix clause; non-restrictive relative clauses are adjoined once the entire antecedent is fully projected.

4. Conclusion

We have seen that some syntactic differences between restrictive and non-restrictive relative clauses can derive (a) from the fact that the former is a modifier and the latter is not, (b) that one is c-commanded by the matrix clause and the other is not, (c) that one is the complement of a functional head while the other has a full maximal projection as antecedent, and (d) that one is central while the other is peripheral. All these properties account for a close analogy with the way that subordinate clauses depend on verbs. In the case of central clauses, complement clauses and restrictive relative clauses, we can apply the original concept of valency as they are considered arguments selected by a lexical head. A lexical verbal head projects a phrasal argument as complement while a determiner projects a restrictive relative clause as complement. Proper names, which are already discursively identified, are not allowed to have complements. The clause is, instead, like an adjunct sentence, which provides a background to the main assertion and conveys additional information that is not directly relevant. Adjunction, like peripheral clauses and non-restrictive relative clauses, can also be asserted separately from the matrix clause like an independent clause, displaying discourse anaphora.

It is generally assumed that complements always precede adjuncts in German (23a–b) because adjunctions are merged higher than complements, resulting in a linear order where complements always precede adjuncts (Platzack 2000: 265).

(23) a. *der Freund von Peter mit blauen Augen
   the friend of Peter with blue eyes
   b. der Freund mit blauen Augen von Peter
   the friend with blue eyes of Peter

We would therefore expect a CP adjunct to follow a CP complement and an opposite linear order to be ungrammatical.
(24)  a. *Der Mann der uns gestern zum Mittagessen eingeladen hat,  
The man who we yesterday for lunch invited has,  
und übrigens 35 Jahre alt ist, kommt aus Australien.  
and by the way 35 years old is, comes from Australia.  
‘The man that invited us yesterday for lunch and, by the way, is 35 years old, comes from Australia.’

b. *Der Mann der übrigens 35 Jahre alt ist, und uns gestern zum Mittagessen eingeladen hat, kommt aus Australien.  
The man who by the way 35 years old is, and us yesterday for lunch invited has, comes from Australia.

As in (24a), a restrictive relative clause precedes a non-restrictive relative clause while the opposite order (24b) is ungrammatical, which confirms our hypothesis.

References


This article has two objectives. The first is to present an account of valency nouns in Latin. Lyons’ typology (1977) envisaging three orders of entities is useful for predicting the number and type of complements used with various nouns. Expansions of all the categories are distinguished: concrete entities, relational nouns, agent nouns, verbal nouns, and nouns expressing qualities. Furthermore, Latin shows interesting phenomena closely related to noun valency, namely nominalization of verbal notions in Early Latin and the construction of the dominant participle. The second objective is to examine argument marking at the noun phrase level. The genitive is the “adnominal” case par excellence; other cases (the dative, accusative, and ablative) as well as prepositional phrases are atypical noun complements in Latin, and furthermore they are often restricted to specific categories of nouns.

1. Aims and objectives

The aim of this contribution is to present an overview of several issues related to noun valency, including the typology of valency nouns and a brief characteristic of each category (Section 2), argument marking at the noun phrase level (Section 3), and semantic shifts between verbs and nouns (Section 4). I use examples from Latin, a language with case marking. The Latin case system shows an interesting functional differentiation. In general – disregarding special uses – the genitive marks adnominal complements; the dative is used for recipient/addressee, beneficiary, and experiencer; the accusative marks on the

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1. This article is based on a previous investigation of a series of individual words and their behavior (Spevak 2014) with the help of the electronic database the Library of Latin Texts (LLT). Digital corpora available for Latin lack specific annotations, thus making it possible to proceed to a detailed corpus analysis.
one hand direct objects, and on the other, extension in space and time; the ablative is used for various circumstantial expressions. Furthermore, Latin provides testimony of ancient “verbal” constructions of verbal nouns and their specific use for the resumption of a state of affairs, which is presented in Section 2.2.1. Participialization of state of affairs is a counterpart of verbal nouns, which represent nominalizations of states of affairs; the dominant participle construction as a competing means of verbal nouns is the topic of Section 2.2.2. Several observations concerning Ancient Greek and Roman grammatical theory are presented in an appendix (Epilogue).

2. **The typology of valency nouns**

Derivation usually serves as a criterion for the description of valency nouns (see Panevová, this volume). I myself approach valency nouns using the concept of orders of entities established by Lyons (1977:442‒447) and combine it with valency. Lyons distinguishes between spatial entities (first-order), temporal entities (second-order), and propositional content (third-order). Examples are given in Table 1. Note that relational nouns (*father*) and agent nouns (*judge*), which belong to the first-order entities, as well as various verbal nouns (*arrival*) and abstract nouns (*opinion*), are valency nouns requiring an expansion. Although the criterion of valency does not directly match the orders of entities, it is useful to consider both parameters because their combination shows that (i) first-order entities are zero-valent, except relational nouns and agent nouns; (ii) second-order entities are mono- and bivalent, except nouns with a merely temporal meaning (*day*, for example); and (iii) there are no zero-valent nouns among third-order entities.

| Table 1. Three orders of entities |
|-----------------------------|-----------------------------|
| **First order** | Spatio-temporal entities: persons, animals, and objects that can be situated in space |
| | zero-valent: *boy, soldier, horse, book, ship* |
| | collective nouns: *family* |
| | mass nouns: *water* |
| | mono- and bivalent relational nouns: *father, son* |
| | agent nouns: *judge, actor* |
| **Second order** | temporal entities: events, processes, and states of affairs that can be located in time |
| | zero-valent: *day, hour* |
| | mono- and bivalent: *arrival, enjoyment, pain, sedition, love* |
| **Third order** | non-spatial and non-temporal entities: propositional content |
| | mono- and bivalent: *opinion, judgment, memory, suspicion* |
entities. Additionally, as is shown below, some nouns can belong to more than one order of entity.

Furthermore, there are other, monovalent nouns that seem to form a special category: *great number, crowd, part, amphora, jar* when they are used as expressions of measure. They are called “containers” (see Panevová, this volume).

Distinguishing orders of entities makes it easier to understand the types of complement that nouns take: first-order entities mostly combine with expressions of possession, second- and third-order entities take expressions of agent or patient, and third-order entities admit complements with the form of a clause. In sum, valency nouns thus fall into the following categories:

1. first-order relational nouns (*father*);
2. first-order agent nouns (*judge*);
3. second-order nouns denoting various states of affairs (verbal nouns) and abstract qualities;
4. third-order nouns (verbal nouns);
5. “containers” including nominal quantifiers (*part, amphora, great number*), “classifiers” (*type, sort*), and similar expressions.

2.1 First-order nouns

Zero-valent nouns are sufficient on their own from the semantic point of view. For example, *book, horse, house, and letter* do not need any complement in order to be used in an utterance. Therefore, a genitive complement marking the entity represented, for example *signum Minervae* ‘a statue of Minerva’ in (1) or a genitive of the author in (2), are optional, because they are not implied by the semantic value of *signum* (Pinkster 1990/1995: § 6.6; cf. Panevová, this volume). Expressions of ownership (alienable possession), which represent “prototypical possession” in the sense that the possessed object (*possessum*) is a property to which the possessor has a legal right (Heine 1997: 34), also function as satellites (3). Expressions competing with the possessive genitive, i.e. possessive pronouns and adjectives derived from proper names (4), have the same status.²

(1) Minervae signum ex ebore pulcherrimum
   Minerva-GEN statue-NOM from ivory-ABL very nice-NOM
   ‘the very nice ivory statue of Minerva’ (Cic. Brut. 257)³

2. However, possessive genitives are not interchangeable with the personal name adjectives in Latin, unlike in Slavic languages (Corbett 1995). For the situation in Latin, see Baldi & Nuti (2010:356).

3. Abbreviations of Latin authors and their works follow the *Oxford Latin Dictionary*. 
Genitives expressing matter, origin, price, or content (5) are not required by the sense of their governing nouns. The same holds for an adjectival modifier such as *pulcherrimum* ‘very nice’ and a prepositional phrase expressing material (*ex ebore* ‘ivory’) in (1).

The optional character of these complements is manifested at the syntactic level. Complements not required by valency are more loosely related to their governing nouns than valency complements are (Bolkestein 1989:15). In Latin, this explains the difference between *caedes Clodi* ‘the murder of Clodius’ (objective genitive, argument), where *Clodi* cannot be used predicatively (6a), and the possesive genitive (satellite) in *domus Clodi* ‘Clodius’ house’, where *Clodi* can be used predicatively (6b) and, furthermore, competes with the dative *Clodio* (cf. Dressler 1970:27).

Among the first-order entities, relational nouns and agent nouns are monovalent or bivalent: the complements they take are required by their semantic value. In this
Section, I use the abbreviations N₁ for the first argument (the agent), and N₂ for the second argument (mainly, the patient).

Kinship nouns and nouns referring to body parts and (some) personal properties – they represent relational nouns⁴ expressing inalienable possession – encode the possessor as a genitive complement or a possessive pronoun. Two examples with kinship nouns are given in (7).

(7) a. uxor Cleomeni Syracusani
wife-nom Cleomenes-gen Syracusan-gen
‘the wife of Cleomenes the Syracusan’ (Cic. Ver. 5.82)
b. filia mea
daughter-nom my-poss.nom
‘my daughter’

The valency frame of relational nouns can be represented as:

uxor + POSSESSION gen. N₁/possessive pronoun.

The syntactic form of complementation is thus the same as for the expressions of ownership mentioned above. In other words, there is no formal difference between alienable and inalienable possession in Latin.⁵ However, a distinction between a closer and a more distant possession relationship is manifested at a different level, that of expression and non-expression of the possessor. In Latin, closer a possession relationship is normally related to the subject of the sentence (or possibly, to the speaker) and remains unexpressed. Explicit expression of the possessor either is required for avoiding ambiguity between two possessors or else entails an emphatic or contrastive interpretation.⁶

Agent nouns are monovalent or bivalent. Bivalent agent nouns take genitive complements with the semantic function of patient. For example, the genitive complement factorum et scriptorum meorum ‘of my doings and writings’ of the agent noun laudator ‘encomiast’ in (8a) corresponds to the clausal expression given in (8b), where this element functions as direct object. Instead of the genitive, a possessive pronoun may be used for encoding the patient, such as noster ‘our’ in amator noster ‘our admirer’. As pointed out by Panevová (this volume), the peculiarity of agent nouns is the fact that they incorporate the semantic role of agent,

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⁴ Certain linguists use the term “relational” in a larger sense for “bivalent nouns” in contrast with “absolute” (i.e. zero-valent) nouns, especially Seiler (1983: 11) and Lehmann (1985: 72).


⁶ For further details, see Lehmann (2005) and Spevak (2010: 251).
N₁. As a consequence of this, the agent does not appear in the valency frame that can be formulated as follows:

\[ \text{laudator} + \text{PATIENT gen. N₂/possessive pronoun.} \]

(8) a. Tu..., laudator et factorum et you-NOM encomiast-NOM and doings-GEN.PL and scriptorium meorum. writings-GEN.PL my-GEN.PL

‘You..., the encomiast of my doings and writings.’ (Cic. Att. 7.1.4)

b. Atticus facta et scripta Atticus-NOM doings-ACC.PL and writings-ACC.PL mea laudat. my-ACC.PL praises-3SG.PRS

‘Atticus praises my doings and writings.’

2.2 Second-order nouns

Second-order entities (temporal entities) include a number of monovalent and bivalent nouns: on the one hand, verbal nouns of various types; on the other, abstract nouns expressing qualities. Nouns derived from verbs of movement behave in a specific way and are treated separately here. Before presenting an overview of second-order nouns in Latin, I discuss two points that are important for understanding the construction of verbal nouns in Latin: their function in Early Latin, and the use of the dominant participle.

2.2.1 Verbal nouns in Early Latin

Verbal nouns are usually regarded as nominalizations of verbal notions that denote states of affairs.⁷ Latin provides interesting evidence of this phenomenon. In Early Latin, verbal nouns are typically used for nominalizing of states of affairs, “as a Wiederaufnahme (‘resumption’) of a preceding, formally finite, verbal form” (Rosén 1981: 17).⁸ This situation is shown in (9). The speaker, Periplectomenus, is describing what the slave Palaestrio is doing while thinking up a plan for further action. By using the noun aedificatio ‘action of building’ accompanied by the

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⁸ The resumptive function of verbal nouns (“Wiederaufnahme”) was first identified by Porzig and developed in the 1938 dissertation by Seitz. Porzig himself published a monograph on this topic in 1942.
anaphoric pronoun *illaec*, the speaker refers to the state of affairs that is taking place: *aedificat* ‘he is building’.

(9) Ecce autem aedificat: columnam
look-INTERJ but is building-3.PRS pillar-ACC
mento suffigit suo. Apage, non
chin-ABL fix beneath-3.PRS his-ABL away with NEG
placet profecto mi illaec aedificatio.
like-3.PRS assuredly me-DAT that-NOM building-NOM

‘But look, he is building something: he is supporting his chin with a pillar. Away with that, I sure don’t like this way of building of his.’ (Pl. Mil. 209)

This aspect of Latin verbal nouns explains the use of the accusative complement (*hanc*) referring to a young girl in (10a) instead of the adnominal genitive (*huius* ‘her’); furthermore, the ablative (*digito*) marks the instrument (satellite). The construction of the verbal noun *tactio* is the same as that of its cognate verb *tango* ‘to touch’ (10b).9

(10) a. Quid tibi hanc digito tactio est?
what you-DAT this-ACC finger-ABL touching-NOM is-3.PRS
‘What right have you to touch this girl here with your finger?’
(Pl. Poen. 1308)

b. Quid hanc digito tangis?
what this-ACC finger-ABL touch-2.PRS
‘Why do you touch her with your finger?’

In Early Latin, “verbal” construction of verbal nouns is found alongside genitive marking. This property is lost around 100 BC (Rosén 1983: 201) together with the decline of verbal nouns functioning as nominalizations. In Classical Latin, verbal nouns with such a nominalizing function can still be found, but their construction with the genitive is regular. Not only do verbal nouns henceforth take “nominal” marking, the genitive, but a number of them also disappear from the vocabulary (e.g. *statio* ‘action of standing’, *aditio* ‘approaching’, *expectatio* ‘awaiting’) or are found with a specialized meaning (Rosén 1983: 76), as in (11). Although there is a gradual increase in various abstract nouns from Classical Latin onward, they are not productive for nominalizing of state of affairs; other means, especially gerunds, gerundives, and participles, are used instead.

9. For the construction of action nouns with an accusative in other ancient languages, see Panagl (2006: 52).
Additionally, some verbal nouns with “verbal” marking are found in periphrastic constructions in Early Latin: with the verb *sum* ‘to be’, for example, *in expectatione esse* (+ accusative) ‘to be in expectation’ (Pl. *St.* 283) or in (10), which indicate that a state of affairs is in progress, and with support verbs (Rosén 1981:131‒5). For example, *mentionem facio* ‘to make mention’ is found not only with the regular genitive but also with an accusative (Pl. *Pers.* 283), the case used for object marking with the verb *memoro* ‘to mention’ (Rosén 1981:143).

### 2.2.2 Dominant participle

Verbal nouns compete with other means, such as supines, gerunds, gerundives, and infinitives (Rosén 1981:21). Another competitor is the so-called *ab urbe condita* construction (Heick 1936) or “dominant participle”. It consists of participialization of the predicate and expresses a factual process (Bolkestein 1981 and Pinkster 1990/1995: § 7.4.7). In a sense, it represents a counterpart of nominalization of the predicate, a phenomenon that yields verbal nouns.

A good example of a dominant participle is *occisus dictator Caesar* in (12). As subject complement, the inanimate noun *facinus* ‘crime’ is used because its referent is inanimate: the murder of Caesar, and not Caesar himself (Longrée 1995:175).

(12) *Occisus dictator Caesar pulcherrimum*

killed-pst.ptc dictator-nom Caesar-nom beautiful-adj.nom

*facinus videretur.*

crime-nom seemed-3.pass.subjv.impf

‘The murder of Caesar, the Dictator, seemed a most beautiful crime.’

(Tac. *An.* 1.8.6)

The construction *ante Carthaginem deletam* ‘before the destruction of Carthage’ (lit. ‘before Carthage destroyed’) (13a) might, theoretically, interchange with the verbal noun *deletio* ‘destruction’ (13b). However, *deletio* is not used in this way in Classical Latin (see *ThLL*, s.v.). It seems likely that this happens because the verbal noun *deletio* is not suitable for expressing the achievement of the process of *deleo* ‘to destroy’. The job is done by the past perfect participle, *deleta* ‘destroyed’. Additionally, there is another competitor for expressing a virtual process: the gerundive *delendus* ‘to be destroyed’ (13c).

(13) a. *ante Carthaginem deletam*

before Carthage-acc destroyed-pst.ptc.acc

‘before the destruction of Carthage’

(Sal. *Jug.* 41.2)
Another illuminating example is (14): a dominant participle construction (de proelio facto) is coordinated with the verbal noun oppugnatione ‘besieging’ accompanied by a genitive complement (Cirtae). The verbal noun oppugnatione means ‘action of besieging’ and not its accomplishment.

(14) Romae de proelio facto et oppugnatione
at Rome about battle-ABL done-PST.PTC-ABL and siege-ABL

Cirtae audiebatur.
Cirta-GEN heard-3.PASS.IMPFF
‘A report was spread at Rome of the battle which had been fought, and of the siege of Cirta.’ (Sal. Jug. 22.1)

In sum, the participialization of the predicate – the dominant participle construction – does not seem to be a true equivalent of nominalization. Verbal nouns such as oppugnatione ‘besieging’ do not seem to have a perfective meaning. This explains the almost complete absence of the use of nouns such as deletio ‘destruction’ or conditio ‘foundation’ in Classical Latin. They emerge in Late Latin.

2.2.3 Verbal nouns expressing actions and states

The category of bivalent verbal nouns is represented by nouns expressing actions or states that are derived from verbs or associated with a state of affairs. Among Latin derived nouns there are, for example: amor ‘love’ (derived from amo ‘to love’), fides ‘faith’ (fido ‘to trust’), timor ‘fear’ (timeo ‘to fear’), existimatio ‘opinion’ (existimo ‘to think’), clamor ‘cry’ (clamo ‘to cry’). Nouns related to bivalent verbs are expanded by arguments N₁ and N₂; nouns associated with monovalent verbs only encode N₁. However, arguments of verbal nouns can remain unexpressed, maybe more frequently than in the case of arguments of verbs (see Panevová, this volume).

Consider desperatio ‘despair’ (15a), which is derived from the bivalent transitive verb despero. From the semantic point of view, its complements represent the agent (N₁ omnium) and the patient (N₂ salutis) of the action and correspond to the clausal expression given in (15b) (cf. Pinkster 1990/1995: § 6.6). The agent is an animate entity encoded in the so-called subjective genitive (omnium); the patient refers to an inanimate entity and takes the form of an objective genitive (salutis). The obligatory character of the complements expanding verbal nouns such as desperatio is proved by the fact that they cannot be used predicatively (Bolkestein 1989: 13) in the clausal expression given in (15c).
(15) a. *in desperatīōne omnium salutis*
im despair-abl all-gen.pl safety-gen.sg
‘in the despair of safety experienced by everybody’  (Caes. Civ. 1.5.3)

b. *Omnes salutem desperant.*
all-nom.pl safety-acc despair-3.pl.prs
‘Everyone despairs of safety.’

c. ‘? Desperatio omnium / nostra est.’
despair-nom all-gen.pl our-nom.poss is-3.prs
‘Despair is of everyone/our.’

The valency frame of this verbal noun is:

\[
\text{desperatio} + \text{AGENT gen. } N_1; \text{PATIENT gen. } N_2.
\]

2.2.4 Nouns expressing the result of an action or a process

Among verbal nouns, it is necessary to distinguish nouns expressing the result of an action or a process as a separate category. The peculiarity of these nouns consists of the fact that they can express both an (ongoing) action and the result of an action. Compare the following examples with *oration* ‘speech,’ which is related to *oratio* ‘to speak (as orator)’:

(16) a. *Sed nihil te interpellabo: continentem* 
but neg you-acc interrupt-1.fut continuous-acc
orationem audire malo.
speech-acc hear-inf prefer-1.prs
‘But I shall not interrupt you: I prefer to hear a continuous speech.’
(Cic. Tusc. 1.16)

b. *oratione Ciceronis / eius*
speech-nom Cicero-gen his-gen
‘Cicero’s/his oration’
(cf. Cic. Phil. 1.2)

(17) a. *Orationes me duas postulas.*
speeches-acc.pl me-acc two-acc ask-2.prs
‘You ask me for two speeches.’
(Cic. Att. 2.7.1)

b. *orationes meae / Ciceronis*
speeches-nom.pl my-nom.pl Cicero-gen
‘my/Cicero’s speeches’
(cf. Cic. Att. 2.1.3)

*Oratio* in (16a) has a temporal meaning and denotes ‘a speech’ as ‘an action of speaking’ (second-order entity) but *oration* in (17a) is the result of the action, a materialized speech, in our case, in writing. The semantic difference between these two uses is that a genitive complement or a possessive pronoun *oratione Ciceronis/oratione eius*
‘Cicero’s speech/his speech’ – inferrable from the context and thus not expressed in (16a) – mark the agent \((N_1)\) of the action. They correspond to *Cicero orat* ‘Cicero speaks’ at the clause level and function as arguments. In the second instance, the complement *orationes Ciceronis/meae* ‘Cicero’s/my speeches’ marks the author and represents a satellite. Furthermore, *oratio* as a materialized, countable object joins the first-order nouns such as *liber* ‘book’, and can take the plural number and a prepositional phrase with *de* expressing content.

In Latin, this category is represented by such words as *actio* ‘action’ (*ago* ‘to act’), especially a legal process and its materialization, ‘a plea’; *consilium* ‘deliberation’ (*consulo* ‘to deliberate’) and its result, ‘a plan’; *iudicium* ‘legal proceedings’ (*iudico* ‘to judge’) and ‘a decision, a verdict’; *commeatus* ‘passage’ (*commeo* ‘to go and come’) and ‘supplies’; *rogatio* ‘request’ (*rogo* ‘to ask’) and ‘a bill’.

Additionally, there are nouns stemming from verbs that have completely lost any relationship with them and, consequently, any valency. These are, for example: *remedium* ‘medicine’ (*re, medior* ‘to heal’); a *signum* ‘mark; statue’ is the result of *seco* ‘to cut’; or *exercitus* ‘army’ is what has been trained (*exerceo*). They do not have temporal meaning and belong to first-order entities.

### 2.2.5 Verbal nouns of movement

Verbal nouns derived from verbs of movement, for example *profectio* ‘departure’ (*proficiscor* ‘to set out’), *reditus* ‘return’ (*redeo* ‘to come back’), or *aditus* ‘access’ (*adeo* ‘to approach’), constitute a special category. Their second argument \(N_2\) expresses direction (argument), origin (argument with nouns that semantically involve an idea of ‘return’), or path (satellite). It is never encoded in the adnominal genitive: the second argument always retains the construction of the basis verb and takes the form of a directional accusative or a prepositional phrase with *in* or *ad* + accusative for expressions of direction, such as *in Hispaniam* in (18). Expressions of the origin appear as prepositional phrases with *a, ex* + ablative, or as simple ablatives (19). The first argument \(N_1\) is encoded as a genitive (*eius* in 18) or a possessive pronoun; it can also remain unexpressed when the agent of the action is inferrable from the context, as is Antonius in (19).

(18)  
*Quis de C. Cethego atque eius in Hispaniam* who about G. Cethegus-ABL and his-GEN into Spain-ACC profectione... cogitat?  
‘Who even thinks of Gaius Cethegus and his expedition into Spain...?’  
(Cic. *Sulla* 70)

(19)  
*Qui vero Narbone reditus!* what indeed Narbonne-ABL return-NOM  
‘And what a return from Narbonne!’  
(Cic. *Phil.* 2.76)
Due to their specific encoding of the second argument $N_2$, which reflects the semantic function it fulfils, the construction of verbal nouns of movement receives no further discussion here.

2.2.6 Abstract nouns expressing qualities
Second-order entities include various expressions of human qualities and feelings, mostly derived from adjectives, such as *pietas* ‘dutiful conduct’ (derived from *pius* ‘dutiful’), *dignitas* ‘dignity’ (*dignus* ‘worthy’), *ineptiae* ‘absurdities’ (*ineptus* ‘silly’). Since these expressions apply to human beings, their expansions, encoded as genitives with a generic referent such as *hominum* in (20) or a specific referent, are arguments. Such abstract nouns allow absolute use.

(20) *praestans deorum natura hominum*

exalted-ADJ gods-GEN.PL nature-NOM men-GEN.PL

*pietate* coletetur
respect-ABL worship-3.PASS.SBJV.IMPF

‘the exalted nature of the gods would receive men’s pious worship’

(Cic. N. D. 1.45)

2.3 Third-order nouns

Third-order entities have the character of propositional content that can be true or false, can be asserted or denied, remembered or forgotten (Lyons 1977:442; Rijkhoff 2002:19). They are related to some mental or intellectual activity and include verbal nouns, such as *opinio* ‘opinion’ (*opinor* ‘to think’), *iudicium* ‘judgment’ (*iudico* ‘to judge’), nouns derived from adjectives: *memoria* ‘memory’ (memor ‘mindful’), and underived nouns, such as *laus* ‘praise’, *spes* ‘hope’.

Nouns belonging to third-order entities are for the most part bivalent and they are distinguished by the richness of their valency frames (cf. Panevová 2002). Apart from subjective and objective genitives, they admit complements such as gerundives, gerunds, or indirect questions, because their semantic value implies content. (21) illustrates complements found with the noun *spes* ‘hope’ ((21d) and (21e) are support verb constructions).

(21) *spes* ‘hope’ + gen. $N_1$ (*Catilinae* ‘Catilina’s’)/+ gen. $N_2$ (*pacis* ‘of peace’)

Syntactic variants of $N_2$:

a. Accusative + infinitive clause

*magna in spe sum {mihi nihil* (20)

great-ABL in hope-ABL I am me-DAT no

temporis prorogatum iri}
time-GEN postponed-PTC.PRF will be-FUT.INF

‘I am very hopeful that there will be no postponement’ (Cic. Att. 6.2.6)
b. Gerundive:

\[ \text{spes} \{\text{libertas recuperandae}\} \]

hope-NOM liberty-GEN recovering-GEN.GERDV

‘hope of recovering liberty’

(Cic. Agr. 1.17)

c. Prepositional phrase with \(\text{de}\):

\[ \text{mea} \{\text{de tua erga me benevolentia}\} \text{spes} \]

my-POS of your-ABL towards me-ACC goodwill-ABL hope-NOM

‘my hope of your kindly disposition toward me’

(Cic. Fam. 13.29.8)

d. Prepositional phrase with \(\text{in}\):

\[ \text{in avaritia nobilitatis et pecunia sua} \]

in avarice-ABL nobility-GEN and money-ABL their-POS.ABL

\[ \text{spem habere} \]

hope-ACC have-INF

‘having hopes in the avarice of the nobility and in his own wealth’

(Sal. Jug. 13.5)

e. Complement clause:

\[ \text{Quae te ratio in istam spem induxit \{ut eos tibi fideles putares\} fore, quos pecunia corrupisses}? \]

what you-ACC reason-NOM in this hope-ACC led-3.PRF that these-ACC.PL you-DAT faithful-ACC.PL consider-2.IMPF.SBJV

‘What reason led you to entertain the thought that men you had corrupted with money would be faithful to you?’

(Cic. Off. 2.53)

It is worth mentioning the case of a primarily first-order noun, \(\text{locus} \) ‘place’, which extends its meaning to ‘right, privilege’ and thus joins the third-order entities. As a consequence of this, it can take a gerundive clause as complement (22).

\[ \text{antiquiorem in senatu \{sententiae dicendae\} locum} \]

higher in order-ACC in senate-ABL opinion-GEN delivering-GEN.GERDV right-ACC

‘precedence in delivering my opinion in the senate’

(Cic. Ver. 5.36)

2.4 Nominal quantifiers and measure expressions (“containers”)

Nominal quantifiers and various measure expressions are monovalent. They apply to various entities to indicate their small or large quantity: \(\text{multitudo} \) ‘quantity’, \(\text{magnus numerus} \) ‘great amount’, \(\text{grex} \) ‘troop’, \(\text{caterva} \) ‘crowd’. The entity modified is usually encoded in the genitive (23).
(23) a. *aquae sextarius*
   water-GEN pint-NOM
   ‘a pint of water’ (Cic. Off. 2.56)

   b. *magnus numerus militum*
   great-ADJ number-NOM soldiers-GEN.PL
   ‘great number of soldiers’

Nouns indicating a portion of an entity, such as *pars* ‘a part’ or *dimidium* ‘a half’, combine with a genitive or a partitive expression in the form of a *de* or *ex* prepositional phrase (‘from’) (24). However, these expressions are not synonymous (Pinkster fc., chapter 11).

(24) *ex illa pecunia magna pars*
   from that money-ABL great-ADJ part-NOM
   ‘a considerable part of that sum of money’ (Cic. Div. Caec. 57)

3. **Argument marking at the noun phrase level**

3.1 The adnominal genitive

In Latin, the genitive is the means *par excellence* for marking nominal complements. Furthermore, this case is almost entirely restricted to them; verbs rarely combine with the genitive. It serves to encode various arguments that at the sentence level take different forms and stand in the nominative, accusative, dative, genitive, or ablative (Pinkster 1990/1995: § 6.6). We have seen above the verbal noun *desperatio* ‘despair’ derived from the bivalent verb *despero* ‘to despair’, which takes the second argument in the accusative, and the treatment of the agent and patient of the action involved at the noun phrase level (15). Arguments in the dative used with verbs such as *fido* ‘to trust’, *invideo* ‘to envy’, and *servio* ‘to serve’ are, at the noun phrase level, also encoded in the genitive. This is the regular construction of such nouns as *fides* ‘faith’, *invidia* ‘envy’, *servitus* ‘servitude’. The genitive is also found with *oblivio* ‘oblivion’ (from *obliviscor* + genitive) and *usus* ‘use’ (from *UTOR* + ablative), see examples in (25). Argument marking is thus simplified at the noun phrase level with respect to the clause level, where distinctions such as agent/patient/recipient are clearly distinguished through the use of different case endings.

(25) a. *fides huius defensionis*
   faith-NOM his-GEN defense-GEN
   ‘(my) good faith for his defense’ (Cic. Clu. 118)

   *huius defensioni fido*
   his-GEN defense-DAT trust-1.PRS
   ‘I trust his defense.’
b. in oblivionem totius negotii
in oblivion-ACC whole-GEN affair-GEN
‘into oblivion of the whole affair’ (Cic. Ver. 4.79)

totius negotii obliviscuntur
whole affair-GEN forgot-3.PL.PRS
‘They forgot the whole affair.’

c. usus navium
usage-NOM ships-GEN.PL
‘usage of ships’ (Caes. Gal. 3.14.7)

navibus utuntur
ships-DAT.PL use-3.PL.PRS
‘They use ships.’

Other means of encoding second arguments at the noun phrase level are infrequent in Latin. The dative is sometimes found with verbal nouns such as obtemperatio ‘obedience’ (26), responsio ‘answer’, or plausus ‘applause’, corresponding to the argument marking of their source verbs; it is rare with nouns other than verbal.10

(26) Iustitia est obtemperatio scriptis legibus
justice-NOM is-3.PRS obedience-NOM written laws-DAT.PL
institutisque populorum.
customs-DAT.PL=and people-GEN.PL

‘Justice is conformity to written laws and national customs.’ (Cic. Leg. 1.42)

The accusative is not used for encoding patients in Classical Latin (cf. Section 2.2.1 above). Nor does the ablative serve to encode the semantic patient of nouns. There are only a few attestations of optional complements in the ablative for expressing time, manner, or instrument (27).

(27) An exercitus nostri interitus ferro
army-GEN our-GEN destruction-NOM sword-ABL
fame frigore pestilentia?
famine-ABL cold-ABL pestilence-ABL

‘Or the destruction of our army by sword, famine, cold, and pestilence?’ (Cic. Pis. 40)

Prepositional phrases, which unlike the genitive make the semantic relationship between two entities explicit, can be used for argument marking in Latin only

10. See Kühner & Stegmann (1914: I.317) and Rosén (1981:96–100) for Early Latin. There are only a few instances of dative marking of the beneficiary, for example pabulum bubus ‘forage for cattle’ (Cato Agr. 27).
with nouns belonging to very specific semantic fields. These are nouns implying interactivity or sharing, for example *bellum cum Iugurtha* ‘the war with Jugurtha’ (Cic. *Man.* 60), expressions of content such as *nuntius de* ‘message concerning something’ (28), and nouns expressing affections, which are dealt with in the next Section.

(28) Nullus *unquam* de Sulla *nuntius* no-NOM ever about Sulla-ABL message-NOM to ad me (pervenit).

me arrived-3.PRF

‘No message about Sulla came ever to me.’ (Cic. *Sul.* 14)

3.2 Case marking vs. prepositional phrases

Genitive marking of nominal arguments of verbal nouns has as a consequence the fact that the semantic function of the constituent involved remains unspecified; that is, a genitive argument allows the interpretation as a subjective as well as an objective genitive (cf. *metus hostium* ‘fear of the enemies’, quoted and discussed below (41)). Such an ambiguity arises especially when the noun in the genitive refers to an animate, human entity; an inanimate entity in the genitive is almost always interpreted as patient. Furthermore, both genitives may co-occur in one noun phrase, as in (15a) quoted above.

Ambiguity due to effacement of the agent/patient distinction at the noun phrase level can be avoided by the formal differentiation of one of the complements, especially the objective genitive. Such a substitution is frequent in Czech. As Kolářová (this volume, Section 4.1) shows, the patient takes either a case other than the genitive or a prepositional phrase. The genitive marking (*herců*) of the patient would be ungrammatical in a noun phrase with both participants expressed (29).

(29) obdiv *diváků* *herců / k hercům* admiration-NOM audience-GEN.PL actors-GEN.PL to actors-DAT.PL

‘admiration of the audience toward the actors’

Something similar happens in Latin but only in the case of one specific semantic group of nouns: those expressing emotions, such as *love, hatred, fear, flattery, anger, praise* (Torrego 1991). The patient, which has an animate, human referent – or a

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11. Noun phrases with one subjective and one objective genitive are listed in Latin grammars, see Kühner & Stegmann (1914 I: 416); cf. also Devine & Stephens (2006: 316). According to Rosén (1981: 78), there are no sure instances in Early Latin.
referent associated with human beings like patria ‘fatherland’ – can take a prepositional phrase instead of the objective genitive, as in (30a). The corresponding expression at the clause level is indicated in (30b). The use of the prepositional phrase in patriam makes explicit whom the action is oriented toward and focuses on the person. The valency frame of amor can be established as follows:\(^{12}\)

\[
\text{amor} + \text{AGENT gen. N}_1; \text{PATIENT gen./in ‘for’/inter ‘among’/erga ‘toward’ N}_2.
\]

(30) a. posteaquam L. Flacci amor

after L. Flaccus-gen love-nom

in patriam perspectus esset

for fatherland-acc perceive-3.PASS.PQPF.SBJV

‘after Lucius Flaccus’ love for our country has been clearly seen’

(Cic. Flac. 2)

b. L. Flaccus patriam amat.

L. Flaccus-nom fatherland-acc loves-3.PRS

‘Lucius Flaccus loves his fatherland.’

Let us now look at the distribution of the complements used with the nouns amor ‘love’ and odium ‘hatred’ in Cicero’s speeches (Table 2) to see the extent of such substitution in Latin. Data were collected with the help of Merguet (1877–1884). In the majority of cases, the nouns under examination have only one argument; noun phrases with two explicit arguments are in the minority (row 5: subjective genitive + prepositional phrase).

Table 2. Arguments used with amor and odium in Cicero’s speeches

<table>
<thead>
<tr>
<th>Syntactic form of the complement</th>
<th>amor</th>
<th>odium</th>
</tr>
</thead>
<tbody>
<tr>
<td>objective genitive animate</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>objective genitive inanimate</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>subjective genitive</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>in-prepositional phrase</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>subj. gen. + prep. phrase</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>other prepositional phrase</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>possessive pronoun (subject)</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>57</td>
</tr>
</tbody>
</table>

\(^{12}\) Prepositions do not seem to be used in Early Latin (cf. ThLL, s.v. amor 1969.66). For interchange of genitives with prepositional phrases, see Torrego (1989) and Nutting (1932, esp. 268–279).
These data show, first, a competition between objective and subjective genitives (20 vs. 16) in the case of *odium*; the other participant is understood from the context. Although inanimate referents are likely to be interpreted as objective genitives, there are still 9 animate referents functioning as patients. Second, prepositional phrases do not really resolve the problem of ambiguity in the case of *odium* (9 instances of objective genitives competing with 8 prepositional phrases). In the case of *amor*, prepositional phrases are used more frequently than objective genitives with animate referents (11 vs. 3). However, there does not seem to be a tendency to replace the objective genitive with a prepositional phrase. The prepositional phrase is likely a more expressive means for encoding patients than the objective genitive. On the other hand, there is no instance of the combination of a subjective and an objective genitive in this sample; in the case of co-occurrence of both expressions, the agent is encoded as a genitive, the patient as a prepositional phrase.

Additionally, it is worth pointing out that the encoding of patients as prepositional phrases is peculiar to noun phrases in Latin. Expansions with *in* ‘for’ of *amor* (30a) function as arguments at the noun phrase level and, furthermore, they do not stem from the valency frame of the verb *amo* (*’amo in *’to love for’*). When such a prepositional complement is found with other verbs, especially verbs of saying, it functions as a satellite; for example, *carmen in eum scribo* ‘to write a poem in someone’s honor’ (cf. Cic. *de Orat.* 2.352). This point must be stressed. The preposition *erga* ‘toward’ is typical of noun phrases (31); it is not used with verbs at all.

(31) *quae voluntas erga Caesarem totius provinciae*

what feeling-nom toward Caesar-acc whole-gen province-gen

‘what was the feeling of the whole province toward Caesar’

(Caes. Civ. 2.17.1)

### 3.3 The syntactic form of noun arguments

We have seen that some nouns can develop a construction independent from the construction of the source verbs. This point invites a closer look at the other nouns denoting actions or states.

Among these, there are valency nouns that do not have a verbal origin. Words such as the following belong to this category: *spes* ‘hope’ (→ *spero* ‘to hope’),\(^\text{13}\) *cura*

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\(^{13}\) Arrows indicate the direction of the derivation: \(x \rightarrow y\) means \(y\) is derived from \(x\).
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‘care’ (→ *curo* ‘to care’), *iniuria* ‘injustice’ (←—negative *in* + *ius* ‘justice’, ‘law’; no cognate verb), *gratia* ‘favor’ (←* gratus* ‘grateful’; no cognate verb), or *ius iurandum* ‘oath’ (a binding formula to be sworn; *ius* ‘justice, law’ → *iuro* ‘to swear’). Their valency frames are various and sometimes very rich. It is tempting, obviously, to interpret the genitive used with *ius iurandum* + gen. N₁ in (32a) as a subjective genitive. At the clause level, (32b) can be envisaged.

(32) a. [cum habeas]
   *integerrimi municipi ius iurandum*
   most respectable-gen town-gen oath-acc
   ‘[when you have] the oath of a town of the highest integrity’ (Cic. Arch. 8)

b. *integerrimum municipium iuravit / ius iurandum dedit*
   oath-acc gave-3.prf
   ‘a town of the highest integrity swore an oath/took an oath’

Such an analysis seems fully justified: we can assume that these nouns, without having a verbal origin, have joined the category of verbal nouns due to analogy: *spes* enters the group of nouns and verbs of thinking and willing; *ius iurandum*, that of nouns and verbs of speaking. If we admit that semantic analogies, which link underived nouns with semantically cognate groups – cf. Pinkster (fc. chap. 12) on transcategorial parallelism –, are at work, we can more easily understand the richness of valency frames of such nouns, for example of *spes*, illustrated above in (21), as well as the fact that a word like *ius iurandum* ‘oath’ can take a complement clause with *ut* + subjunctive as expansion (33) – as does the verb *dico* ‘to say’ for expressing volitive content.

(33) *ius iurandum poscere, {ut}, quod esse ex usu*
   oath-acc ask-inf that what be-inf to advantage-abl
   Galliae interlexissent, {communi}
   Gaul-gen judge-3.pl.pqf.sbjv common-abl
   *consilio administrarent*
   consent-abl execute-3.pl.impf.sbjv
   ‘to ask for their oath that they would by common consent execute whatever they judge to be for the advantage of Gaul’ (Caes. Gal. 5.6.6)

The lack of a cognate verb is sometimes compensated for by “support verb” constructions (Ger. *Funktionsverbgefüge*) involving a semantically weak verb such as *facio* ‘to make’, *habeo* ‘to have’, *ago* ‘to do’, *gero* ‘to bear’, or *adfero* ‘to cause’ and a
The noun is the bearer of the meaning, and furthermore it often imposes the syntactic form of the expansion – for example, the prepositional phrase with *cum* (34); there is no *gero cum* ‘to bear with’. The contribution of the verb is to actualize the process (*gesserint*). A counterexample is *gratias ago* + dat. ‘to thank sb’ where the dative can be reduced neither to the noun *gratias* nor to the verb *ago* (Happ 1976:454).

(34) *Rhodii qui... bellum illud superius*

*Rhodians-NOM who-NOM war-ACC that previous-ACC*

*cum Mithridate rege gesserint*

*with Mithridates-ABL king-ABL waged-3.PL.PRF.SBJV*

‘The Rhodians who... carried on the first war against Mithridates’

(Cic. Ver. 2.159)

The formation of such periphrastic constructions results, on the one hand, from the fact that combination of a verbal noun and a verb with a weak semantic value makes it possible to explicitly express aspectual nuances (Flobert 1996) – *impetum facio* ‘to make an attack’ (Cic. Mil. 29) marks execution of *impetus* ‘attack’ – and to express causativity: *spem adfero* ‘to arouse hope’ (Cic. Amic. 68) (Hoffmann 1996:204). On the other hand, support verb constructions sometimes compensate for the absence of a verb as such; for example, *cognitionem habeo cum* ‘to have affinity with’ or *auctoritatem habeo apud* ‘to have influence with’ have no matching semantic expressions in the verbal domain.

Several nouns involved in support verb constructions have the same form of expansion as their cognate verbs, such as *pactio cum* ‘a compact with’ – *paciscor cum* ‘to arrange an agreement with’; *coniectura de* ‘a conjecture about’ – *conicio de* ‘to conjecture about’; verbal nouns of movement retain the construction of their cognate verbs as well. However, there are valency nouns that do not have morphologically cognate verbs and thus cannot “copy” a verbal construction. The question to be asked is where the syntactic form of their complements comes from. For example, *verbum* ‘word, discourse’ in the construction *verba facio cum* (lit. ‘to make words with’) ‘to talk with’ (Roesch 2001) seems to be explained as analogous to *loquor cum* ‘to talk with’; *bellum* ‘war’ in *bellum gero cum* ‘to wage war with’ models *pugno cum* ‘to fight with.’ The construction of *auctoritas* ‘authority, influence’ (derived from the agent noun *auctor* ‘who authorizes’) in *auctoritatem habeo apud* ‘to have influence with’ could be explained as analogous to *valeo apud* ‘to have influence on somebody’.

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Chapter 8. Noun valency in Latin

Here again, analogy with expressions belonging to the same semantic field is obvious. Several examples are presented in Table 3.

Table 3. Analogous constructions

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<td><strong>spes</strong> 'hope'</td>
<td><strong>AcI/+</strong> <strong>ut</strong>-clause 'oath that'</td>
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<td>- factual content:</td>
<td><strong>respondeo</strong> 'to answer'</td>
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<td><strong>spes + AcI/+</strong> <strong>ut</strong>-clause 'hope that'</td>
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<td>accusative + infinitive</td>
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<tr>
<td>- volitive content:</td>
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<tr>
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<td><strong>scribo in</strong> 'to write'</td>
<td><strong>amor</strong> 'love'</td>
<td><strong>amor in/erga</strong> 'love for'</td>
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<td>“A is oriented toward B”</td>
<td>in ‘for’, erga ‘toward’</td>
<td><strong>odium</strong> 'hatred'</td>
<td><strong>odium in/erga</strong> 'hatred for'</td>
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<tr>
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<td><strong>verbum</strong> 'word'</td>
<td><strong>bellum cum</strong> 'war with'</td>
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<td>“A has to do with B”</td>
<td><strong>loquor cum</strong> 'to talk with'</td>
<td></td>
<td><strong>verba cum</strong> 'words with'</td>
</tr>
<tr>
<td><strong>cum</strong> 'with'</td>
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3.4 Verbal nouns derived from trivalent verbs

Languages seem to behave in different ways as to the number of complements expressed and their syntactic form. Whereas Latin is rather reluctant to express both the patient and the recipient/addressee with nouns derived from trivalent verbs, such expressions are common in Czech (35a) and German (Happ 1976: 177). The patient appears in the genitive, but the recipient (kamarádovi) retains the dative, which is in the valency frame of its cognate verb, vrátit ‘to return’, in (35b) (see Kolářová 2006 and this volume).

(35) a. vrácení knihy kamarádovi
    ‘returning-NOM book-GEN friend-DAT’
    ‘returning of the book to his friend’

    b. vrátil knihu kamarádovi
    ‘he returned the book to his friend’

In Latin, trivalent verbs such as dono aliquid alicui ‘to give something to somebody’, which usually present a great formal variety of arguments (Pinkster 1985: 170-2), constitute a category that is less easily subject to nominalization. Subjective (36a) and objective (36b) genitives accompanying nouns such as donatio ‘donation’, responsum ‘answer’, absolutio ‘acquittal’, privatio ‘privation’ or rogatio ‘request, bill’ are found.
There are also several examples of verbal nouns with the third argument alone, such as *liberatio culpae* ‘a release from all guilt’ (Cic. Lig. 1). However, it is exceptional to find instances of verbal nouns derived from a trivalent verb with more than one complement expressed together in one noun phrase as in (37) with *rogationes* ‘bills’.

(37)  

\[ \text{ut etiam Catonis rogationibus de Milone et } \]
\[ \text{that also Cato-gen bills-dat.pl about Milo and } \]
\[ \text{Lentulo resistamus } \]
\[ \text{Lentulus-ABL stand against-1.pl.prs.sbjv } \]
\[ '\text{to make a stand against Cato’s bills concerning Milo and Lentulus’} \]
\[ \text{(Cic. Q. fr. 2.3.4)} \]

It is not usual to encode the recipient/addressee of an action in the genitive at the noun phrase level (Pinkster 1990/1995: § 6.6). Additionally, it rarely appears in the dative or in a prepositional phrase, such as the *ad*-phrase with *translatio* in (38a), which is derived from *transfero* ‘to transfer’. The expression of origin (*a*-phrase) functions as a satellite. This noun phrase corresponds to the clausal expression given in (38b).

(38)  

\[ \text{a. Quare L. Sullae C. Caesaris pecuniarum } \]
\[ \text{therefore L. Sulla-gen G. Caesar-gen money-gen.pl } \]
\[ \text{translatio a iustis dominis ad alienos } \]
\[ \text{transference-nom from lawful-ABL owners-ABL to others-ACC } \]
\[ \text{non debet liberalis videri. } \]
\[ \text{NEG ought-3.prs liberal-nom seen-pass.inf } \]
\[ '\text{Consequently, the transference of money by Lucius Sulla and Gaius Caesar from its lawful owners to others ought not to be seen as liberal.’} \]
\[ \text{(Cic. Off. 1.43)} \]

\[ \text{b. L. Sulla C. Caesar pecunias a } \]
\[ \text{L. Sulla-nom G. Caesar-nom money-acc.pl from } \]
\[ \text{iustis dominis ad alienos transtulerunt. } \]
\[ \text{lawful owners-ABL to others-acc.pl transfer-3.pl.pf } \]
\[ '\text{Lucius Sulla and Gaius Caesar transferred money from its lawful owners to others.’} \]
The number and syntactic form of allowed complements can be due to the degree of grammaticalization of verbal nouns and/or to the phenomenon of reduced valency frame that concerns especially verbal nouns derived from trivalent nouns. Latin, at least, avoids the expression of both a second and a third argument together in one noun phrase.

4. Semantic shifts between verbs and nouns

The valency reduction that accompanies nominalization often goes together with changes in the meaning of the noun, the verb, or both. There are pairs that more or less maintain their semantic properties as well as their construction in parallel, such as paciscor ‘to arrange an agreement’ and pactio ‘agreement’; but other expressions underwent change. First, there is a tendency to restrict the meaning of the noun: the meaning of the verbal noun coniectura ‘conjecture’ is only one among multiple meanings of conicio ‘to throw together, to put, to dispatch’. Factio ‘manner of doing’ and facio ‘to do’ became completely separated: factio denotes a social group, especially a ‘faction’. Second, the couple oratio – oro illustrates a change in meaning on the part of the verb. Oratio ‘action of speaking, speech’ is derived from oro in the meaning ‘to speak (as orator)’; however, the verb specialized its meaning into ‘to pray’, a semantic feature that does not affect the verbal noun. Although detailed research in this domain is necessary to determine the extent to which such semantic shifts took place, it does not seem likely that a Latin verb always has available a matching verbal noun such as ‘to do’/’doing’, that is, a productive derivation of nouns denoting states of affairs.

5. Conclusions

Complements required by the valency of a noun are more closely related to their head noun than optional complements are. Valency nouns whose the semantic value requires complementation fall into several categories: relational nouns, verbal nouns or nouns associated with states of affairs, and quantifying and classifying expressions (“containers”). These categories are distinguished by specific semantic properties as well as by the way they encode noun complements. The concept of three orders of entities, although further investigation is necessary to discuss in detail sub-categories of the second and third orders, makes it easier to predict the complementation of a valency noun.

In Latin, a language with case marking, expressions of alienable and inalienable possession are not formally distinguished: both are encoded as genitives.
“Containers” also require a genitive complement. The category of verbal nouns and nouns related to states of affairs is the most complex one. A further subdivision is necessary to describe the behavior of (i) nouns related to verbs of movement; (ii) nouns expressing actions and states; (iii) nouns expressing results of an action or a process; and (iv) nouns expressing propositional content.

The question of noun valency is closely related to argument marking at the noun phrase level. In Latin, arguments of nouns (agent and patient) are typically encoded as genitives; prepositional phrases are confined to specific semantic categories (expressions of interactivity, content, and affection). Latin is reluctant to express a recipient/addressee at the noun phrase level; this can be due to a weak degree of grammaticalization or to the productivity of verbal nouns in Latin. A point that requires more detailed investigation is the extension of valency frames resulting from analogy with semantically related words and, conversely, reduction of valency frames in the case of nouns expressing the result of an action. Additionally, support verb constructions as well as periphrases with the verb ‘to be’ call for special attention, because such constructions often compensate for the lack of a verb and their complementation is imposed by the nominal component.

Epilogue: “Noun valency” in ancient grammatical theory

When dealing with valency, it is worth adding several points that were considered in ancient Greek and Roman grammatical theory, which was based on the concept of parts of speech. First, the ancients envisaged “completeness” of utterances. How much and in what detail this concept was used is difficult to evaluate, especially because we have only fragmentary knowledge of Stoic doctrine and because of the loss of the third part of Varro’s treatise On the Latin language. Nevertheless, the Greek grammarian Apollonius Dyscolus (2nd century AD), followed by the grammarian Priscian (6th century AD), worked with the concept of “complete” and “incomplete” utterances, which are now described in terms of valency, omissibility, and obligatory and optional complements. Second, ancient

15. Cf. a fragment from book 14 quoted by Gel. 16.8.
16. See, for example, Priscian’s (GL Keil III 116.9) demonstration of omissibility of the complements in the sentence: *idem homo lapsus heu hodie concidit* ‘unfortunately, the same man having fallen down has died today’. In this sentence, which contains a representative of each part of speech (in the sense of ancient theory), the only non-omissible constituents are *homo concidit* ‘(the) man has died’: *Si tollas nomen aut verbum, imperfecta fit oratio; sin autem cetera subtrahas omnia, non necesse est orationem deficere*. ‘If you omit the noun or the verb, the sentence will be incomplete; if you omit the rest, the sentence will not necessarily lack anything.’
grammarians separated several categories of nouns (see Luhtala 2005: 75), such as relational nouns (\textit{ad aliquid}), which cover the construction \textit{pater meus/Ciceronis ‘my/Cicero’s father’} (39), and verbal nouns (\textit{verbalia}), which may take inflected complements in the genitive (40).

(39) ‘There are nouns used with respect to something (\textit{ad aliquid}). They cannot be understood without relation with another noun, for example, \textit{pater ‘father’}. We cannot say \textit{pater} unless he has a child.’

\small{(Serv. GL Keil IV 430.19)\textsuperscript{17}}

(40) ‘Transitive verbal nouns in \textit{-or and -rix}, which are formed from verbs denoting an action, combine with the genitive, for example, \textit{amo illum ‘I love him’, amator ‘lover’} and \textit{amatrix illius ‘his (female) lover’}. They are derived from verbs, for example, \textit{doctor ‘teacher’, lector ‘reader’}.

\small{(Prisc. gramm. GL Keil III 215.23)\textsuperscript{18}}

Third, an interesting testimony is that of the so-called objective and subjective genitives, reported by Aulus Gellius (2nd century AD) in a Section devoted to words that are used with two opposite meanings, both active and passive. He discusses in detail the verbal noun \textit{metus ‘fear’} (41a).

(41) a. \textit{Metus also and iniuria, and some other words of that kind, may be used in this double sense; for \textit{metus hostium ‘fear of the enemies’} is a correct expression both when the enemies fear and when they are feared (\textit{cum timent hostes et cum timentur}). Thus Sallust in the first book of his \textit{History} speaks of \textit{‘the fear of Pompey’} (\textit{metus Pompei}), not implying that Pompey was afraid, which is the more common meaning, but that he was feared.’

\small{(Gel. 9.12.13‒15)}

b. \textit{metus hostium}

\textit{fear-NOM enemies-GEN.PL}

‘fear of the enemies’

Priscian’s argument is based on Apollonius Dyscolus (\textit{Synt. 1.14}). The concept of “complete utterance” (\textit{λεκτὸν αὐτοτελές [lekton autoteles], oratio perfecta}) and “incomplete utterance” (\textit{λεκτὸν ἔλλιπές [lekton ellipes], oratio imperfecta})” goes back to Stoic doctrine (see Ildefonse 1997: 146).

17. \textit{Sunt quae ad aliquid dicuntur, quae penitus non possunt sine alterius coniunctione intelligi, ut pater: non enim patrem possimus dicere, nisi filium habeat.}

18. \textit{Verbalia quoque in -or desinentia vel -rix transitiva, quae a verbis actum aliquem signifi- cantibus sunt, genetivo iunguntur, ut amo illum, amator et amatrix illius. Sunt facta de verbo, ut doctor, lector.}
Gellius establishes a parallel between the noun phrase *metus hostium* ‘fear of the enemy’ and the clauses *hostes timent* ‘the enemies fear’ and *hostes timentur* ‘the enemies are feared’, which is its passive counterpart (41b). From the syntactic point of view, the genitive *hostium* can correspond to the subject (agent) or the object (patient) of the related verb, *timeo* ‘to fear’. In modern literature from Benveniste ([1962] 1966:146–7) onward (cf. also Kuryłowicz ([1949] 1960:145), noun phrases involving a verbal noun and a genitive complement are regarded as “transpositions” of direct objects and subjects, e.g. *tolerantia frigoris* ‘endurance of cold’ going back to *tolerare frigus* ‘to endure cold’, and *adventus consulis* ‘arrival of (the) consul’ to *consul advenit* ‘(the) consul arrives’. Benveniste labels such genitives “genitives of transposition” (*génitifs de transposition*), but they are commonly called objective and subjective genitives.\(^\text{19}\) They are arguments of the noun as are direct objects and subjects.

References


\(^\text{19}\) For the term objective/subjective genitive, see Rosén (1978). Laurentius Valla was the first to establish the relationship between the genitive and the subject or object of a corresponding clause; it is termed *genitivus obiecti/subiecti* by Vossius. *Genitivus obiectivus/subiectivus* is current in grammars in 19th century.
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*ThLL*: *Thesaurus Linguae Latinae*. 1900–. Leipzig: Teubner


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Despite a recent spate of publications, the valency of nouns is a topic that still remains in the shadow of the valency of verbs. This volume aims to contribute to the discussion of noun valency not only from a theoretical point of view, as is often the case, but also from an empirical one by presenting a series of studies focusing on particular questions and based on data-driven research. It explores properties of valency nouns in a variety of languages, including Bulgarian, Czech, German, Latin, Romanian, and Spanish. The specificity of this book consists in the diversity of the methodological approaches used. It includes empirical studies and it explores different theoretical frameworks: Head-driven Phrase Structure Grammar (HPSG), the Minimalist Program within Generative Grammar, Functional Generative Description (FGD), and Construction Grammar. Special attention is paid to deverbal nouns, but nouns expressing quantity and “compound-like” constructions involving relationship and interactivity are also dealt with.