Aspect and argument structure of deverbal nominalizations: a split *v*P analysis [1]

Petra Sleeman & Ana Maria Brito

1.   Introduction

Deverbal nominalizations maintain, in general, the aspectual properties of the verbs from which they derive, but it has been noticed that some of them can have more than one reading. Grimshaw (1990) distinguishes two types of nominalizations: complex event nouns, in which the properties of the verbal base are still transparent, and result nouns, in which the properties of the verbal base are no longer transparent. Sleeman & Brito (2010) argue that more than two readings can be distinguished for nominalizations. They distinguish five readings, which are connected not only to different aspectual readings, but also to the expression of argument structure.

Building on Larson's (1988) analysis of double object constructions and within a generative-constructivist approach to the relation Lexicon–Grammar applied to the left periphery of the *v*P phase, Ramchand (2008) proposes that *v*P can be split up in various functional projections: Initiator Phrase, Process Phrase and Result Phrase. Although initially built for verbs, we propose in this paper, following Bašić (this volume), that the split *v*P hypothesis can be applied to other categories. In the specific case of nominalizations, we argue that the split *v*P hypothesis can account for the five readings distinguished by Sleeman & Brito (2010).

The paper is organized as follows. In sections 2 and 3, we present some problems for a dichotomy of nominalizations, as defended in Grimshaw's (1990) lexicalist view and in Alexiadou's (2001) syntactic analysis of nominalizations. In section 4, we present Ramchand's split analysis of the *v*P and the verb classes that in Ramchand's analysis lexicalize one or more parts of the split *v*P. In section 5, we argue that Sleeman & Brito's (2010) distinction of five types of nominalization can be motivated on the basis of the split *v*P hypothesis, the verbal root of each type of nominalization lexicalizing a different part of the split *v*P. Finally, in section 6, we summarize the results.

2.   The relation between event structure and argument structure in nominalizations: Grimshaw's (1990) view

Deverbal nominalizations maintain, in general, the aspectual properties of the verbs from which they derive, but in the literature it has been noticed that deverbal nominalizations, specially those that are derived from accomplishment verbs, are ambiguous between, at least, an event and a result reading, as illustrated by the following English examples:

(1)   The translation of the book took ten years. (event)
(2)   John's translation has been published recently. (result)

The event reading emerges when the nominalization occupies the subject position in sentences containing verbs like *to last, to take x time* or in sentences containing verbs

---

that are combined with *during x time*. The result reading is the dominant reading when the nominalization occupies the subject position of psychological verbs or other verbs that denote a property of the result of a previous event.

In a lexicalist view of morphology, Grimshaw (1990) claims that the distinction between an event reading and a result reading of nominalizations is associated with a difference in argument structure: whereas process nouns (i.e. complex event nouns), like *examination*, must take internal arguments, result nouns, like *exam*, are like object/entity nouns and do not select arguments (Grimshaw 1990: 49):

(3)   the examination of the papers
(4)   *the exam of the papers

To reinforce her theory of nominalizations, Grimshaw (1990: 54) proposes some diagnostics to distinguish event and result nominals:

(i)   Only result nouns can pluralize:

(5)   two exams
(6)   *two examinations of the papers

(ii)   Only result nouns can be preceded by an indefinite determiner; the use of indefinites with event nouns is generally not accepted (Grimshaw 1990: 54):

(7)   an exam
(8)   ?? *an examination of the papers

(iii)   Only result nouns can be preceded by a demonstrative determiner:

(9)   that exam
(10)   *that examination of the papers

(iv)   Result nouns combine with possessors, while event nouns combine with agents (Grimshaw 1990: 51):

(11)   the instructor's (possessor) exam
(12)   a.   the instructor's (agent) examination of the papers
        b.   the examination of the papers by the instructor (agent)

However, the situation seems to be less clear-cut. Work on nominalizations in several languages has shown that there are some phenomena that have to be considered if we want to build a general theory of nominalizations (see also Sleeman & Brito 2010):

(i)   Process nominals do not obligatorily take internal arguments:

(13)   The discussion lasted two hours.

(ii)   In Grimshaw's analysis, result nouns and object nouns are analyzed in the same way: they have no argument structure and no specific theta roles to discharge;

they optionally take semantic participants with which they have rather loose relations, among which the possessor relation[2]. However, example (14), which has a clear result reading and where the noun *discussió* 'discussion' is followed by a PP that can also follow the corresponding event noun, shows that result nouns can optionally select an internal argument, contrary to object nouns.

(14)   La discussió de les dades es va publicar a la revista. (Picallo 1991)
'The discussion of the data was published in the journal.'

(iii)   Event nouns can pluralize:

(15)   Die Besteigungen der beiden Gipfel dauerten 6 Wochen. (Bierwisch 1989 for German, *apud* Alexiadou 2001: 72)
'The climbings of the two tops took 6 weeks.'

(16)   Tijdens de martelingen van de politieke gevangenen door de zwarte brigades moesten alle journalisten het gebouw uit. (Van Hout 1991: 75 for Dutch)
'During the tortures of the political prisoners by the black brigades all the reporters had to leave the building.'

(17)   Os jornalistas estavam a assistir a várias destruições de pontes, quando chegaram as tropas. (Brito & Oliveira 1997: 61 for Portuguese)
'The journalists were watching several destructions of bridges, when the troops arrived.'

(iv)   The arguments concerning the form of the determination of the event nominal are not so strong as Grimshaw proposes. Under certain contextual conditions, the nominal may be preceded by an indefinite determiner:

(18)   Os jornalistas estavam a assistir a uma destruição da ponte, quando a bomba caiu. (Brito & Oliveira 1997: 60)
'The journalists were watching a/one destruction of the bridge, when the bomb fell.'

(v)   The combination with a demonstrative with a contrastive effect is also possible:

(19)   Os jornalistas estavam a assistir a essa destruição da ponte, quando a bomba caiu. (Brito & Oliveira 1997: 61)
'The journalists were watching that destruction of the bridge, when the bomb fell.'

(vi)   Certain nominalizations can combine with a genitive representing the agent, even when they have an event interpretation, as observed by Van Hout (1991: 76) for Dutch. According to Van Hout, this can only happen with countable nouns, see the following example in Dutch:

---

[2] Among the loose semantic relations that can be established between the head noun and complements or specifiers, the following can be distinguished: part/whole (*the leg of the table*), content (*a book of linguistics*), origin (*le vin de Bordeaux 'the Bordeaux wine'*), material (*une table en bois 'a wooden table'*).

(20)   Ik heb alle uitvoeringen van Youri Egorov van het Schumann-programma bijgewoond. (event)
       'I have attended all of Youri Egorov's performances of the Schumann program.' (event)

And the same happens in Portuguese with nouns like *tradução* (translation):

(21)   A tradução da *Odisseia* de Frederico Lourenço demorou dois anos. (event)
       'Frederico Lourenço's translation of the Odyssey lasted two years.'
(22)   A tradução da *Odisseia* de Frederico Lourenço é magnífica. (result)
       'Frederico Lourenço's translation of the Odyssey is very good.'

In fact, this type of nominal (*translation, performance, representation, discussion,* among others), is different from *destruction, construction,* and so on. In the result reading, these nominals easily select an internal argument, as the following example shows (see also 14):

(23)   A tradução de Homero que está em cima da mesa é excelente.
       'The translation of Homer that is on the table is excellent.'

This is possible because these nouns express representations, and therefore they are to a certain extent close to picture nouns. Having the denotation of a representation, they may refer to the real author/origin (the proper noun *Homero* in (23)) and they may also refer to the author of the representation: in *Frederico Lourenço's translation of the Odyssey* the real author is Homer and the genitive, *Frederico Lourenço's*, is just the author of the translation. Consequently, novels, theatre pieces and so on, allow for several representations, several translations. This is why these nouns, which easily select arguments, are countable and allow plurality (Van Hout 1991); in these circumstances they are in between process and object nouns and this is why they allow two genitives.[3]

Furthermore, Brito & Oliveira (1997) show, for Portuguese, that a result noun (as evidenced by the type of predicate) may even be combined with a *by*-phrase expressing the agent (24) and can be used in control constructions (25), differently from concrete nouns (26), contrary to what Grimshaw claims:

(24)   A análise do texto pelo aluno enriqueceu o conhecimento dos colegas. (result)
       'The analysis of the text by the students enlarged the knowledge of the colleagues.'
(25)   A construção do campo de jogos para entreter as crianças trouxe benefícios para a comunidade. (result)
       'The building of the playground to entertain the children benefited the community.'
(26)   *A construção do campo de jogos para entreter as crianças é de boa qualidade. (concrete object)
       'The building of the playground to entertain the children is of good quality'

---

[3] We thank Ignacio Bosque for this clarification.

These examples confirm that result nouns may select arguments and may even be combined with a *by*-phrase, whereas concrete/entity nouns do not have argument structure. This is justified by the proposal that the result noun still has an event structure, as we will see later (see also Brito & Oliveira 1997 for Portuguese).
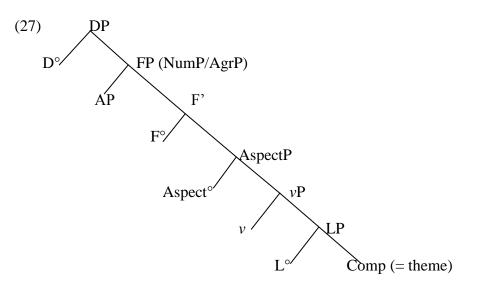
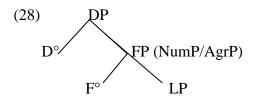Summarizing this discussion, we have shown, contra Grimshaw (1990), that:

- process nominals do not obligatorily take internal arguments;
- process nominals can pluralize and can be combined with an indefinite determiner or a (contrastive) demonstrative;
- some process nominals can be combined with an *of*-phrase instead of a *by*-phrase, (those which are easily countable and that represent something that has a real origin or author normally not expressed);
- result nouns can take internal arguments;
- in certain circumstances result nouns can even be combined with a *by*-phrase or can be used with control verbs.

In this section, we have discussed Grimshaw's lexicalist view on the syntactic properties of nominalizations, which states that syntactic properties of nouns, in particular the presence and form of argument structure, is related to the presence or absence of an Event argument in the lexical representation of the nominalization. In the next section, we will discuss the relation between aspect and the syntactic properties of nominalizations in Alexiadou's (2001) syntactic approach to morphology.

3.   A syntactic analysis of nominalizations
Just like Grimshaw (1990), Alexiadou (2001) assumes that, whereas process/complex event nouns are eventive, result nouns are not. But whereas according to Grimshaw result nouns cannot take arguments because they are not eventive, Alexiadou (2001), following Picallo (1991), shows, on the contrary, that result nouns may take arguments. Alexiadou derives both process nouns and result nouns in Syntax, but claims that the difference between the two types is that whereas the lexical roots of process nouns are dominated by the functional projections *v*P and AspP (and DP), as in (27), the lexical roots of result nouns are not dominated by these functional projections, but are only dominated by DP, as in (28):

(27)   DP
D°   FP (NumP/AgrP)
AP   F'
F°
AspectP
Aspect°   *v*P
v   LP
L°   Comp (= theme)

(28)
```
          DP
         /  \
      D°     FP (NumP/AgrP)
            /  \
          F°    LP
```
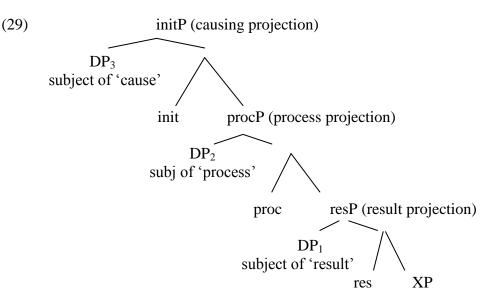
Alexiadou argues that, due to the absence of these verbal functional projections, arguments of result nouns do not have to be projected obligatorily, but can be projected optionally. To account for the combination of result nouns with complements, Alexiadou, following Levin (1999), assumes that lexical roots are constants, meaning that the presence of arguments is guaranteed independently of the eventive character of the outcome of word-formation. When constants enter into a relation with event related projections, the presence of arguments becomes obligatory, i.e. they become structure participants in Levin's terms. Since with result nouns there are no vP and AspP, the projection of the arguments of the constants is not required, i.e. optional. Although Alexiadou can in this way account for the fact that result nouns can combine with complements, there is still a relation between the presence of event and the projection of arguments. This is the case because Alexiadou relates the fact that complements are obligatory with process nominals to the presence of an eventive functional head, and the fact that complements are optional with result nouns to the absence of an eventive functional head.

Although Alexiadou's syntactic analysis of process nouns in (27) can account for pluralization (15–17) or the use of the indefinite or demonstrative determiner (18–19), DP and NumP being independent of the type of verbal root, there is still a strong relation between the presence of event and the projection of arguments. Consequently, it is difficult in Alexiadou's framework to explain the fact that process nominals do not necessarily take arguments (see 13). Furthermore, it is not easy to account for the fact that nominals with an event interpretation can combine with a genitive instead of a *by*-phrase (see 20–23), or for the fact that result nouns can combine with a *by*-phrase or can be used in control constructions (see 24–25). Finally, Alexiadou's structure of result nouns (28) does not discriminate them from object nouns. However, they differ in the fact that result nouns optionally take arguments whereas object nouns do not. If the licensing of an argument is a property of a constant, i.e. an intrinsic property of a root, not only its being obligatory or optional should be accounted for, but also its absence.

We therefore need an analysis that more strongly dissociates a process reading from the presence of argument structure and we need a more fine-grained analysis of the aspectual dimension of deverbal nominalizations. This analysis will be developed in the following sections.

4. Split vP

One of the debates of the last twenty years has been the division of labor between Syntax and the Lexicon. Following Hale & Keyser (1993) and more recent related literature, Ramchand (2008) assumes that words are built in Syntax, and that the Lexicon is eliminated as a module with its own special primitives and modes of combination, although she does not deny that there is encyclopedic information that has to be listed/memorized. Since there is no Lexicon and therefore no argument structure as a lexical property, selectional restrictions have to be encoded in another way. Ramchand adopts the view that the syntactic projection of arguments of verbs is based on event structure, associated with the verbal meaning, which she decomposes in three

subevental components: a causing subevent (initP), a process denoting subevent (procP) and a subevent corresponding to a result state (resP). These subevents depend on the particular lexical item that projects and can be associated to the contribution of constants in the lexical decompositional system of Levin & Rappaport Hovav (1995).[4] Each of these subevents is represented as its own projection, ordered in a hierarchical embedding relation (Ramchand 2008: 39):

(29)   initP (causing projection)

     DP$_3$
   subject of 'cause'

           init   procP (process projection)

           DP$_2$
        subj of 'process'

                  proc   resP (result projection)

                      DP$_1$
                 subject of 'result'
                             res   XP

      ProcP is the heart of the dynamic predicate. It is present in every dynamic verb. The initP exists when the verb expresses a causational or initiational state that leads to the process. The resP only exists when there is a result state explicitly expressed by the lexical predicate. Using the copy theory of movement, copying heads, Ramchand (2008: 63–89) accounts for the presence of several subevents at the same time present in one verb:

(30)   Karena drove the car. (Initiation-Process verb)
(31)   Alex ran. (Initiation-Process verb)

(32)   The ice melted. (Process verb)[5]

(33)   Michael arrived. (Process-Result verb)
(34)   The glass broke. (Process-Result verb)

      Intransitives can become transitive by merging an initP on top of procP:

(35)   The sun melted the ice.
(36)   Michael broke the glass.

---

[4] A similar approach is proposed by Borer (1998) and subsequent work; these kinds of approaches dispense with Thematic Theory: thematic roles are derived from the information contained in the structure (see 29).

[5] For Ramchand it is crucial that verbs like *to melt* have an intransitive source that is "converted" into a transitive verb by merging an initP (see below). For a different view see Reinhart (2000), for whom these verbs are transitive and are "converted" into intransitive ones by a Reduction Rule in the Lexicon. We will not develop this issue here.

Sometimes a verb is ambiguous in interpretation. Semelfactives like *jump* are a case in point. They can be [init, proc, res], in which case they are punctual and describe a transition ('Michael jumped into the water'), or they can be [init, proc], in which case they are atelic and describe a durative, indefinitely iterated process ('Michael was jumping all the time in the water'):[6]

Each of the subevents licenses an argument in its specifier position. InitP licenses the external argument ('subject of cause' = Initiator), procP licenses the entity undergoing change or process ('subject' of process = Undergoer), and resP licenses the entity that comes to hold the result state ('subject' of result = Resultee):

(37)   *John* persuaded Mary. (Initiator)
(38)   *The key* opened the lock. (Initiator)
(39)   Karena drove *the car*. (Undergoer)
(40)   *The ball* rolled. (Undergoer)
(41)   Alex handed *her homework* in. (Resultee)
(42)   Michel threw *the dog* out. (Resultee)

The Resultees in the previous examples are at the same time Undergoers. Using the copy theory of movement, copying arguments, Ramchand's system analyses composite roles of arguments:

(43)   *Karena* ran to the tree. (Undergoer-Initiator)
(44)   Katherine broke *the stick*. (Resultee-Undergoer)

In the next section, we argue that this approach – a constructivist-generative approach to the relation Lexicon-Grammar – can be applied to other categories than verbs, in particular nominals; as for nominalizations, the combination of various subevents can account for the various readings of nominalizations and can solve some of the problems that are raised by the classical analysis of deverbal nominalizations not only in a lexicalist (Grimshaw) but also in a syntactic (Alexiadou) analysis.

5.   Nominalizations

Arguing against the Lexicalist approach (e.g. Chomsky 1970, Grimshaw 1990), various linguists (e.g. Picallo 1991, Borer 1998, Harley & Noyer 1998, Van Hout & Roeper 1998, Alexiadou 2001), have proposed that nominalizations, being deverbal

---

[6] As is well known, the nature of the objects, temporal/aspectual adverbs and auxiliaries sometimes reinforces (i) and sometimes modifies (ii) the aspectual value of the sentences, showing the compositional semantic nature of grammatical aspect:
(i) Katherine broke the stick (in some minutes) ("accomplishment")
(ii) Alex ran a marathon (in 4 hours) ("accomplishment")
According to Ramchand, this does not mean that for verbs as in (ii) *resP* exists, i.e. "*resP* only exists if the event structure itself is specified as expressing a result state." (2008: 40). And she writes: "conversely, the expression of result can be further modified by auxiliaries, PPs etc. outside the first phase syntax to create predications that are atelic, but this will not warrant the removal of *resP* in the syntactic representation". That is, for this author, *resP* only exists in the syntactic structure "when there is a result state explicitly expressed by the lexical predicate" (2008: 40).

categories, are built in Syntax. In this section, following Sleeman & Brito (2010), we adopt this approach. We argue that nominalizations can have different readings and different possibilities of realization of their argument structure and we relate the various readings to various differences within Ramchand's split *v*P.

5.1   Five types of nominalizations
Sleeman & Brito (2010) reject Grimshaw's and Alexiadou's strict dichotomy between process nouns and result nouns, which is based on the presence vs. absence of event structure or event related functional projections. Whereas Grimshaw and Alexiadou seem to relate result nouns to object nouns such as *book*, Sleeman & Brito (2010), based on Brito & Oliveira (1997), distinguish the two types of nouns from one another. Since result nouns are the result of an event, result nouns are eventive in their view, whereas object nouns are not. Furthermore, they distinguish two types of eventive nominalizations: one type in which an agent is implied and another type which is not agentive. In this way, Sleeman & Brito distinguish five types of nominalizations: two types of eventive nouns (one licensing a *by*-phrase and the other one not), each with a corresponding result phrase and the object noun as the fifth type.

Building on Alexiadou (2001), Sleeman & Brito (2010) associate the differences between the five types with a difference in the presence and nature of functional categories within DP. In their view, the nominalization process is a gradual process in which the nominalizations become more and more "nouny", which is reflected in the presence/absence and the changing properties of *v*P and AspP:

(I) – In the most 'verbal' reading of the nominalization, the lexical root takes two arguments (an obligatory *of*-phrase, the complement, and an optional *by*-phrase): *v*P is agentive and eventive, AspP is present and contains an (im)perfectivity feature.

In Alexiadou's approach, the fact that the complement is obligatory results from the presence of *v*P. In Sleeman & Brito's (2010) approach, it results from the agentivity of *v*. As in the case of verbal passives, the agent does not necessarily have to be expressed:

(45)   They were watching the destruction of the bridge (by the soldiers).

Brito & Oliveira (1997) show, for Portuguese, that, in certain circumstances, a result noun may be combined with a *by*-phrase expressing the agent (46) and can be used in control constructions (47), which shows that this reading is still eventive and agentive. In Sleeman & Brito's (2010) analysis, this is the corresponding resultative reading of (45). They assume that in the corresponding resultative reading, Asp contains the feature Result instead of an (im)perfectivity feature, other things being equal to (I):

(46)   A análise do texto pelo aluno enriqueceu o conhecimento dos colegas. (result)
        'The analysis of the text by the students enlarged the knowledge of the colleagues.'
(47)   A construção do campo de jogos para entreter as crianças trouxe benefícios para a comunidade. (result)
        'The building of the playground to entertain the children benefited the community.'

(II) – The second stage is as in (I), but the agent-like participant, when present, is expressed by a genitive: *v* has lost the feature Agentive. The lexical root optionally takes an internal argument.

Following Alexiadou, Sleeman & Brito (2010) assume that, as a constant, the lexical root can take an internal argument. Alexiadou relates its optionality to the absence of *v*P. In Sleeman & Brito's (2010) approach, *v*P is still present in this reading, which explains the possibility of the expression of an agent-like participant by a genitive. They relate the optionality of the internal complement, as in (48), an example from Dutch taken from Van Hout (1991), to the absence of the agentivity feature on *v*:

(48) Ik heb alle uitvoeringen (van Joeri Egorov) (van het Schumann programma) bijgewoond.
      'I have attended all of Youri Egorov's performances (of the Schumann program).'

Just as in stage (I), in stage (II) Asp can also contain the feature Result, indicating that we are dealing with the result of an event, the difference with stage (I) being that *v* is not agentive in stage (II). This is illustrated by the Catalan example (49), taken from Picallo (1991):

(49)   La discussió de les dades es va a publicar a la revista. (result)
       'The discussion of the data was published in the journal.'

(III) – The third stage of the nominalization process is reflected by object/entity nouns (*this beautiful building*). There are no arguments, there is no *v*P, no AspP, just as with nouns like *book*.

  Sleeman & Brito (2010) assume that in a type of eventive nouns distinguished by Grimshaw (1990), viz. nouns denoting a simple event (*trip*, *race*), the eventive meaning is part of the meaning of the lexical root itself. They are like object nouns: there are no arguments, there is no *v*P and no AspP.
  In this approach, Sleeman & Brito (2010) attribute the different properties of the nominalizations to the presence/absence and the changing properties of *v*P and AspP, building on Alexiadou (2001)'s approach, where *v*P is equivalent to VoiceP and AspP contains an (im)perfectivity feature or the feature Result.
  In more recent work, Alexiadou (e.g. 2008) distinguishes three verbal functional projections instead of two. Besides *v*P and AspP she distinguishes VoiceP, dissociating *v*P from VoiceP (Kratzer 1994).
  Although these functional projections come close to Ramchand's split *v*P (initP ~ VoiceP, procP ~ *v*P and resP ~ AspP), in this paper we try to account for the various readings of nominalizations within Ramchand's split *v*P hypothesis, and not within Alexiadou's VoiceP – *v*P – AspP approach for the following reasons. First, in Alexiadou's system the presence of an agent is related to the presence of VoiceP. However, with nominalizations agents can be absent, as in Sleeman & Brito's stage II of the gradual process of nominalization presented above, but (passive) Voice still seems to be present. Second, in the split *v*P approach there is a more natural relation between the intrinsic meaning of the verb and the presence of verbal functional projections than in Alexiadou's system. Third, for the same reason, the presence of

precisely three functional verbal projections within *v*P distinguished by Ramchand is motivated in her analysis.

In the next section, we will show that the splitting up of *v*P in three subparts can account in a natural way for the five readings of nominalizations distinguished by Sleeman & Brito (2010).

5.2   *Nominalizations and the split vP hypothesis*

In the previous section, we discussed Sleeman & Brito (2010), who argue that result phrases are still eventive in some sense, because they represent the result of an event. In Sleeman & Brito's analysis, this means that *v*P is still present, which distinguishes them from object nouns. This also distinguishes them from simple event nouns (*trip*, *race*) in their analysis, because they assume that the eventive meaning of these is part of the meaning of the lexical root itself. Sleeman & Brito distinguish two types of "complex" event nominals: one which can be combined with a *by*-phrase, and one which can only be combined with an *of*-phrase as the "agent". In total, Sleeman & Brito distinguish five values of nominalizations.

In section 4, we showed that Ramchand distinguishes four aspectual readings for verbs and that these correspond to the combination of the three subcomponents of *v*P that she distinguishes, initP, procP and resP, with procP always being present, being the heart of the dynamic predicate. These four verb types are: Initiation-Process verb, Initiation-Process-Result verb, Process verb and Process-Result verb.

In Ramchand's system, verbs are constants, which means that each verb is always represented by the same set of verbal functional projections. There are two major exceptions, as noted in section 4. First, intransitive verbs such as *melt* (process) can become transitive by the merging of an initP on top of procP. Second, semelfactives like *jump* are inherently ambiguous between [init, proc] and [init, proc, res].

For nominalizations, we adopt the idea expressed in Alexiadou (2001) and other analyses of nominalizations within a syntactic approach to morphology (e.g. Van Hout & Roeper 1998) that the nominalization is created somewhere in the course of the merging process, either by the merger of nominal functional projections or by the merger of *n*P (Marantz 1997) and that the final realizations of nominalizations derive from post-syntactic rules that give the adequate morphological form to the nominals, specifically that give the final form to the nominal suffixes.

We propose that, within a split *v*P analysis, nominalization can take place above resP, above procP, or above initP. This means that in nominalizations less parts of split *v*P can be present than would be required by the intrinsic constant meaning of the verbal base.

Bašić (this volume) also adopts Ramchand's split *v*P hypothesis. Just like Ramchand, she assumes that verbs can be associated to several functional heads at the same time. Bašić claims that with complex event nominals the verbal root lexicalizes initP, procP and resP at the same time, that with simple events the verbal root lexicalizes procP and resP, and that with result nouns the verbal root lexicalizes only resP. This means that for nominalizations Bašić also allows subparts of *v*P, such as resP, to be lexicalized.

In this section, we propose that the five nominalization types distinguished in the previous section lexicalize different parts of Ramchand's split *v*P.

We distinguish five interpretations for nominalizations, instead of the three distinguished by Bašić, and propose that they lexicalize different parts of split *v*P: nominalization can take place above resP, above procP + resP, or above initP + procP +

resP. Although with verbs procP is always present, we claim that with nominalizations this is not compulsory, especially with non-eventive nominalizations (resP). Since we assume that nominalizations can be ambiguous between a resultative and a non-resultative interpretation, we propose that in addition to the three subparts of *v*P already distinguished, also procP and initP + procP can be lexicalized within the nominalization. With these five subparts of *v*P the five readings of nominalizations Sleeman & Brito (2010) distinguish can be accounted for:

stage I (non-resultative):
(50)   They were watching the destruction of the bridge (by the soldiers). (initP-procP) (=45)

stage I (resultative):
(51)   A análise do texto pelo aluno enriqueceu o conhecimento dos colegas. (initP-procP-resP) (=46)
        'The analysis of the text by the students enlarged the knowledge of the colleagues.'

Both cases are associated to an argument structure with a theme argument (= Undergoer) and an agent argument (= Initiator).
        Although plural is not very natural in these readings, it is not excluded, because there can be a plurality of events, as in the examples (15)–(17), repeated here as (52)–(54):[7]

(52)   Die Besteigungen der beiden Gipfel dauerten 6 Wochen. (Bierwisch 1989 for German, *apud* Alexiadou 2001: 72)
        'The climbings of the two tops took 6 weeks.'
(53)   Tijdens de martelingen van de politieke gevangenen door de zwarte brigades moesten alle journalisten het gebouw uit. (Van Hout 1991: 75 for Dutch)
        'During the tortures of the political prisoners by the black brigades all the reporters had to leave the building.'
(54)   Os jornalistas estavam a assistir a várias destruições de pontes, quando chegaram as tropas. (Brito & Oliveira 1997: 61 for Portuguese)
        'The journalists were watching several destructions of bridges, when the troops arrived.'

stage II (non-resultative):
  (55) Ik heb alle uitvoeringen (van Joeri Egorov) (van het Schumann programma) bijgewoond. (procP) (=48)
        'I have attended all of Youri Egorov's performances (of the Schumann program).'

InitP being absent, there is no *by*-phrase, but there is a possessor (in the nominal functional projections), which has an agentive flavor, because of the eventive character of the nominalization expressed by procP and the suppression of InitP. The initiator of

---

[7] Correlatively, the nominal functional projections can contain determiners different from the definite article, such as an indefinite determiner or a demonstrative, independently of the eventive character of the nominalization.

the event being absent, the merger in Spec, procP of the other participant in the event, the Undergoer, is not compulsory either.

stage II (resultative):

(56)   La discussió de les dades es va a publicar a la revista. (procP-resP) (=49)
         'The discussion of the data was published in the journal.'

For the nominalization of stage III, we propose that it simply contains resP. Although procP is the heart of the dynamic predicate and therefore is present in all of the four verb types that Ramchand distinguishes, we propose that procP is absent in stage III nouns, because they are not eventive. They are the most 'nouny' of the five types. Since there is only resP, but no procP, there can be no Undergoer :

stage III (object noun that expresses the result)
(57)   this beautiful building (resP)
(58)   Read this publication on-line. (resP)

The distinction between five types of nominalizations is thus naturally motivated by Ramchand's split *v*P hypothesis, with extra assumptions made for nominalizations.

6.   Conclusion

In this paper we have independently motivated the assumption made by Sleeman & Brito (2010) that for nominalizations five readings can be distinguished. In Sleeman & Brito's (2010) syntactic approach to morphology, these different readings are reflected in different syntactic structures for each of the five types, more specifically in different features attributed to *v*P and AspP, and in the presence/absence of *v*P and AspP, dominating the lexical root of the deverbal category. In this paper we have shown that the verbal root of the five types corresponds to five different combinations of Ramchand's (2008) split *v*P, which is composed of functional heads representing certain features of AspP and *v*P used in earlier analyses of nominalizations.

References

Alexiadou, A. 2001. *Functional Structure in Nominals. Nominalization and ergativity.* Amsterdam: John Benjamins.

Alexiadou, A. 2008. 'External arguments and transitivity alternations: the morpho-syntax of Voice', paper presented at the Syntax Circle, ACLC, University of Amsterdam, 23 April 2008.

Bašić, M. (this volume). 'On the morphological make-up of nominalizations in Serbian'. In *The Syntax of Nominalizations across Languages and Frameworks* [Interface Explorations series, volume 23], A. Alexiadou & M. Rathert (eds.), 39-66. Berlin: Mouton de Gruyter.

Bierwisch, M. 1989. 'Event nominalizations: Proposals and problems'. *Grammatische Studien* 194, 1-73. Berlin: Akademie der Wissenschaften der DDR.

Borer, H. 1998. 'Passive without θ-grid'. In *Morphology and Its Relations to Phonology and Syntax*, S. Lapointe, D. Brentari & P. Farrell (eds.), 60-99. Stanford University: CSLI.

Brito, A. M. & F. Oliveira. 1997. 'Nominalization, aspect and argument structure'. In *Interfaces in Linguistic Theory*, G. Matos, I. Miguel, I. Duarte & I. Faria (eds.), 57-80. Lisbon: A.P.L./Colibri.

Chomsky, N. 1970. 'Remarks on nominalization'. In *Readings in English Transormational Grammar*, R Jacobs & P. Rosenbaum (eds.), 184-221. Washington, D.C.: Georgetown University Press.

Grimshaw, J. 1990. *Argument Structure*. Cambridge: The MIT Press.

Hale, K. & S. J. Keyser. 1993. 'On argument structure and the lexical expression of syntactic relations.' In *The View from Building 20: Essays in Linguistics in Honour of Sylvain Bromberger*, number 24 in Current Studies in Linguistics, 53-109. Cambridge, Ma.: MIT Press.

Harley, H. & R. Noyer. 1998. 'Licensing in the non-lexicalist Lexicon: nominalizations, vocabulary items and the encyclopedia'. *MIT Working Papers in Linguistics* 32: 119-137.

Kratzer, A. 1994. 'The event argument and the semantics of voice.' Ms., University of Massachusetts, Amherst.

Larson, R. 1998. 'On the double object construction'. *Linguistic Inquiry* 19: 335-391.

Levin, B. 1999. 'Objecthood: an event structure perspective'. *Proceedings of CLS 35, volume I: The Main Session*. Chicago Linguistics Society, University of Chicago, Chicago, IL, 223-247.

Levin, B. & M. Rappaport Hovav. 1995. *Unaccusativity*. Cambridge. MA: MIT Press.

Marantz, A. 1997. 'No escape from Syntax: Don't try a morphological analysis in the privacy of your own lexicon'. *Penn Working Papers in Linguistics*, 4.2: 201-225.

Picallo, C. 1991. Nominals and nominalizations in Catalan. *Probus* 3: 279-316.

Ramchand, G. 2008. *Verb Meaning and the Lexicon: A First Phase Syntax*. Cambridge: Cambridge University Press.

Reinhart, T. 2000. 'The Theta System: Syntactic Realization of Verbal Concepts'. *OTS Working Papers in Linguistics*.

Sleeman, P. & A. M. Brito. 2010. "Nominalization, Event, Aspect, and Argument Structure: a Syntactic approach". In *Argument Structure from a Crosslinguistic Perspective*, M. Duguine, S. Huidobro & N. Madariaga (eds.), 113-129. Amsterdam & Philadelphia: John Benjamins.

Van Hout, A. 1991. 'Deverbal nominalization, object versus event denoting nominals: implications for argument and event structure'. *Linguistics in the Netherlands* 8: 71-80.

Van Hout, A. & T. Roeper. 1998. 'Events and aspectual structure in derivational morphology'. *MIT Working Papers in Linguistics* 32: 175-220.