Zero nouns with and without objects[1]

Antonio Fábregas

Department of Language and Linguistics, University of Tromsø

Abstract

One of the main topics on the study of the relationship between syntax and morphology is (deverbal) nominalizations. In this area, several generalizations that tie the morphological make-up with the syntactic structure have been made. Most relevantly, it has been argued that only overt nominalizations (those that include a nominalizer like *-ation* or *-ment*) are allowed to have internal arguments introduced in their structural representation. In this paper, we address some previously unexplained apparent counterexamples to this generalization, and we argue that they can be captured if particular restrictions on the spell out of the syntactic structure are taken into consideration.

1. To the basics and back: nouns with and without internal arguments[2]

The study of nominalizations is the study of how to define grammatical categories –how they are characterised in a system of features, how their categorial status gets reflected in their grammatical behaviour and how they relate to each other. The classical work of Grimshaw (1990) focuses on these issues, as it concentrates on the notion of eventive nominalization - namely those nouns that denote events- and makes a proposal about how they relate to the verbal category.

In this first section we will introduce the well-known concepts of Complex Event Noun and nominalization, take a look to existing analysis, and we will discuss some of the tests used to identify the former; we will argue that prepositional phrases can be taken as a reliable test in a language like Spanish. Section 2 presents arguments against having zero nominalizers in Spanish, adapting to this language the tests used by Borer. We will see that, prima facie, the results of these tests might be contradictory with the results of the tests presented in section 1. Section 3 proposes an analysis to solve the contradiction, using Phrasal Spell-Out instead of zero affixes.

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[2] The following abbreviations are used in the paper: 3 (third person), *des* (desinence), *nom* (nominalizer), *sg* (singular), *ThV* (theme vowel), *Vb* (verbalizer).

1.1. Refining the tests for the classification: conceptual and grammatical tests

First of all, notice that the criteria that can be used to determine that a noun denotes an event is more conceptual than grammatical. It is based on the selection of these nouns as arguments by some specific predicates: a predicate like *take place* must have subjects that denote an event (1).

(1)   a.   The destruction of the bridge took place at noon.
        b.   The war against the Turks took place in 1904.
        c.   #The book took place in 1990.

This distinction is conceptual because it does not have immediate grammatical consequences beyond the fact that some predicates or modifiers require those semantic notions to be denoted in the words they combine with. It is, in this sense, not very different from the requisite that states that a prefix like *ex* combines only with nouns that express social roles and socially acknowledged positions (and therefore combines well with *boyfriend, husband, president* or *director*, but badly with *youngster, woman* or *cat*). However, the internal division inside the class of event denoting nouns has grammatical consequences. It is the division between complex event nouns (2) and simple event nouns (3).

(2)   destruction, examination, impeachment, presentation
(3)   war, exam, class, conference, storm, earthquake

According to Grimshaw, the first class of nouns has an argument structure much in the sense in which verbs have argument structure: they require some constituents, to which they assign a theta-role, in order to be well-formed. This constituent is generally the internal argument, without which the nouns in (2) are ungrammatical in their event reading. Indeed, the sentences in (4), where the predicate forces the event reading, are ungrammatical unless the internal argument is interpreted as elliptical. The external argument, if present, is introduced as a PP, adopting the same form as in passive sentences; as in passive sentences, this argument is not compulsory (5).

(4)   a.   The destruction *(of Dresden) took place at noon.
        b.   The examination *(of the patients) took place in the E-wing.
        c.   The impeachment *(of Nixon) took place too late.
        d.   The presentation *(of the conclusions) took place too late.

(5)   The destruction of Dresden (by the allies) took place at noon.

In contrast, simple event nouns do not carry any argument structure. They allow combination with modifiers that eventually can be interpreted, if the conceptual meaning allows it, in a way that makes them similar to themes

or agents (6a), but crucially they are not obligatory (6b). Grimshaw's contention is that these modifiers are structurally like those in (7), which combine with nouns without any argument structure and without any event denotation. The concept expressed by the noun licenses the reading in both cases: in (6), as the noun denotes an event, it is possible to interpret the modifiers as agents or patients; in (7), it is possible to interpret the PP as the owner of the physical object.

(6) a. The analysis of the data took place in the auditorium.
     b. The analysis took place in the auditorium.

(7) the cat of the family

The difference between these two classes is that complex event nouns are deverbal. These verbs carry argument structure, which is preserved somehow also in the nominal version. The asymmetry between the internal and the external argument –the former being compulsory and the latter being optional- is understood if the nominal is in some sense a passive version of the verb (cf. Picallo 1991; notice the parallelism in 8).

(8) a. These data were explained (by Chomsky)
     b. the explanation *(of these data) (by Chomsky)

In contrast, simple event nouns are not deverbal, but basic nouns; as verbs have argument structure, but nouns do not, these nouns do not contain this information.

Several complications arise in this picture. The first one is that judgements based on whether the modifiers are implicit or just absent are not clear cut. In the Spanish examples in (9), we can see this problem. (9a) is a simple event noun, but in a sense, speakers tend to interpret that, despite the absence of a PP, there are some implicit participants which have to be active in the context in order to get a felicitous sentence. (9b), with a complex event noun, is not very different in this respect.

(9) a. La guerra tuvo   lugar en 1936.
         the war   took.3sg place in 1936
         'The war took place in 1936'
     b. La invasión tuvo   lugar en 1936.
         the invasion took.3sg place in 1936
         'The invasion took place in 1936'

The reason is not very difficult to understand. Ultimately, this test –once provided with the caveat that compulsory constituents can be implicit if understood in the context– is conceptual, and as such it can be contaminated by the speaker's tendency to conceptualize actions with participants. It is necessary to rely on other kinds of properties which

interact less with conceptual structures. Here we will rely on the kind of preposition that is licensed by the noun.

The reasoning that we are going to present is the following: in Spanish there are several prepositions that cannot occur as modifiers of non-derived object nouns like *book* or *paper*. They are, however, licensed as modifiers of verbal and adjectival predicates. When one of these prepositions appears as an internal noun phrase modifier, therefore, this suggests that the noun contains verbal (or adjectival) structure to license the preposition.

Spanish does not allow many different prepositions inside a noun phrase, when the noun is not derived from a verb or an adjective. These prepositions are almost exclusively reduced to *de* 'of', *con* 'with' and *sin* 'without' (10).[3]

(10) a.   la casa de Marta
          the house of Marta
          'Marta's house'
    b.   un café con leche
          a coffee with milk
          'a coffe with milk'
    c.   una cerveza sin alcohol
          a beer without alcohol
          'a non-alcoholic beer'

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[3] It should be said right away that the test we are about to present only works for languages where prepositions are severely restricted inside non-derived noun phrases, like Spanish. Languages like English allow a much wider range of prepositions to be licensed as noun modifiers even when there is no evidence that the noun comes from a verb. The following examples have been provided to us by an anonymous reviewer; notice that the nouns used here do not exhibit any verbal morphology:

  (i) the anathema by the church of those taking part in satanic rituals
  (ii) America's moratorium on helping to support the UNESCO

Notice, however, that (as shown in 17 with other cases) English allows these prepositions independently in clearly non-derived nouns denoting objects, which suggests that the fact that the prepositions appear in (i) and (ii) do not support the idea that the previous nouns contain verbal structure.

  (iii)   a. a book by Chomsky
        b. the book on the table

Of course, the crucial question at this point is what property of English PPs (and PPs in similar languages) makes them substantially different from Spanish (and related languages') PPs. This is a topic for further study, but we might suggest that some Spanish prepositional phrases need to formally agree with verbal projections in order to be licensed, while in English most of them (perhaps all of them) do not require any verbal formal licensing.

The other prepositions are severely restricted within NPs, and when the noun is not derived from a verb, they are rejected. The English translation in (11) shows that this is a property in which Spanish clearly contrasts with English.[4]

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[4] Some examples can be, prima facie, counted as cases where these prepositions are licensed in simple event nouns. As pointed by an anonymous reviewer, to whom we are gratefull, the following sequences can be found in google:

(i)   a. la guerra contra   el   narco en México
           the war   against the narco in Mexico
        'the war against the narco in Mexico'
        b. la fiesta   en el cielo
           the party in the heaven
        'the party in heaven'

However, in these sequences the prepositional phrase does not act as an internal modifier of the NP. These examples are grammatical in three situations, which all boil down to the PP being introduced by a predicational structure outside the NP. In the first case, the PPs are actually modifiers of a verbal predicate (ii.a). It can be proven that they do not form a syntactic constituent with the noun because this can be pronominalized leaving the PP outside (ii.b).

(ii)   a. Hay   una fiesta en el cielo.
           there.is a   party in the heaven
        'There is a party in heaven'
        b. La   hay   en el cielo.
           it-acc there.is in the heaven
        'There is that in heaven'
        c. *Una fiesta en el   cielo   tiene muchos invitados.
           a   party in the heaven has many   guests
        'a party in heaven has many guests'

Secondly, the PPs can be licensed inside a subject NP if the subject NP can get a propositional interpretation, that is, an interpretation where its meaning is not that of the entity denoted but the noun forms part of a whole situation which is inferred by speakers, supplying if necessary a verb. Notice that in such cases the adjective has to be one that predicates of propositions (iii); speakers must interpret the subject as '[having] a party in heaven':

(iii)   Una fiesta en el cielo   siempre es {deseada / *concurrida}
         a   party in the heaven always is   wished / crowded
         'A party in heaven is always {longed for / crowded}

(11) a.   *un libro por Chomsky
          a book by Chomsky
          'a book by Chomsky'
      b.   *el puente hacia   Brooklyn[5]
          the bridge towards Brooklyn
          'the bridge to Brooklyn'
      c.   *la casa   en la playa
          the house on the beach
          'the house on the beach'

This test can be more reliable than the previous one, as the (un)grammaticality of these prepositions is a formal property independent of their conceptual interpretations. In fact, all the semantic readings that the prepositions allow in the English examples (and the intended interpretation of the ungrammatical ones in Spanish) are allowed by the preposition *de* in Spanish.

(12) a.   un libro de Chomsky
          a book of Chomsky
          'A book by Chomsky'
      b.   el puente de Brooklyn
          the bridge of Brooklyn
          'The bridge to Brooklyn'
      c.   la casa   de la playa
          the house of the beach
          'The house on the beach'

Thirdly, it is possible to have these PPs if they are depictive modifiers, in which case the PP is not introduced by the noun, but by a predicational structure which relates it to the noun.

(iv)   un hombre en pijama
       a   man   in pajamas
       'a man that is in pajamas'

When these interpretations, produced by more complex predicational structures and where the PP is not introduced by the NP, are avoided, the prepositions are ungrammatical, as described here.

[5] Although still rejected by many speakers, the preposition *hacia* has started to be allowed with some restricted non-derived nouns, such as *puente* 'bridge' or *camino* 'road'. We are grateful to an anonymous reviewer for pointing this out to us. Further research would determine whether the right direction to explain this change has to do with special properties of object nouns denoting paths or with some ongoing changes in the feature endowment of this preposition.

Therefore, this gives us a formal test to show that the distinction between complex and simple event nominals has a grammatical status in Spanish. Complex event nominals license these prepositions (13), while simple event nouns reject them (14).

(13) a.   la invasión de Grecia por los persas
           the invasion of Greece by the Persians
           'The invasion of Greece by the Persians'
      b.   la migración de los pájaros hacia   el   sur
           the migration of the birds   towards the south
           'The migration of birds towards the south'
      c.   la explicación de los ejemplos en el aula 2
           the explanation of the examples in the class 2
           'The explanation of the examples in room 2'

(14) a.   *la guerra de Grecia por los persas
            the war   of Greece by the Persians
      b.   *la tormenta hacia   el   norte
            the storm   towards the north
      c.   *el   análisis de los ejemplos en el   aula 2
            the analysis of the examples in the class 2

1.2. Morphology and syntax in nominalizations: main correlations
All nouns belonging to (13) can be morphologically decomposed into a verbal base and a nominalizer suffix (15), while those in (14) do not come from verbs, although sometimes a verb can be built on top of them with additional morphemes (16).

(15) a.   inva   -sión
           invade-nom
           'invasion'
      b.   migra   -ción
           migrate-nom
           'migration'
      c.   explica-ción
           explain-nom
           'explanation'

(16) a.   guerr-e-a
           war-Vb-ThV
           'fight'
      b.   a-torment-a
           Vb-storm-ThV
           'upset'

    c.   anal   -iz-a
            analysis-Vb-ThV
            'analyze'

Thus, we see that there is a morphological generalization which is parallel to the distinction between complex and simple event nouns. All complex event nouns are morphologically built on top of verbs, but simple event nouns do not contain verbs inside their morphological make-up. This suggests that simple event nouns are grammatically like any other underived noun and do not contain any verbal structure. This verbal structure is, in contrast, present in complex event nouns, and is what licenses the special PPs in the set of examples (13).

The correlation between the two properties has been challenged (most recently in Newmeyer 2009) with examples of simple event nouns which apparently contain argument structure in Grimshaw's sense. The examples are taken from English (17). Notice that the argument includes both reference to event modifiers –which we have already classified as a non-clear test, as it relies on conceptual combinations- and to prepositional phrases which can be interpreted as arguments or verbal modifiers.

(17)   a.   the <u>frequent</u> recourse <u>to long discredited methods</u>
       b.   the <u>constant</u> mischief <u>by the boy</u>
       c.   my <u>impulse</u> <u>to be daring</u>

The problem is, however, that English is not the optimal language to run this test, as we have seen that the conceptual criteria are not clear-cut and the formal test based on the prepositions licensed is weakened in English by the fact that nouns which do not denote events tend to accept all kinds of prepositions. In other words, all PPs accepted by the examples in (17) are accepted independently by nouns of the class of *book* and *house*, and the fact that they can combine with some aspectual modifiers can be taken to be a product of conceptual selection more than a hint that these nouns contain verbal-like projections. Notice, for instance, that in Spanish nouns without any traces of verbal structure in their morphology allow for aspectual and temporal adverbs, but only if they denote a socially recognized role which can change during time.[6]

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[6] See Munn & Schmitt (2005) for a proposal that nouns like these also have some internal aspectual structure. It is clear that, in order to allow these syntactic modifiers, these nouns must have some property that differentiates them from other nouns, and that the property is aspectual; however, it is far from clear, given the data offered by these authors, that the conclusion should be that these nouns contain proper verbal aspect.

(18) a.   el   anteriormente Primer Ministro
              the formerly   Prime Minister
              'the former Prime Minister'
      b.   el   tres   veces campeón
              the three times champion
              'the three time winner'

[adapted from Bosque (1989)]

It is therefore dubious that these examples have a real counterexample status and the generalization that only nouns that morphologically come from verbs can be complex event nouns seems robust.

The correlation between the status of these nouns and their morphological make-up can be extended. We have seen that only nouns coming from verbs can be complex event nouns, but this is a necessary – not sufficient– condition. Additionally, it is well known that in English nouns that contain a root that generally manifests as a verb without additional verbalizers do not behave like complex event nouns. (19) shows a number of examples of zero nominals and shows that none of them is able to take argument structure in the sense that overtly derived nominals do.

(19) a.   *the walk of the dog for three hours
      b.   *the dance of the fairy for the whole evening
      c.   *the (gradual) fall of the trees for two hours
      d.   *the salute of the officers by the subordinates
      e.   *the import of goods from China in order to bypass ecological regulations.

[Borer 2009, example (14)]

Although clearly more discussion and analysis would be necessary, we suggest that the crucial difference between Spanish and English non-aspectual PPs (like *by / por*, *in / en*, etc.) is that in Spanish they must be licensed by features that are only present inside predicational structures, and therefore carried by Predicational phrases of the kind that combine by default with adjectives and verbs. Hence, verbs and adjectives can license these prepositions, and a nominalization that contains the relevant heads also does; a non derived noun will not license them, unless it is part of a whole predicational structure (as in the cases presented in footnote 3). Further research will tell if this distinction can also illuminate other contrasts between English and Spanish in the prepositional domain, such as the existence of particles or preposition stranding.

1.3. An analysis of the correlation: Borer (2009, 2010)

Borer (2009, 2010) has proposed an analysis of these examples to motivate that they must be simple event nouns. Her proposal is the following. First of all, syntax combines three kinds of units (Borer 2005a): a) roots –which do not have syntactic or semantic properties of their own and must get them inside a syntactic context (cf. also Acquaviva 2009); b) lexical functors, which give rise to the traditional lexical categories noun, verb and adjective and in languages like English and Spanish correspond to the traditionally called derivational affixes (*-ation,[7] -ize, -ness, -ish*, etc.) and c) functional functors, which further expand the lexical categories into an articulate functional structure and in traditional terms would correspond to inflectional affixes, selecting specific lexical categories and therefore unable to revert the lexical category specification of a constituent that is headed by a lexical functor. The two last classes are rigid designators, that is, these units have a meaning of their own; roots never have meaning or other grammatical properties, and act as a mere phonological signature.[8]

Functors get combined with roots; in the context of a functor, a root is interpreted as a specific grammatical category, and a meaning is assigned to it. (20a) shows a root combining with a lexical functor; contextually, the root would be interpreted as a verb in our example, due to the specific functor used, which would force this reading on the root while turning the whole into a noun. In (20b), a root combines with a functional functor, getting interpreted with the grammatical category corresponding to the functional projections that the functional functor normally selects (in this case, noun).

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[7] It is possible to wonder if the proper segmentation of this nominalizer in English is *-ation* or *-ion* (with *-at-* being the verbalizer written as *-ate*). We have adopted this form given the existence of examples like *explain > explanation*; haplology might explain cases like *navigate > navigation* (not **navigatation*). In any case, if *-ation* happens to be segmented in *-at-* (V) and *-ion* (N), this would be orthogonal to our analysis (or Borer's), to the best of our understanding.

[8] The phonological signature of the root has to be respected in the following steps of the derivation, in such a way that supletion is not allowed in Borer's system. This is crucial for the strength of her predictions (and also for the analysis that we will argue for in section 3): if we allowed a root like *fight* to be spelled out as *war* in a nominal environment, then there would not be any way of predicting that simple event nouns do not carry arguments, as they could be covertly verbs spelled out with a supletive form designated only for nominal environments. It is crucial, therefore, that if the phonological signature of the root is A, this signature will be kept during the derivation.

(20) a.   ation   b.   ClassifierP
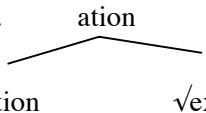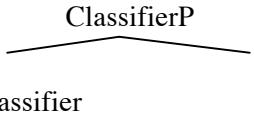
       ation   √explain   Classifier   √war

Secondly, the argument structure of the 'verb' is not introduced by the root (against Marantz 2005, Harley 2009) or the lexical functor corresponding to the verb. If this was the case, first of all, we would expect that given a root we would have nouns that either will always have argument structure or will never have it, but we cannot predict that the same root gives two kinds of nouns, with and without, as in (21).

(21) a.   the building of the bridge by the workers
   b.   a stone building

The same line of reasoning prevents the verbalizers from introducing argument structure. If that were the case, we would not expect to find any noun without argument structure containing a verbalizer (underlined in the following example), but English cases like those in (22) show that this is not true.

(22) The calc-_ific_-ation-s weighed three pounds.

Examples like these, which are unequivocally result nouns without an argument structure, show that the presence of the verbalizer does not automatically mean presence of argument structure.

    Borer's proposal is that arguments are introduced by the functional projections associated to the verbal category; more specifically, following Borer (2005b), the aspectual projections are those responsible for introducing the internal argument necessary in these nominalizations. Assuming that the morphological materialization of these components is null, the fact that the same deverbal nominalization might appear with and without argument structure depends on how big a constituent combines with the nominalizer. In (23a), this constituent includes aspect and therefore has argument structure; in (23b), these projections are missing and thus arguments do not appear.

(23) a.   -ation
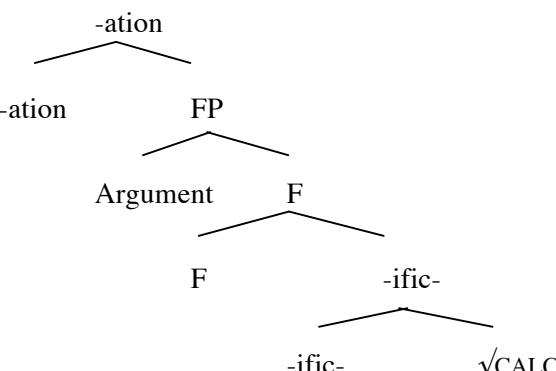
             -ation   FP

                    Argument   F

                           F   -ific-

                                  -ific-   √CALC

b.

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              -ation
            /        \
      -ation          -ific-
                     /      \
                -ific-       √CALC
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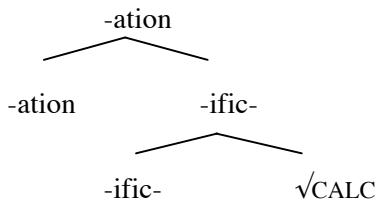
This same intuition that the presence of aspectual projections in the syntax is directly associated with the presence of internal arguments is developed in Alexiadou (2001): complex event nouns carry argument structure because they have a grammatically defined aspect and the syntactic structure (not just the conceptual system) carries information about aspect.

Now that we have presented Borer's system, we are in a position to understand her proposal about why zero nominalizations cannot carry arguments. The presence of arguments depends on the verbal functional projections. Thus, if we want a base with argument structure we need the structure in (24); different lexical functors could appear between FP and the root, provided that the highest one defines the label as verb, because this aspectual FP is incompatible with any other lexical category.

(24)

```
            FP
          /    \
   Argument     F
               /   \
              F     ...√
```
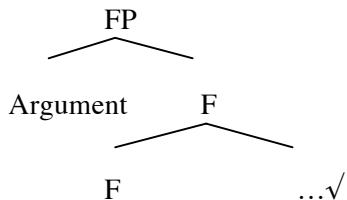
Now, in order to turn (24) into a noun, there would be in principle two tools that we could use. The first one would be to use a lexical functor like *-ation*. The second one would be to use a functional functor like the Classifier. The difference between the two tools is clear: the functional functor will have to be compatible with the last category defined in the structure, but the lexical one will be able to change the category of the whole. Consequently, only the lexical functor will give grammatical results in turning (24) into a noun (25a); using a functional functor will give rise to ungrammaticality (25b), because the functional category needs to be compatible with the label of the selected structure and classifiers (being part of the functional structure of nouns) are not directly combinable with aspect (which belong to the verbal domain).

(25)   a.   -ation

-ation   FP

Argument   F

F   ...√

b.   *ClassP

Class   FP

Argument   F

F   ...√
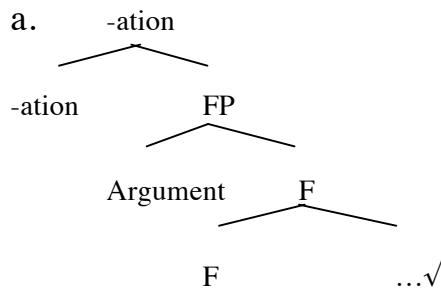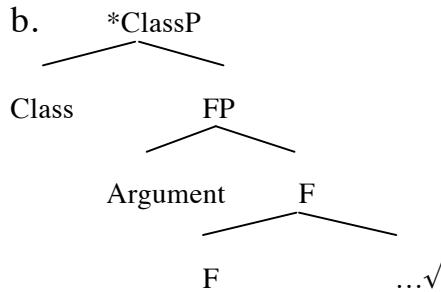
The incompatibility between FP and the nominal functional sequence is what explains that zero nouns cannot have argument structure. A noun like *walk* cannot have argument structure because it is turned into a noun by the functional projections, not by a lexical functor. Its structure is one where the nominal projections directly combine with a root which is not dominated by verbal functional projections.

(26)   ClassP

Class   √
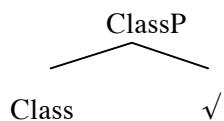
It is crucial to Borer's argument that English does not have a phonologically null nominalizer (a mute version of *-ation*). If that was the case, the structure underlying the noun *walk* could be the one in (27), where –in the presence of a lexical functor– nothing prevents the root from being dominated by FP, and thus, from having argument structure.

(27)   NP

N   FP
ø
Argument   F

F   ...√
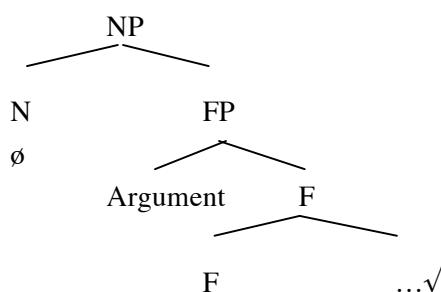
The proposal that English lacks a phonologically null nominalizer is independently confirmed by other data, so it cannot be dismissed as a stipulation. Crucially, it is not possible to have a zero nominalization of any base that contains an adjectival or verbal lexical functor.

(28) a. * an atom-ize (vs. an atomization)
      b. * a ver-ify (vs. a verification)
      c. * a child-ish
      d. * a love-ly

If English had a zero nominalizer, the non-existence of zero nominalizations coming from bases with that morphological shape would be unexpected. This is why: with a zero nominalizer we could obtain nouns from the bases in (28) by adding a nominal lexical functor, able to revert the lexical category specification of the previous structure (29).

(29)

```
            NP
          /    \
        N       -ize
        ø      /    \
           -ize      √ATOM
```
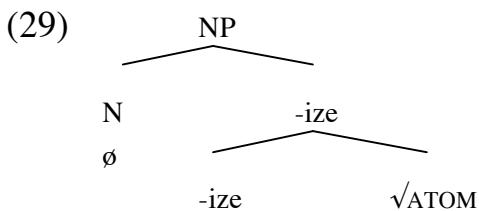
In the absence of this nominalizer, however, we correctly predict that the forms in (28) are impossible. Our only option to turn them into nouns would be to use the functional nominal projections, but these would not be compatible with the category label of the base, which would be either verb or adjective due to the highest lexical functor.

(30)

```
          *ClassP
          /     \
     Class       -ize
                /    \
            -ize      √ATOM
```
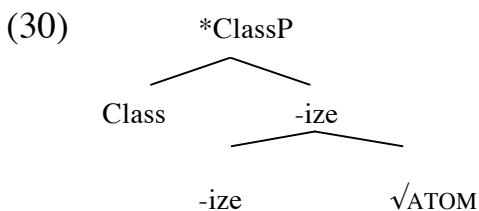
1.4. Summing up the situation

Let us summarize the review that we have presented in this section and that constitutes the background for the puzzle we want to discuss. There are, structurally, two main classes of nouns: those that contain functional projections which introduce argument structure and those that do not. This last class can be divided, in turn, into two subclasses: those that conceptually denote events, but whose structure does not carry this information, and those that denote other notions. The following table summarizes this, ignoring the other classes of nouns with argument structure which we have not discussed in the introduction.

Table 1. Structural classes of nouns

FP-nouns	No FP-nouns	
destruction	Denoting events	Denoting other notions
	war	*dog*

Interestingly, these grammatical properties are matched by some restrictions on the morphological make-up of the nouns. A noun can only introduce argument structure if it contains overt nominalizers (*-ation, -ment,* etc.). This is a necessary, but obviously not suffcent condition. If the noun does not contain overt nominalizers, it cannot carry arguments. Nouns which fall in this class can be divided into two groups: those whose root otherwise materializes as a verb without any overt verbalizers and those whose root needs verbalizers to materialize as a verb.

Table 2. Morphological conditions on argument structure nominals

AS-nominals	Non AS-nominals	
destruc-tion	Root manifests as a verb without extra morphology	Root would need extra morphology to manifest as verb
	walk	*war*

This correlation between grammatical behaviour and morphological make-up seems (almost) entirely systematic, and is appealing to the extent that it helps understand morphology as a reflection of specific properties of structures, and not as the mere marking of idiosyncratic formal conditions (as both lexicalism and Distributed Morphology tend to treat it). However, the correlation seems to be challenged by some data, which we will discuss in the next section.

2. The trouble with(out) zero: Spanish

The problems that this morphosyntactic generalization faces can be illustrated in English, but for reasons that we will make explicit now, they are more clear in Spanish. Borer (2009) and Newmeyer (2009) mention a variety of cases where English zero nominalizations seem to behave as argument taking nominals, that is, as complex event nouns (31).

(31) a. my constant change of mentors from 1992-1997
b. the frequent release of the prisoners by the governor
c. the frequent use of sharp tools by underage children

    d.   an officer's too frequent discharge of a firearm
    e.   the ancient Greek's practice of infanticide
    f.   my constant need for approval
    g.   the student's conscious endeavor to improve her grades

There are three possible reactions to these English examples. The first one is that the nice generalization where morphological properties match the grammatical behaviour of a word is wrong. The second possibility is to accept that English exceptionally allows for a zero nominalizer in examples such as those in (31), only that this morpheme is restricted to a handfull of roots and is not productive. This seems to be the solution that Borer suggests. However, there is a third possible interpretation of (31), relative to the grammatical properties of English. This interpretation would argue that the presence of arguments is just apparent in the examples in (31), because all the PPs licensed in these contexts are independently licensed by non-deverbal bases, and the interpretation of these constituents as arguments (or that of adjectives like frequent, which need that events are denoted) is a conceptual property that might not be reflected in the structure.

    The problem is that these three solutions are not available in Spanish, for reasons that we will address immediately, and still there are cases of zero deverbal nouns that behave like complex event nouns (32).

(32) a.   el ataque a los troyanos por los griegos durante 10 años
               the attack to the Trojans by the Greeks for   10 years
      b.   la constante lucha de los pueblos oprimidos para conseguir su
               the constant fight of the people oppressed to   achieve their
               independencia
               independence
      c.   el acuerdo de colaboración por Hitler y   Stalin
               the agree   of collaboration by Hitler and Stalin
      d.   la entrega del   paquete a María en su propio domicilio
               the deliver of-the package to Mary in her own   house
      e.   el encierro de los detenidos en el calabozo por la policía
               the confine of the prisoners in the cell   by the police
      f.   el desguace del   coche en piezas pequeñas por el mecánico
               the scrap   of-the car   in small pieces   by the mechanic

The first contrast with English is that, while according to Borer and Newmeyer the argument taking zero nominalizations are scarce, in Spanish it is not difficult to find data like this. Although there are no percentages about the productivity of this construction -to the best of our knowledge-, a random sample of data shows that it is not right to consider them

exceptional. The *Nueva Gramática de la Lengua Española* (RAE 2009) lists at least 307 random examples of these zero formations, from which more than 70% (our count) license prepositions like *por* 'by' in an agent interpretation, which non-deverbal nouns systematically reject.

Despite the frequency of the phenomenon, Spanish also shows the phenomena that argue against a zero nominalizer in English. As seen in (33), whenever the verb is overtly derived by a suffix (33a, 33b), the nominalization is blocked unless an overt nominalizer is used (34a, 34b). The generalization extends to any morphological marker of the verbal category, including theme vowels, which cannot appear in the zero nominalization (33c vs. 34c).

(33)　a.　　*un aterr-iz-a
　　　　　　　a land-Vb-ThV
　　　b.　　*un palid-ec-e
　　　　　　　a pale-Vb-ThV
　　　c.　　*un plant-a
　　　　　　　a ditch-ThV

(34)　a.　　un aterr-iz-a-je
　　　　　　　a land-Vb-ThV-nom
　　　　　　　'a landing'
　　　b.　　un palid-ec-i-miento
　　　　　　　a pale-Vb-ThV-nom
　　　　　　　'a paling, fading'
　　　c.　　un plant-e
　　　　　　　a ditch-desinence

Thus, we have to conclude that, empirically, the phenomenon cannot be explained by the presence of a zero nominalizer in Spanish, because that nominalizer would not be restricted to a small number of roots and if it existed the reason why words like those in (33) are ungrammatical would be a mystery.

The third potential explanation of the relatively few English counterexamples –namely that they are actually simple event nouns interpreted as carrying event structure due to their conceptual properties– is unavailable in Spanish. As noticed in the examples (14), Spanish does not license a number of PP modifiers inside noun phrases unless the noun has a verbal origin. However, the examples in (32) involve nouns that take the PPs that are generally rejected in the examples in (14), precisely in the semantic reading that these nouns reject. We have *by* phrases in an agent interpretation (32a, c, e, f), *during* phrases (32a) and, perhaps most significantly of all, *in* phrases with a result interpretation (32d,e,f). In

Spanish, this last preposition is a good diagnostic that the noun has verbal structure because of two reasons. The first is that the preposition *en* 'in' is strongly rejected by underived noun phrases (14c). Secondly, as shown by Ramchand (2008), this locative preposition can only refer to a result when the verb contains event structure that identifies the result subevent and the phrase is semantically associated with that subevent (35). The Spanish data in (36) show that this is the case also in Spanish and, moreover, that the relevant interpretation is preserved under overt nominalization when the original verb allows it (36b). The relevant examples in (32) show that this is also the case in zero derived nominals, suggesting that they must have a verbal structure with sufficient event information to license the reading.

(35)   to break the vase <u>in a thousand pieces</u>

(36)   a.   romper   el jarrón <u>en mil   pedazos</u>
            to-break the vase   in thousand pieces
            'to break the vase in a thousand pieces'
       b.   la rotura   del   jarrón <u>en mil   pedazos</u>
            the breaking of-the vase   in thousand pieces
            'the breaking of the vase in a thousand pieces'

We believe that the set of data presented here shows that Spanish does show a genuine counterexample to the generalization that morphology can predict the grammatical behaviour of nominalizations.[9] On one side, the

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[9] The potential analysis of the zero nominalizations in Spanish which involves considering the desinence an overt nominalizer -and therefore would lead us to conclude that the data in (32) are not zero nominalizations- cannot be adopted for a number of empirical reasons. First of all, the same desinences appear in the adjectival category, so they cannot be morphemes used to nominalize (cf. the set of cases in (i) in comparison to those in (ii)). Secondly, the desinence co-occurs with affixes which behave like nominalizers (iii), which shows that they cannot be responsible for the categorization, as in that case one of the two nominalizers would be vacuous.

    (i)   a. gat-o
            cat-des 'male cat'
          b. gat-a
            cat-des 'female cat'
          c. hombr-e
            man-desinence 'human being'

    (ii)   a. blanc-o
            white-des 'white, masculine form'
          b. blanc-a
            white-des 'white, feminine form'
          c. pobr-e
            poor-des 'poor, masculine and feminine form'

behaviour of the PPs as noun modifiers displays with these nouns the same pattern as with complex event nominalizations, suggesting that they contain verbal structure. These argument taking zero nouns contrast with the argument-less simple event nouns in that the former systematically contain a root that manifests independently as a verb, while the root of the latter class only becomes a verb when combined with overt verbalizers.

But if we assume that these zero nouns are derived from verbs, the automatic question is what is turning them into a noun, as we have already determined that the same reasons that prevented Borer from allowing a zero nominalizer in English are valid –perhaps in a stronger way- in Spanish.

Given this puzzle, is it possible to keep the nice isomorphism between morphological make-up and grammatical behaviour in such a way that we explain these cases and integrate them in the theory? And, if so, to what price? In the next section we will argue in favour of an account of these data which captures the relevant generalizations without making distinctions between kinds of syntactic heads and without positing any kind of zero nominalizers, productive or not.

3. An account of silence based on constituency

Let us see where we stand now in terms of data and explanations. We have the following generalizations (a-c) and a set of counterexamples (d):

a) Nouns whose root cannot surface as a verb never license PPs interpreted as true arguments
b) Overt deverbal nominalizations can take PPs interpreted as arguments
c) Verbs containing verbalizers or specific verbal markers do not manifest as nominals unless an overt nominalizer is used
d) The generalization that only deverbal nouns with an overt nominalizer take arguments has counterexamples in English and in Spanish. In the former, they are reported as exceptional, but in Spanish these nouns are quite frequent.

3.1. Problems with Borer's analysis

Borer's explanation of the two generalizations presented in (a) and (b) is, basically, based on a distinction between two kinds of syntactic objects: lexical functors and functional functors. The former have the power to


(iii)   mov-i-mient-o
         move-ThV-ment-des
         'movement'

change the category of the object they combine with, while the latter cannot and have to be compatible with the category of the object they take as complement. Given this crucial distinction, the generalizations are explained by showing that arguments are introduced in a functional projection of a verbal nature. As such, the structure thus formed would manifest as a verb, unless a lexical functor selects it and turns it into a nominal structure. This means that in the absence of a nominalizer, a structure with arguments will not manifest as a noun. On the assumption that English does not have a phonologically null nominalizer (coming from the generalization (c)), the pattern in (a) and (b) is explained.

The explanation has two problems, one empirical and one theoretical. The empirical problem has already been discussed: nouns like *attack* or *ataque* 'attack' do not have overt nominalizers but carry argument structure, given our PP licensing tests. Both languages, English and Spanish, follow generalization (c), which is not expected if a language has a phonologically null nominalizer. Therefore, these data go against the explanation offered by Borer. Treating the examples as exceptions might be possible –though not desirable, by explanatory standards– in English, but not in Spanish.

The theoretical problem involves the division between lexical and functional functors. This distinction, inside Borer's theory, means that syntax combines three kinds of objects: roots, functional functors and lexical functors. It would be theoretically preferable that the number of distinctions between the primitives used in syntax be as small as possible, with the optimal conclusion being that there are no distinctions and all differences in the behaviour of objects derive from the properties of the structures formed by them. Additionally, the difference between the two kinds of functors is empirically equivalent to the distinction between inflection and derivation in morphology, with the first being unable to change the grammatical category of the input and the second being able to do so. This distinction between morphological processes has been questioned, given the fact that cross-linguistically it is difficult to find universal differences between them and that in the best case, given a language, it is possible to identify some prototypical tendencies of each process, but by no means absolute distinctions (see Marantz 2000 for more on this). Also, the distinction between these two kinds of heads has the problem that some affixes, such as the participle markers, are almost universally ambiguous between processes that behave like derivation (taking a verbal input and giving an adjective as output) and processes that have the typical properties of inflection (as when some verbal forms inside a given paradigm are produced). This duality is unexpected if derivation

and inflection are different processes, especially if the difference involves different kinds of heads.

In the next section, we will propose an alternative analysis of generalizations (a), (b) and (c), which, as we will try to show, allows us to capture also the unexpected data without the need to assume differences between kinds of heads.

3.2. Zero affixes vs. portmanteau morphemes

Assume that in syntax we end up with the structure in (37).

(37)

```
              XP
          ___/  \___
         /          \
        X            YP
                 ___/  \___
                /          \
               Y            Z
```
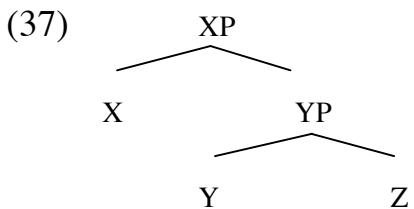
Imagine that the morphological make-up of the structure in (37) is not transparent and it is not possible to identify three distinct morphophonological segments, each one of them corresponding to one of the three heads involved. Imagine, for the sake of clarity, that there is only one morpheme, <blah>, materializing the structure, and that speakers are able to reconstruct the structure in (37) when they hear <blah>.

There are, however, two ways of understanding the mismatch. The first one is that <blah> corresponds to one of the three heads (let's say it is Z) and both X and Y correspond to distinct phonologically null morphemes, as represented in (38).

(38)

```
              XP
          ___/  \___
         /          \
        X            YP
        ø        ___/  \___
                /          \
               Y            Z
               ø          <blah>
```
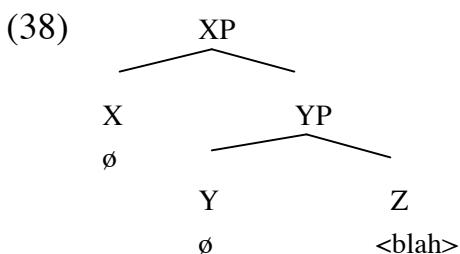
In this scenario, assuming that zero morphemes require some form of morphological reordering before the word is pronounced –which is not obvious, if zero means that they lack phonological properties–, the real structure of the word that sounds like <blah> would be the one in (39). Of course, the reordering would not be necessary unless independent tests (like the relative position of adjuncts to YP) show that <blah> ends up under X.

(39) $blah_Z$-$ø_Y$-$ø_X$

However, there is another possible analysis of the mismatch, namely that the morpheme <blah> is a portmanteau morpheme that spells out all the information contained in the tree in (37) at the same time. That is: <blah> is not the spell out of any of the individual heads, but the spell out of the three of them when they are combined in the order shown in (37). The representation in (40) tries to show that <blah> is a morphophonological segment associated to the three positions.

(40)

```
                  XP
              ╱        ╲
         X              YP
          ⋮           ╱      ╲
          ⋮        Y           Z
          ⋮       ⋰         ⋰
          ⋮     ⋰       ⋰
          <blah>
```
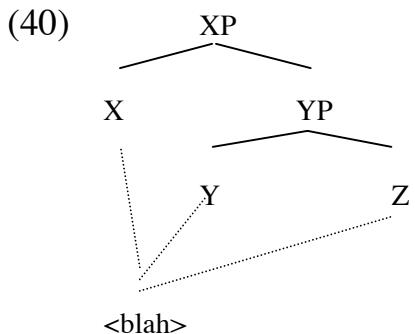
The two analyses make very different predictions. Crucially, the one in (40) requires that the three heads involved in the construction form a syntactic constituent in the absence of other heads that could be present in the tree. This is so because the morpheme spells out all features contained in them. In contrast, the proposal in (38) does not make this prediction, because there each one of the heads is still paired to a different morpheme, so the heads are not required to form any constituent to be spelled out. We therefore expect that in (38) additional heads could appear between Z and Y or between Y and X; (40) predicts that this will not happen.

3.3. The proposal

The generalization in (c), about the impossibility of words like *economize* to be used as nouns unless an overt nominalizer is present, prevents us from using an analysis based on zero morphemes, but not from using an analysis based on portmanteau morphemes. Let us see why.

Assume that Borer's proposal about the syntactic structure of the different kinds of nominals is right, including the claim that argument structure is introduced by a syntactic extension of the verb. This would mean that (41) is the structure of a complex event noun. Although Borer does not assume this, we suggest that the projection that introduces arguments always selects a verb phrase and cannot select directly a root.

(41)

```
              NP
         /          \
        N            FP
                 /        \
            Argument       F
                        /     \
                       F       VP
                            /      \
                           V        √
```
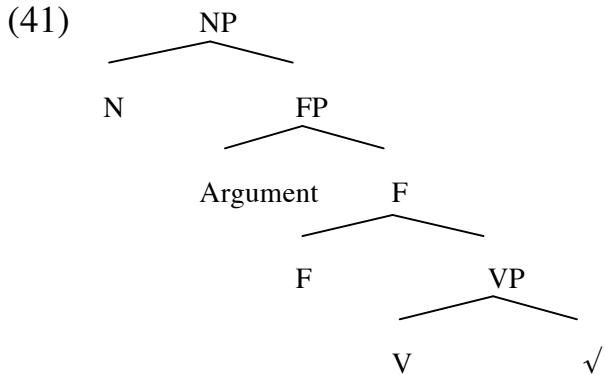
Our proposal is that all complex event nouns (namely, nouns that have PPs as arguments) have this syntactic structure. What is possible and what is impossible derives from conditions on spell out, and more in particular by the need of the relevant morphemes to spell out only heads that form a syntactic constituent in the absence of other heads.

We propose that a morpheme like *attack* (or *ataqu-* in Spanish) spells out as a portmanteau morpheme the five heads involved in (41), as shown in (42).

(42)

```
              NP
         /          \
        N            FP
                 /        \
            Argument       F
                        /     \
                       F       VP
                            /      \
                           V        √

       attack
```
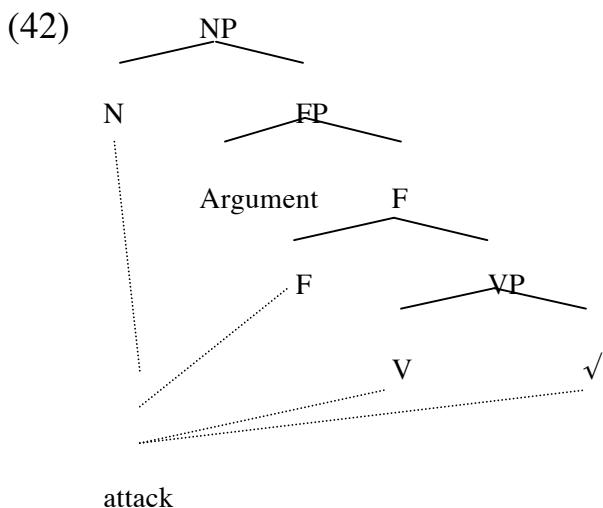
As in any other theory, the morphosyntactic features that each lexical item spells out is an arbitrary matter, and as such there would be other morphemes, such as *walk,* that are unable to spell out these five heads. More in particular, we propose that walk does not spell out N. This means that the structure of (41) will require an extra morpheme in order to be spelled out, as in (43).

(43)

```
              NP
          ╱        ╲
       N            FP
      -ing       ╱      ╲
            Argument       F
                        ╱      ╲
                      F          VP
                                ╱    ╲
                              V        √

                           walk-
```
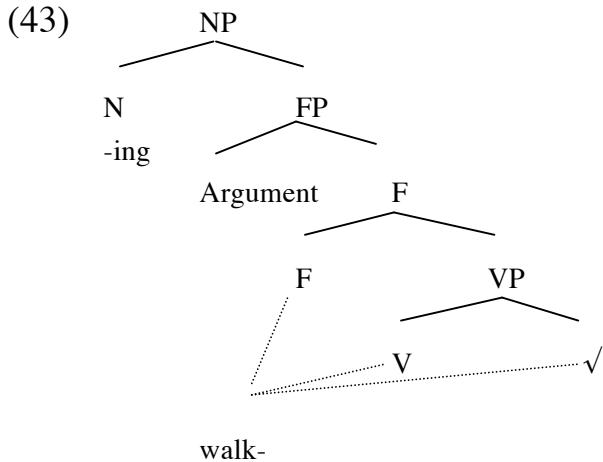
In the absence of an N, walk will be able to spell out, alone, the whole structure, but then the whole will behave as a verb, because the syntactic structure is headed by a verbal projection.

(44)

```
              FP
          ╱        ╲
    Argument         F
                  ╱      ╲
                F          VP
                         ╱    ╲
                       V        √
```
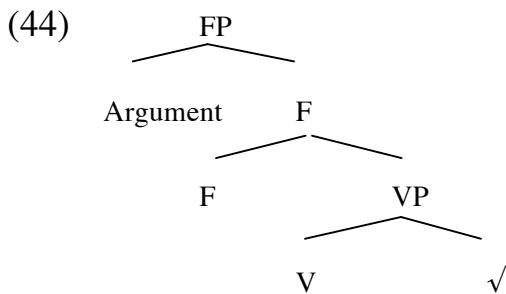
We propose that the item *walk* can also spell out only the root, which is the constituent that would appear in a nominal construction without FP and VP, as in (45), where we substitute ClassP (the label used by Borer) with NP, in coherence with our previous notation.[10]

(45)

```
              NP
          ╱        ╲
       N             √
       ø           walk
```
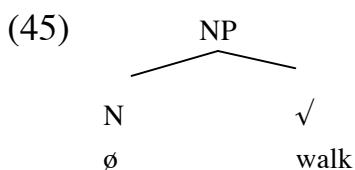
The idea is that, when a morpheme corresponds to more than one head, it can appear in contexts where not all heads are present, provided that a) the lower head is part of what it lexicalises (the Anchor Condition; Abels & Muriungi 2008) and b) there is no more specific lexical item designated to spell out the structure (the Elsewhere condition). This way of solving

---

[10] Notice, anyways, that depending on how Class is defined in your system, there is independent need for both N and Class if one wishes to make the morphology reflect syntactic properties: nouns in languages like Spanish or Italian can have both an overt nominalizer and a noun class marker.

syncretism is known as the Superset Principle (see Caha 2009 for a full explanation and extended empirical support for the proposal).

Let us be very clear that the set of morphemes that would behave like *walk* (and therefore will be unable to spell out the root, verbal structure and a nominalizer) and those that behave like *attack*, and will be able to spell all four heads at the same time, is not predictable and will be determined idiosyncratically for individual lexical items. This part of our analysis is 'lexical' in the sense that there are no deeper grammatical principles that determine that one morpheme will be able to spell out four heads and another one will only spell out three heads. This is purely idiosyncratic, but notice that in any theory the set of features that a particular morphophonological unit is paired with is idiosyncratic. This derives from the principle of arbitrariness of the sign.

3.4. *Explaining the generalizations*

See how our analysis gives an account of the generalizations (a), (b) and (c). Generalization (c) is straightforwardly accounted for. Imagine that in a structure like (41) one of the intermediate heads between N and the root is spelled out individually.

(46)
```
                NP
              /    \
           N        FP
                  /    \
           Argument     F
                      /    \
                   F        VP
                          /    \
                        V        √
                        ize
```
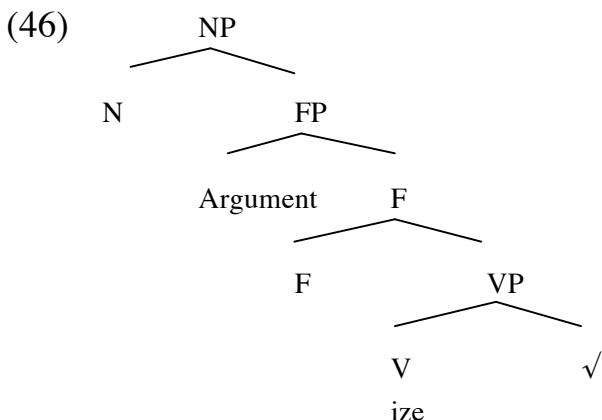
Now it is clear that no lexical item will be able to spell out the root and the nominalizer. The reason is that, once V is spelled out, the remaining heads do not form a syntactic constituent. Forcefully, then, the root and the nominalizer will have to be spelled out by different morphemes, as in (47). This explains that *economize* will never surface as a noun unless a nominalizer is used. In (47) we are neutral with respect to whether F has to be treated as a zero morpheme or is also spelled out by *ize*.

(47)

```
                    NP
            ┌────────┴────────┐
            N                FP
          -ation      ┌───────┴───────┐
                  Argument            F
                              ┌───────┴───────┐
                              F              VP
                             ize       ┌──────┴──────┐
                                       V            √
                                      ize        econom-
```
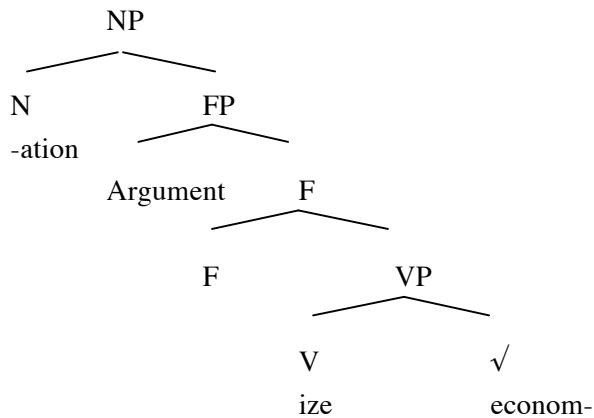
The same applies to the impossibility of having a theme vowel in a zero derived noun in Spanish. On the standard assumption that the theme vowel is the spell out of a verbal projection (cf. Oltra 1999; Arregi & Oltra 2005), the remaining projections do not form a syntactic constituent and thus the nominalizer would have to be spelled out independently of the root (cf. 48 for the spell out of *explicación* 'explanation').

(48)

```
                    NP
            ┌────────┴────────┐
            N                FP
          -ción      ┌───────┴───────┐
                  Argument            F
                              ┌───────┴───────┐
                              F              VP
                                       ┌──────┴──────┐
                                       V            √
                                      -a-        explic-
```
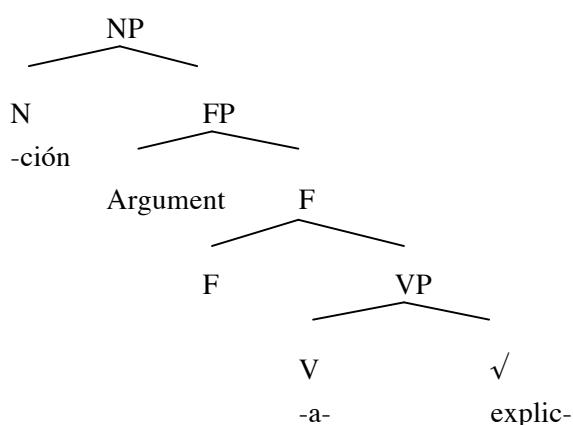
Notice also that the only way of making the root and the nominalizer become a syntactic constituent again after V or F have been spelled out independently is to move the root to the specifier of NP (49). However, this is impossible for syntactic reasons: as roots do not have syntactic properties, they cannot contain uninterpretable features, and therefore they will be syntactically inert. Given the Activity Condition (Chomsky 2000), it follows that the root will never be able to move in syntax (although it could still be reordered at PF). Therefore, given the syntactic nature of roots, it follows that lexicalising any intermediate head will prevent a lexical item from lexicalising the root and the higher head.

(49) *[$_{NP}$ [√]   N   [$_{FP}$ F   [...√]]]

Generalization (b) is trivially explained in this analysis. The fact that a morphological make-up containing a nominalizer is compatible with the structure in (41) is expected. This morphological make-up will emerge

when the lexical item that spells out the root at the bottom of the structure is, like *walk*, unable to spell out simultaneously also the nominalizer (50).

(50)

```
                 NP
           ┌──────┴──────┐
           N            FP
         -ation      ┌───┴───┐
                  Argument   F
                          ┌──┴──┐
                          F     VP
                               ┌─┴─┐
                               V   √
             expla(i)n-
```
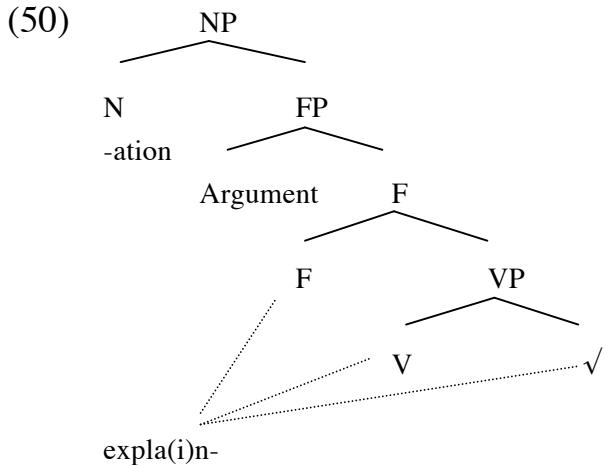
Generalization (a) is derived from the Anchor Condition and the Superset. In order for a noun to have argument structure, it has to contain a verbal projection, which means that the base needs to be interpretable as a verb. Thus, the constituent in (51) must be syntactically contained in any noun with argument structure.

(51)

```
              FP
          ┌────┴────┐
      Argument      F
                ┌───┴───┐
                F       VP
                     ┌───┴───┐
                     V       √
```
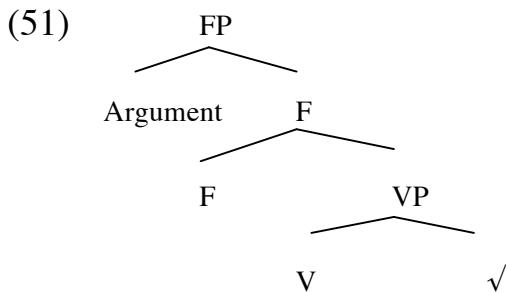
If the lexical item is of the *attack* class and can spell out from the root to the nominalizer, the combination of the Superset principle –that allows the lexical item to shrink– and the Anchor condition –that forces it to always spell out the lower head– enforces that any lexical item able to spell out the whole nominalization must also spell out only the verbal part, but will never be able to spell out only the nominalizer, because this is not the higher head. Given the structure in (41), (52) shows the relevant possible and impossible lexicalizations given these two formal principles.[11]

---

[11] As pointed out by an anonymous reviewer, it would be the case, of course, that the argument introduced in the specifier of FP will break the constituency between NP and FP: the lexical item lexicalizes NP and FP, but not the argument. This is true. We assume that the argument undergoes phrasal movement out of FP to the position where the genitive marker is licensed, and therefore that the copy it leaves becomes invisible to lexicalization, following the standard assumptions about chains or copies at PF.

(52)   [NP   N   [FP   F   [VP   V   [√]]]]
    a.   [attack   ]
    b.   [attack   ]
    c.   [attack   ]
    d.   [attack]
    e.   *[attack   ]

The result is that it will never be the case that the same lexical item will be able to spell out a non-derived noun and an argument-taking nominalization without being able to also spell out a verb. No lexical item that spells out a noun and never a verb will be able to carry argument structure, because it would imply that in shrinking it did not comply with the Anchor Condition: in one case it would lexicalize the whole structure (as in 52a) and in another case it would lexicalize only the nominal part (as in 52e), but the later is forbidden by the Anchor Condition, as the lexicalization does not take the lower part.

The same argument applies to lexical items of the *walk* class, only that then it is trivially satisfied: in these cases, the lexical item never includes the nominalizer (53).[12]

(53)   [NP   N   [FP   F   [VP   V   [√]]]]
    a.   [walk   ]
    b.   [walk   ]
    c.   [walk]

In the case of items like *war* or *econom-*, these never materialize as verbs on their own, because they only spell out roots and can never include V or F in the segment that they correspond to. Consequently, these items will never correspond to argument-taking nominalizations. Let us see why. As the lexical item does not spell out the verbal projections, if these projections are in the tree they must be spelled out by some other morpheme. (54) illustrates this for the English *economize* (54a) and the Spanish *guerrear* 'to fight', built from *guerra* 'war' by adding additional morphology (54b).

(54)   [VP   V   [√]]
    a.   [ize   [econom]]
    b.   [ea   [guerr]]

---

[12] For the generalization to be accounted for it is crucial that once the phonological signature of a particular root is introduced, it is preserved throughout the derivation and that it at no point can be spelled out by a different root. This aspect is also necessary in Borer's analysis (cf. footnote 2), but it is at the same time reminiscent of the claim that there is no real competition between roots (Harley & Noyer 1998).

Now, if we want to nominalize the whole structure, embedding (54) under an N, the same lexical item will never be able to spell out the root and such nominalizer, no matter how many projections would be between these two heads, because an intermediate head has already been spelled out by some other item.

Consequently, generalization (a) is explained by an analysis that accepts the Anchor Condition: given that the verbal structure is embedded in the nominalization, lexical items that are able to spell the whole nominalization will also be able to spell out the verbal subpart; those that spell the verbal structure only are able to spell verbs (trivially) and those that only spell roots and never verbs will never be able to spell out the whole nominalization.

4. A short note on the technical implementation

The crucial ingredients in our analysis are the following:

a) Elements lexicalized by the same lexical item must form a syntactic constituent
b) Some lexical items can spell out a set whose lowest head is the root and whose highest head is the nominalizer; others cannot and the distribution of items in these two classes is idiosyncratic
c) Shrinking a lexical item is possible, following the Superset Principle
d) When shrinking happens, the lexical item must always lexicalize the lowest head

There are two quite different assumptions about lexicalization that are compatible with these four statements. The first one is perhaps the most standardly assumed: when an item lexicalises more than one head, this is performed by cyclic head movement taking place in the PF branch of the grammar (Embick & Noyer 2001) followed by morphological fusion (Halle & Marantz 1993) or an equivalent operation that maps several syntactic heads into the same morphological segment. The heads have to be inside a syntactic constituent and no intermediate head can be spelled out independently because head movement must act cyclically and cannot skip intermediate heads. Shrinking would mean that the movement is optional in some cases, and the lexical item can spell out in the same way a set of features and a subset of that set of features. The Anchor Condition would translate to this technical implementation as a condition that states that head movement must start in the lowest point in the tree, and never in an intermediate head.

(55)

```
                          NP
                 N                 FP
           Fₖ          N     tₖ           VP
      Vⱼ        F                    tⱼ         tᵢ
   √ᵢ      V
```
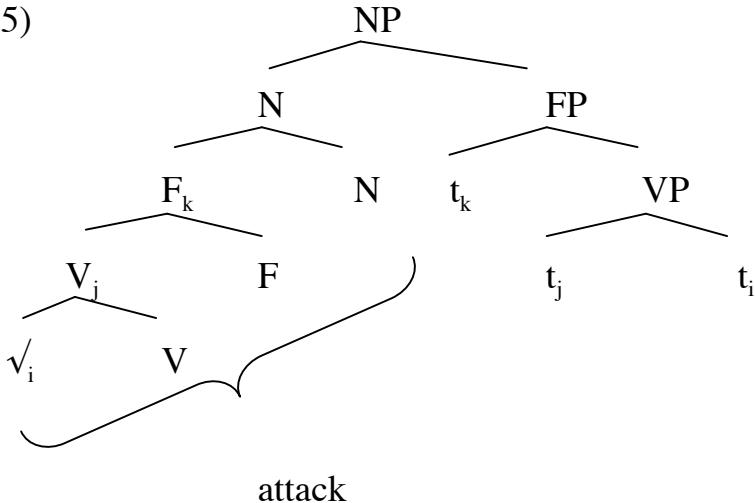
attack

Alternatively, phrasal spell out could be used to implement the same analysis. In this approach, lexical items can be inserted in non-terminal nodes (Neeleman & Szendröi 2007; Weerman & Evers-Vermeul 2002; Caha 2009). An item like *attack* would be inserted in NP, lexicalizing the whole syntactic constituent headed by this label without any need for head movement. The set of elements spelled out by the same item needs to be a syntactic constituent because otherwise there is no single node where the item can be inserted. Shrinking would mean that some subconstituents can be missing and the item is still used provided that there are no more specific items, and the anchor condition would stipulate that the lowest node must always be covered by the lexical item.[13]

(56)

```
            NP  ◄──────────  attack
       N          FP
             F          VP
                     V          √
```
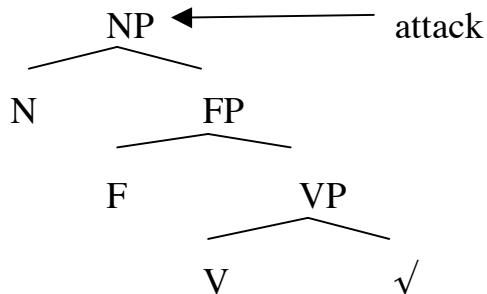
Although it would be possible to discuss from a theoretical perspective which one of these approaches seems to require less additional assumptions, to the best of our understanding there are no empirical arguments in the set of data that we have discussed that allows us to decide

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[13] The phrasal spell out approach is sensitive to the material introduced in specifier positions, so it requires that the argument in spec FP evacuates the projection before the lexical item is inserted. This can be obtained in a variety of ways: it can be assumed that the argument moves to a higher position inside the nominal functional structure, where it gets case licensed.

between these two technical implementations. We remain, thus, neutral with respect to this point (see Fábregas 2009, however, for an empirical argument for phrasal spell out).

5. Conclusions

In this paper we have argued that there are no real counterexamples to Borer's claim that only nouns which contain verbal structure can have arguments and that English (and other languages that comply with the morphological generalizations that hold of English, like Spanish) does not have a zero nominalizer. We have proposed, contra Borer, that the analysis is not dependent on the existence of two different kinds of functors, but rather on a spell out procedure that is sensitive to syntactic constituency. With our proposal, counterexamples to the generalization can be treated as cases where the same lexical item is able to spell out a set of heads that starts in the root and goes up to the nominalizer; this procedure is crucially dependent on the heads lexicalized forming a single syntactic constituent. In our analysis, we have not made any substantial change to the syntactic structures proposed by Borer in her analysis, and our contribution falls on the spell out side almost entirely.

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