Zero-sufxes and their alternatives: A view from French

Sleeman, P.

DOI
10.1515/zfs-2022-2013

Publication date
2023

Document Version
Final published version

Published in
Zeitschrift fur Sprachwissenschaft

Petra Sleeman*

Zero-suffixes and their alternatives: A view from French

https://doi.org/10.1515/zfs-2022-2013

Abstract: Zero-affixes have been used in morphology within pre-generative analyses, lexicalist analyses and syntactic approaches to morphology. The (over)use of zero-affixes has also led to criticisms and to alternative approaches, both within lexicalist models and syntactic approaches to morphology. In this paper, on the basis of French, a mix of several syntactic approaches is proposed. Two problems for Borer's Exo-Skeletal model, in which derivational zero-suffixes are dispensed with on the basis of English, are discussed. First, on the basis of V → N conversions in French an alternative to zero-suffixes is proposed. Second, the discussion of A/N parallel suffixes in French leads to the adoption of a second alternative to zero-suffixes. Both alternatives require an adaptation of the Exo-Skeletal model: the acceptance of mixed functional projections and suffixal roots in the model.

Keywords: zero-suffix, Distributed Morphology, Exo-Skeletal model, deverbal noun, root suffix, French

1 Introduction

Zero-affixes have been used both in inflectional and derivational morphology. Haas (1957), for instance, opposes a zero-morpheme to the third person present tense morpheme *-s*: he postulates a zero-morpheme for the cases in the paradigm where *-s* is absent (*I cut-Ø* versus *he cut-s*).

Within a generative approach to morphology, Kiparsky (1982 and further work) was one of the first linguists to analyze conversion with the help of zero-morphemes. He adopted a level-ordering approach to morphology/phonology and argued that a conversion pair V → N such as *torménť*]$_{V}$ → *tórment*]$_{N}$ involves a zero-suffix, because it is the zero-suffix that triggers the stress shift. Kiparsky assumed that since stress shift takes place at level 1, the zero-suffix that brings about the stress shift is a level 1 suffix. Kiparsky noted that level 1 derivations are accompanied by more idiosyncratic semantic interpretations and are less productive than level 2 derivations. Analyses such as Kiparsky's are directional, because

***Corresponding author: Petra Sleeman,** Faculty of Humanities, University of Amsterdam, Amsterdam, The Netherlands, e-mail: A.P.Sleeman@uva.nl

a determined direction of derivation is assumed. In the discussed case, a verb is changed into a noun (by means of a zero-suffix).

Some other analyses have not made use of zero-morphemes. One such analysis has been proposed by Myers (1984), who claims that, in the case of conversion, category change is brought about by inflection (verbal or nominal in English). He assumes thus that inflectional suffixes are assigned to a category. In this way he can account for the fact that, in English, which does not have adjectival inflection, conversion to an adjective does not exist. Category change into an adjective always involves overt suffixation, according to Myers. With this analysis, Myers also accounts for the observation that after conversion further derivation cannot take place.

For a comprehensive overview of different approaches, see Don (1993), on which the preceding limited overview is based, and Don (2023). Dahl and Fábregas (2018) also discuss the use of zero-suffixes for inflection.

In the nineties, there was a surge in syntactic approaches to morphology, in which derivation takes place in syntax. Within these syntactic approaches we can also distinguish two types of analyses: those that make use of zero-affixes and those that do not. An influential syntactic approach of the first type is Distributed Morphology (Halle and Marantz 1993). Within Distributed Morphology, category-less lexical roots are inserted in syntactic structures. Marantz (2001) proposes that the category is provided by functional categories such as little *v*, little *n* or little *a*, dominating a zero-morpheme or features that will be realized by an affix at spell-out. This means that a root can become a verb, a noun or an adjective, depending on the type of functional projection that is merged above the root.

A syntactic approach to derivation in which the use of derivational zero-affixes is rejected is Borer's Exo-Skeletal model (2003, 2013: Ch. 7). Borer argues that functional categories such as T(ense) are sufficient to change a category-less root into a verb and that zero-suffixes performing this job can be dispensed with altogether.[1] Borer bases her argumentation mainly on English. Two phenomena that can be advanced against Borer's model, namely V → N conversions (2013: §7.3.3) and A/N parallels (2013: §7.5), that is, suffixes that can form both adjectives and nouns, are considered to be too marginal by Borer (2013: 331, 367) to con-

1 One of the reviewers' concerns with a ban on zero-suffixes comes from inflectional paradigms, such as the non-marking of forms of the present tense in French. Borer's theory, as well as this paper, is especially concerned with derivation, but the use of zero-suffixes for inflection has been criticized as well in the literature and alternatives have been proposed, such as a default interpretation for unmarked forms, such as the singular or the present tense. See Dahl and Fábregas (2018) for an extensive discussion.

stitute counterarguments to her theory. Borer discusses these cases at large and argues that such cases are root-derived.

In this paper I will start from the assumption that Borer's Exo-Skeletal model is essentially correct. I will show, however, on the basis of French, that in this language V → N conversions and A/N parallels are not marginal phenomena. I will propose an adaptation of Borer's model in allowing mixed extended projections. This will account for the V → N conversions in French. For the A/N parallels I will propose an adaptation of Borer's model that consists of the incorporation of the possibility of category-less suffixes, as advanced by Creemers et al. (2018). This will result in a model that is much less tolerant than Distributed Morphology in its acceptance of zero-morphemes, but that allows various alternatives to zero-suffixes, such as mixed functional structure and category-less affixal roots.

The paper is organized as follows. In Section 2 Marantz' (1997) influential paper on a syntactic approach to morphology in the framework of Distributed Morphology is compared to Borer's Exo-Skeletal model and some of the main objections against Borer's model, namely V → N conversions and A/N parallel suffixes are presented. In Section 3, suffixless V → N transpositions in French are analyzed. They are of two types: nominalized infinitives in Old French and V → N conversions in French, without overt suffixation. They will be compared to nominalizations involving overt suffixation and will be used to argue in favor of the acceptance of mixed functional categories in the model. In Section 4, on the basis of A/N parallel suffixes in French, it will be argued that the model should also allow suffixal roots, as proposed in Creemers et al. (2018). The paper ends with a short summary of the results and some concluding remarks.

2 Syntactic approaches to morphology

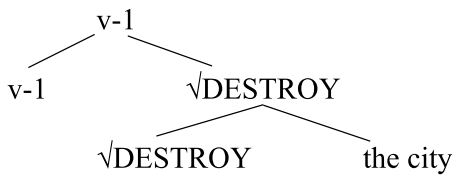
In this section, two syntactic approaches to morphology are presented: Distributed Morphology, in which zero-affixes are allowed, and the Exo-Skeletal model, in which they are not.

2.1 Distributed Morphology

Marantz (1997) argues that the Lexicon as a place for derivational morphology should be dispensed with. Building on Chomsky's (1970) "Remarks on nominalizations", he argues in favor of the insertion of lexical category-less roots in syntactic structures, with functional projections determining the syntactic behavior

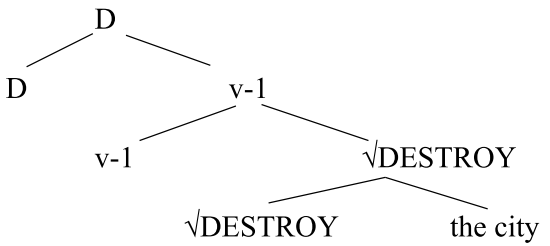
of nominalizations ending in *-tion* and *-ing* and nominalizations such as *growth*. While all are dominated by DP, they differ in the presence of a verbalizing functional projection directly dominating the root. The agent-projecting v-1 serves to "verbalize" roots. Marantz argues that it is not only present in sentences containing a verb (1), but also in *-ing* nominalizations (2). In the representations that he gives, the verbalizer is absent in *-tion* nominalizations (3) and in *growth* (4). The absence of the agent-projecting v-1 in *growth* is based on the crucial aspect of Chomsky's (1970) analysis that the root √GROW is non-agentive. Marantz assumes that v-1 is absent with *-tion* nominalizations as well. To account for the difference between *John's destruction of the city* and **John's growth of tomatoes* he proposes that with externally caused change of state roots such as √DESTROY, the possessor may be interpreted as an agent, while with internally caused change of state roots such as √GROW this is not possible:

(1)



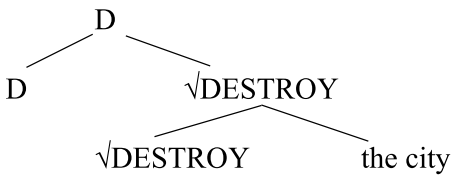
John destroyed the city

(2)



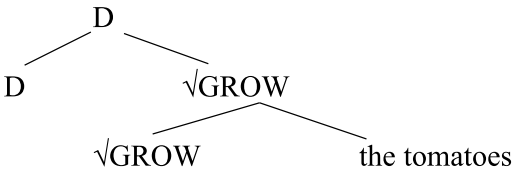
John's destroying the city

(3)



the destruction of the city, the city's destruction

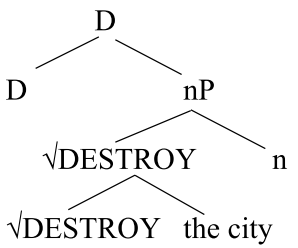
(4)



the growth of the tomatoes

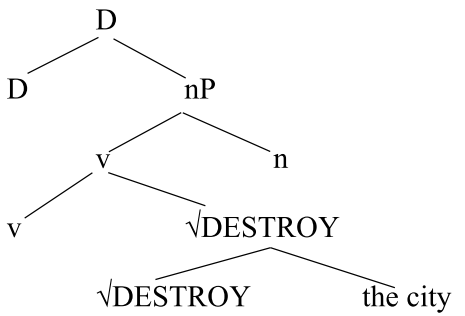
In later work Marantz also introduces the categorizers "little *n*" and "little *a*", besides "little *v*", as functional heads that determine the category of a word, see, e. g., Marantz (2001). In the structures of (2), (3) and (4) the categorizer "little *n*" is merged below D, as in (5)–(6):

(5)



the destruction of the city, John's destruction of the city

(6)

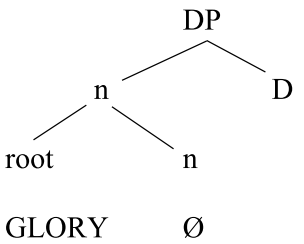


John's destroying the city / John's destroying of the city

In another analysis of nominalizations proposed within the framework of Distributed Morphology, the one put forth by Alexiadou (2001), nouns like *destruction* are ambiguous between an event reading and a result interpretation (Grimshaw 1990). In the first case Alexiadou assigns them a structure as in (2), whereas in the second case they receive a structural analysis as in (3).

Marantz (2001) states that words can be formed in the domain of the root by attaching a morpheme to the root. This happens in the case of *destruction* and *growth*. Words can also be formed outside the domain of the categorizer by merging a morpheme, as in the case of *destroying*, where the morpheme *-ing* is merged outside "little *v*. The morphemes *-ing*, *-tion* and *-th* are inserted into the "*n*" node. While in these cases there is an overt *n*, if there is no overt nominalizing suffix, as in the case of the noun *glory*, Marantz assumes that there is a null (or zero) *n*:

(7)



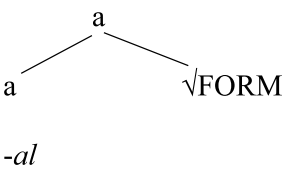
In Distributed Morphology, Vocabulary Insertion, a post-syntactic procedure, associates a phonological form with functional nodes. A functional *n* node can spell out as *-ation*, but also as Ø, a phonologically null suffix, in which case there is null exponence. The categorial nodes, besides specifying a category, are also associated with some syntactico-semantic information.

2.2 The Exo-Skeletal model

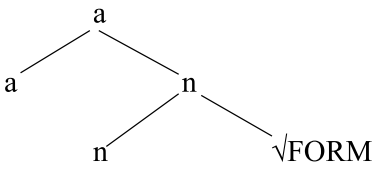
Although some linguists, like Marantz (2001), have argued that categoryless roots are necessarily dominated by a categorizer in cases such as (7) (e. g., Panagiotidis 2011), others have argued against them, more specifically because of the use of zero-suffixes. Objections against the use of zero-suffixes in syntactic approaches to morphology such as Distributed Morphology concern, among other things, a proliferation of the use of zero-suffixes and the issue of directionality of derivation.

Borer (2013) shows that in a model such as Distributed Morphology an adjective such as *formal* could be associated either to the representation in (8) or to the one in (9):

(8)



(9)



-al Ø

Besides stacking, a second objection against zero-morphemes is that zero-morphemes can have all kinds of categories and can provoke all kinds of syntactico-semantic changes to the root. A third objection concerns directionality of derivation. In theory it should be possible to add a zero-suffix to an overt suffix. But Borer (2013) shows that, in English, this is not possible:

(10) a. *a salutation*
b. **to salutation*

Because of these problems with zero-morphemes, Borer proposes a model that does not make use of zero-morphemes.

In Borer's (2003) Exo-Skeletal model, which is a syntactic approach to morphology just like Distributed Morphology, zero-affixes are completely banned. In this model, category-less roots can get a category in two ways: either by means of the merger of functional projections such as DP and TP (and thus not by categorizing functional categories, dominating a zero-affix), or by being subcategorized by a derivational morpheme. Besides specifying its own category, the derivational morpheme also determines the category of its complement, namely if it is a root. A derivational morpheme can also be merged above a root that has already been categorized by dominating functional projections. Crucially, in both cases, the derivational morpheme cannot be a zero-suffix.

Borer observes that two counterarguments can be raised to her theory: V → N conversions in English and parallel suffixed A/N derivations. Borer tries to dismiss both counterarguments.

V → N conversions in English are nouns like *drive*, *walk*, *break* and *murder*. Borer (2003) shows that they cannot be combined with complements. She argues therefore that they are result nominals and not event nominals (which she calls Argument Structure nominals):

(11) a. **the / John's drive of this car*
b. **the / Mary's walk of this dog*
c. **the / Kim's break of the vase*
d. **the airforce's murder of innocent civilians*

Borer argues that the absence of the Argument Structure reading of V → N nominals follows from the assumption that zero-suffixes do not exist in her theory. Only an overt derivational morpheme can nominalize a root, i. e., the L-D, the lexical domain, dominated by verbal projections. This explains why Argument Structure nouns as in (12) are possible, but why those in (11) are not. Borer's analysis of nominalizations with *-ing* corresponds to Marantz' analysis in (2) in the assumption that the nominalization contains a verbal projection. In the same way Borer's analysis of *destruction* corresponds to Alexiadou's (2001) analysis:

(12) a. *Kim's breaking / destruction of the vase*
b. $[_{NP}$ -tion$_{nom}$ / -ing$_{nom}$ $[_{DP}$ Kim $[_{aspQ}$ the vase $[_{L\text{-}D}$ break / destroy]]]]
(L-D → VP)

In a footnote (fn. 13) Borer (2003) observes that the generalization that V → N nominals can only function as result nouns has some counterexamples. She notes that there are at least some speakers who reject (11-a)–(11-d), but that others find them acceptable. The use of adjectives like *constant* and *frequent* without a plural, theta-assignment, aspectual modifiers and *by*-phrases as arguments are diagnostics used by Grimshaw (1990) to distinguish Argument Structure nominals from result nouns:

(13) a. *my constant change of mentors from 1992–1997*
b. *the frequent release of the prisoners by the governor*

Borer (2013) enumerates a longer list of deverbal Argument Structure nouns in English (for an overview see Iordăchioaia (2020)):

(14) *change*, *exchange*, *release*, *use*, *misuse*, *abuse*, *murder*, *discharge*, *endeavor*, *consent*, *resolve*, *descent*, *ascent*, *decline*, *collapse*, *rape*

Borer notes that these cases are problematic for her theory and that they should possibly involve some kind of null suffix.

Another problematic issue is the availability of parallel A/N suffixes (Borer 2013: §7.5). The problem of their existence for syntactic approaches has been raised by Lowenstamm (2014) and in work on Dutch by De Belder (2011). De Belder analyzes all derivational suffixes as roots. Borer (2013) acknowledges that parallel A/N suffixes also occur in English, as in *republic**an***, *social**ist***, *access**ory*** and *Iraq**i***. She argues, however, that parallels especially concern A/N, and that in Dutch there are only three cases involving other categories, which suggests that suffixal homonymy apart from A/N is rare. Most suffixes have one category. Furthermore, in order to reduce the number of A/N cases, Borer argues that some of the A/N cases could be reanalyzed as cases of nominal ellipsis.

Although Borer's Exo-Skeletal model is very attractive because it tries to eliminate zero-suffixes, I will signal some problems with the model in the next sections and I will propose a slight adaptation of the model, still avoiding the use of zero-suffixes. The argumentation will be based on French.

3 Deverbal nominalizations

In this section I will discuss two types of deverbal nominalizations: nominalized infinitives in Old French, which can be compared to Borer's *-ing* derivations in English, as in (12), and deverbal nominalizations without an overt suffix in French, comparable to the English examples in (11), (13) and (14).

3.1 Nominalized infinitives

Nominalized infinitives occur in languages such as Spanish, Italian, German and Dutch. They are analyzed for instance within the framework of Distributed Morphology by Alexiadou et al. (2011); see also Alexiadou (2020). The authors distinguish two types of nominalized infinitives: verbal nominalized infinitives and nominal infinitives. Alexiadou et al. argue that between these two types of nominalized infinitives, but also between languages, the number of functional projections may differ. Besides nominalized infinitives in Spanish and German, they analyze the English gerund. Whereas Alexiadou's (2001) analysis of deverbal nouns like *destruction* is based on Marantz' (1997) analysis of deverbal nominalizations, which may involve the categorizer *v*, Alexiadou et al.'s (2011) analysis of nominalized infinitives is rather based on Marantz' later work, such as Marantz (2001), presented in Section 2. In their analysis, both "little *v*" and "little *n*" are used, which besides other functional projections, dominate the root. A verbal nominalized infinitive only contains "little *v*" in the analysis that they present:

(15) [DP [TP [Aspect [VoiceP [vP [root]]]]]]

Structure (15), containing TP, is proposed for Spanish, where the verbal nominalized infinitive can contain a subject:

(16) *el cantar yo la Traviata*
the sing.INF I.NOM the Traviata
'me singing the Traviata'

For the nominalized verbal infinitive in German and the English verbal gerund, structure (15) without TP is proposed:

(17) a. [*Häufig die Sterne Beobachten*] *macht Spass*.
frequently the.ACC stars observe.INF makes fun
'Frequently observing the stars is nice.'
b. *Pat disapproved of John's quietly leaving the room*.

Nominal infinitives and the nominal gerund contain both "little *v*" and "little *n*", in Alexiadou et al.'s analysis:

(18) [DP [(NumberP) [ClassP [nP [AspP [VoiceP [vP [root]]]]]]]]

Structure (18) represents phrases like (19) in English or (20) in German, small details omitted:

(19) *the repeated killings of unarmed civilians*

(20) *das dauernde laut Singen der Marseillaise*
the constant loudly sing.INF the.GEN Marseillaise
'the constant loud singing of the Marseillaise'

Old French also had nominalized infinitives (Buridant 2008). Sleeman (2010) shows that, just like the nominalized infinitive in Spanish and German and the English gerund, they could be verbal, see (21) with a direct object and (22) with an adverb, or nominal, see (23) with a plural:

(21) *au passer le cemetire*
at-the crossing the graveyard
'while crossing the graveyard'

(22) *au souvent descochier*
at-the often shooting-arrows
'while shooting many arrows'

(23) *divers maintenirs*
'different conducts'

Mixed verbal and nominal properties are also possible. This means that there can be five types of infinitives in Old French (or in other languages with nominalized infinitives): purely verbal infinitives, verbal nominalized infinitives, mixed nominalized infinitives, nominal infinitives, purely nominal infinitives, i. e., lexicalized nominal infinitives such as *le rire* 'the laughter, the smile'. As has been argued in the literature, the syntactic behavior of nominalized infinitives is reflected in the

behavior of overtly suffixed deverbal nominalizations: they can also be verbal or nominal to various degrees (see, e. g., Sleeman and Brito 2010 and Sleeman 2021).

The analysis in Sleeman (2010) is based on Alexiadou et al.'s (2011) analysis. In this paper I propose an analysis partly based on Borer's Exo-Skeletal model, omitting the use of "little *v*" and "little *n*". I propose, however, also a slight adaptation of Borer's model.

As shown in (12-b), Borer analyzes *-ing* forms introduced by a determiner as a nominal suffix. Whereas for English *-ing* it could be argued that it is a nominal suffix because it also creates nouns (*a living*), infinitival suffixes do not do so. If infinitival suffixes cannot be analyzed as derivational suffixes (C-functors), Borer's theory has to be adapted, because otherwise the category change from verbal to nominal cannot be accounted for. I propose that the infinitival suffixes are simply verbal, as they are in their normal verbal use. This means that in the case of nominalized infinitives there are no suffixes (C-functors), but only functional projections (S-functors in Borer's theory). This is represented by Alexiadou et al.'s (2011) analysis of verbal nominalized infinitives as well, because there is no "little *n*": there are only S-functors, in Borer's terms, apart from "little *v*". Differently than in Grimshaw's (1991) Extended Projections model, it should thus be allowed in Borer's model that "nominal" functional projections dominate "verbal" ones, without intervening categorizers, as in (24). This was, in fact, already the case in Marantz' (1997) proposal. See also Borsley and Kornfilt (1999). Alexiadou (2020) also argues that mixing of functional layers should be possible, although she still makes use of "little v" and "little *n*" in her analysis of mixed categories.[2]

If categorizers are omitted, the structures of verbal and nominal nominalized infinitives only contain functional projections (S-functors), besides the root, but not the categorizers *v* and *n*. Borer calls a functional projection (S-functor) that licenses an object ASP_Q. Iordăchioaia (2020), presenting her analysis in the Distributed Morphology framework, calls it a ThemeP. There would also have to be S-functors licensing the complement of a nominal infinitive. The designations of the S-functors are not important. For the illustration they can simply be called F. Verbal nominalized infinitives (24) would be dominated by more S-functors than nominal infinitives (25). Their exact number or nature is not important here, but the S-functors in (24) would be "verbal" and the one in (25) "nominal":

(24) $[_{DP}$ the $[_{F1}$ $[_{F2}$ $[_{F3}$ [root]]]]]

2 In principle the use of "little *v*" and "little *n*" is not excluded. In this paper I propose that their use has to be excluded as simple categorizers. In Alexiadou (2001) and Alexiadou et al. (2011), "little *v*" and "little *n*" also have other functions, such as licensing of complements or genitives. In Borer (2013) S-functors have this role.

(25) $[_{DP}$ the $[_{F1}$ [root]]]

Such structures may not only be proposed for languages with nominalized infinitives, but also for the English gerund preceded by a determiner, but it means that *-ing* would not be an overt derivational suffix then, but rather an inflectional suffix, that is, a verbal suffix. This would need an adaptation of Borer's theory, because in Borer's model S-functors dominate roots or are extended projections of a C-functor, but mixing of nominal and verbal S-functors, such as DP and the verbal S-functors in (24), is not possible. The proposed adaptation consists thus in allowing categorial mixing of S-functors.

In the next subsection, another type of deverbal nominalization is discussed and analyzed, namely a type without any derivational or inflectional suffix.

3.2 V → N derivations without suffixation

Besides V → N derivations with overt suffixation (*-ation*, but also *-ing* in Borer's analysis, see Section 3.1), Borer (2013) also discusses V → N derivations without overt suffixation, more specifically in English. Borer distinguishes two types. Those in (26) can function both as a verb and a noun and do not take complements:

(26) (*a*) *break*; (*a*) *climb*; (*a*) *kiss*; (*a*) *look*

V → N conversions have been argued by Kiparsky (1982 and further work) to involve directionality. In Kiparsky's analysis N is derived from V by means of a zero-suffix (see also Don 2004, for Dutch). Borer argues that in (26) the verb and the noun share the same category-less root and that they are categorized by means of S-functors. Since they share the same root, the noun is not derived from the verb or vice versa. This means that the noun is a result noun. If it would be an Argument Structure noun, there would have to be a nominalizing suffix (a C-functor) dominating verbal S-structure. Borer uses the fact that the nouns in (26) are result nouns as an argument against zero-suffixes, i. e., zero C-functors.

There are, however, also deverbal nouns that are more problematic for Borer's Exo-Skeletal model. These are deverbal nouns without a suffix, but that behave like Argument Structure nouns. Some examples, from Borer (2003, fn. 13), were already provided in (13). Another one is shown in (27). The Argument status of these nouns is suggested by the use of adjectives like *frequent*, complements and *by*-phrases (see Grimshaw 1990 or Alexiadou and Borer 2020 for the precise list of diagnostics):

(27) *the frequent use of sharp tools by underage children*

The list given by Borer (2013) in (14) contains verbs such as *change*, *release*, *resolve*, and *use*. In Borer's Exo-Skeletal model cases such as these cannot be accounted for. In the case of Argument Structure nominals, there has to be a root dominated by some verbal S-structure, which is categorized subsequently into a noun by means of a nominal C-functor, i. e., by an overt suffix. Borer observes that the list is rather small and that verbs as those in (14) are rather exceptional in English. Borer does not have an explanation for these cases, but suggests in a footnote (2013, fn. 13) that there could be "a highly marked categorizing affix which is phonologically real enough, although perhaps not strictly segmental". Such an affix would not be available for roots as those in (26).

Iordăchioaia (2020) shows that V → N conversions are much more common in English than thought. On the basis of an extensive corpus research, she argues that many deverbal nouns in English are Argument Structure nouns, because in the corpus they occur with arguments, adjectives like *frequent* or *constant*, or with predicates expressing an event. She argues that this possibility is based on the type of root.

In French, deverbal nouns are also abundantly present. In a small dictionary research, I found already more than a hundred cases of deverbal nouns with argument structure (at least one argument). For this small research I searched in the online version of the French dictionary *Le Trésor de la Langue française*[3] for masculine nouns that contained the words "action" or "action" and "résultat" in their description. I checked these words in the French dictionary *Le Petit Robert* (Rey-Debove and Rey 2010) on their presence, interpretation and on their occurrence with argument structure in the examples that are given in the dictionary. All could be translated by a nominalized infinitive or a gerund.[4] A more extended research in dictionaries and corpora could provide more cases and more evidence for the Argument Structure nature of these nouns (see Sleeman 2021). For the argumentation of this paper, this small research seems, however, to suffice. Examples of Argument Structure nouns are presented in Table 1. Some correspond to the Argument Structure nouns in English listed in (14).

There are also some more archaic cases such as *le ravage d'une région par des pillards* 'the devastation of a region by looters'. Most of the nouns in Table 1 belong to the non-Latinate part of the French vocabulary, first attested in the Old French period. Some of them exist next to a suffixed alternative, with a slightly different meaning:

3 *TLFi: Trésor de la langue française informatisé*. http://atilf.atilf.fr/tlf.htm. ATILF – CNRS & Université de Lorraine.

4 Nominalized infinitives disappeared from Old French (Rochette 1988). The presence in the language of other deverbal nominalizations, overtly suffixed or not, may have played a role.

Table 1: Non-suffixed Argument Structure deverbal nouns in French.

L'abus d'autorité	**'the abuse of authority'**
l'arrêt du train	'the stopping of the train'
le calcul des dépenses	'the calculation of the expenses'
le contrôle d'une caisse	'the checking of the cash register'
le décroît de la lune	'the waning of the moon'
le don du sang	'the donation of blood'
l'échange de prisonniers	'the exchange of prisoners'
l'emploi du bois	'the use of wood'
l'envoi de troupes	'the sending of troops'
le jet de salive	'the spitting'
le maintien d'une décision	'maintaining a decision'
le mélange de divers éléments	'the mixture of various elements'
l'oubli d'un nom	'forgetting a name'
le pardon des offenses	'the forgiving of offenses'
le port d'armes	'the carrying of weapons'
le prêt de ses volumes	'the loan of his books'
le rappel d'un exilé	'the recall of an exile'
le refus des louanges	'the refusal of praise'
le support des imperfections d'autrui	'the tolerance of imperfections of others'
le transport d'un blessé	'the transport of an injured person'
le travail du bois	'woodworking'
le tri des lettres	'the sorting of letters'
le viol d'enfants	'child rape'
le vote d'une loi	'the voting of a law'

(28) a. *décroît – décroissance, décroissement*
b. *le don – la donation*
c. *le port – le portage*
d. *le transport – la transportation*
e. *le tri – le triage*
f. *le viol – la violation*

Some of these deverbal nouns bear a suffix in English, but possibly with a slightly different meaning:

(29) a. *calculation*
b. *denial*
c. *donation*
d. *employment*
e. *maintenance*
f. *refusal*

The French deverbal nouns in Table 1 are all masculine, just like the nominalized infinitive in Old French. Masculine gender is the default gender in French.[5]

Within a lexicalist approach, it has been proposed by, e. g., Zwanenburg (1993) that deverbal nouns in French like those in Table 1 contain a zero-suffix, which forms a paradigm of synonyms with overt suffixes forming deverbal Argument Structure nouns: *-ation*, *-age*, *-(e)ment*, *-ure*, Ø. In an attempt to get rid of zero-suffixes, as Borer does, I propose, however, a similar analysis as what I have proposed for nominalized infinitives to account for the abundant occurrence of Argument Structure nouns without an overt suffix in French: they are formed by a variable number of functional projections (only S-functors) above the root. They differ from nominalized infinitives in that they do not contain a functional projection for the verbal inflection, which in the case of nominalized infinitives is expressed by infinitival inflection. Since there is neither infinitival inflection, as in the case of nominalized infinitives, nor derivational inflection (a C-functor), as in the case of deverbal Argument Structure nouns like *destruction*, non-suffixed deverbal nouns simply have the form of roots. Just like nominalized infinitives, as in (24)–(25), non-suffixed deverbal nouns can have a more "verbal" or a more "nouny" interpretation. In their more verbal interpretation, there is verbal S-structure dominated by DP, while in their "nouny" interpretation as a result noun, there is simply a DP dominating the root.

Such an account for deverbal nouns has been discarded by, e. g., Fábregas (2012). Discussing the problem of counterarguments formed by deverbal nominals for Borer's Exo-Skeletal model, Fábregas (2012: 74), in the spirit of Grimshaw's Extended Projections theory, argues that "using a functional functor will give rise to ungrammaticality, 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)". Fábregas therefore proposes another alternative for deverbal nominalizations that avoids the use of zero-categories, namely spell-out of different heads at the same time as one portmanteau morpheme.

5 There are numerous feminine deverbal Argument Structure nouns in French, such as *la crainte* 'the fear', *la demande* 'the asking', *la garde* 'the keeping, conservation', *la collecte* 'the collecting', *la rencontre* 'the encounter'. It could be argued that these are formed by means of a C-suffix, *-e*. One of the reviewers objects that in these cases *-e* stands for gender and, as in the case of feminine nouns based on a participial noun like *entrée* 'entry' or *sortie* 'issue', could be seen as the exponent of a grammatical feature and not as a derivational affix. However, whereas past participle forms may inflect for gender, this is not the case for non-participial forms like *rencontre* or *demande*. Furthermore, what seemingly is an inflectional suffix may sometimes rather be analyzed as a derivational suffix, as argued by Sleeman (2013) for the Dutch suffix *-e* forming deadjectival human nouns.

It has, however, also been proposed in the literature that Grimshaw's Extended Projection theory is too strong, and that mixing of functional projections should be allowed to some extent, e. g., by Borsley and Kornfilt (1999) (cf. Alexiadou 2020, with a comparable view but taken from a slightly different perspective, see Section 3.1). Categorial mixing of functional projections, permitting the avoidance of the use of zero-suffixes, can easily be incorporated into the Exo-Skeletal model. Therefore, I propose this adaptation instead of Fábregas' solution.

In the next section, we turn to another challenge for the Exo-Skeletal model, namely suffixed A/N parallels.

4 Parallel A/N suffixes

Besides non-suffixed deverbal nouns, one of the challenges for the Exo-Skeletal model is the existence of pairs of identical adjectival and nominal suffixes. Borer (2013) refers to De Belder (2011). According to De Belder, 29, that is 20 % of the 143 categorizing affixes in Dutch, project more than one category. This is extremely common for suffixes that are ambiguous between A and N: 21 of the 29 ambiguous affixes belong to the A/N type. Borer (2013: 366) observes that this is the case in English as well, also referring to Lowenstamm (2014), occurring systematically with the suffixes *-(i)an*, *-ist*, *-ory*, and *-i* (see Section 2.2), and more idiosyncratically with *-ic* and *-ant*/*-ent*. Borer (2013: 366) acknowledges that such cases are "a challenge [...] to any labeling system which fails to capture the systematic relatedness of N and A", including the Exo-Skeletal model. She observes, however, that many instances of A/N homonymy are in fact cases of nominal ellipsis. She refers to Borer and Roy (2010), who use semantic and syntactic tests to distinguish real N from A with a null head in several languages. Of the other eight ambiguous affixes, five are prefixes. Since their categorizing function is questionable, there are only three ambiguous suffixes that are not A/N. On a total of 122 non-A/N affixes, this is a very small number. According to Borer, the overwhelming majority in English projects only one category, although there is also a relatively small number of A/N suffixes. For this reason, she rejects De Belder's theoretical solution to these cases, which consists of analyzing all "derivational" affixes as roots and categorizing them in the context of the Extended Projections that dominate them, just like conventional roots.

For the Exo-Skeletal model, A/N suffixes are a problem, because they do not belong to one category. C-functors belong to one category. For A/N suffixes it would have to be assumed that there are two parallel C-functors, one adjectival and one nominal. A model that makes use of zero-suffixes, such as Distributed Morphology, faces the same problem. Either it can be assumed that there are two

parallel A/N suffixes, dominating roots, or it can be assumed that there is a directional derivation: first a categorized suffixed is merged, and after that a zero-suffix changing the category is added. Just as in the case of the Exo-Skeletal model, the direction of derivation can be A → N or N → A.

Borer argues that the number of A/N suffixes in Dutch and English is rather small, and that it therefore does not really pose a problem for the Exo-Skeletal model. However, French also has ambiguous suffixes. Don et al. (2015) analyzed 77 suffixes of a set of 113 French suffixes. Of these 113 suffixes, those that are either extremely unproductive or have a highly specialized connotation used only in jargon, were eliminated. Of the 77 resulting suffixes, 26 are ambiguous. All of them are ambiguous between A and N, although words formed with these suffixes may also be used only as a noun or only as an adjective. Zwanenburg (1986) observes that it is difficult to determine a direction of derivation for these suffixes. In Borer's Exo-Skeletal approach, there is, however, a direction of derivation. A suffix belongs to a category and determines also the category of its complement.

Don et al. (2015) and Sleeman (2019) show that, for French, the same analysis can be proposed as the one proposed by Creemers et al. (2015) and Creemers et al. (2018) for Dutch. In the spirit of Lowenstamm (2014) and De Belder (2011), Creemers et al. assume that suffixes can be roots. They make a distinction between three types of suffixes, but for the sake of simplicity I will only present their analysis of two of the types. Just like Borer does, Creemers et al. distinguish suffixes that belong to a category. These are called Type II suffixes by Don et al. (2015). The other type, Type I suffixes, is categorially flexible. Creemers et al. argue that Type I attaches to roots and Type II to categorized complements. In French, Type I suffixes are Latinate (30), whereas Type II suffixes are non-Latinate (31). Latinate suffixes may undergo the phonological rule of Learned Backing (LB) in French (Dell and Selkirk 1978), which accounts for the variants after the slashes in (30). They also precede Type II suffixes. The properties of the two types of suffixes are schematized in Table 2. Illustrations of the properties are given in Tables 3 and 4. The tables are taken from Don et al. (2015).

(30) *-ain*/*-an*, *-el*/*-al*, *-in(e)*, *-aire*/*-ar*, *-eur*/*-or*, *-eux*/*-os*, *-ateur*, *-iste*, *-if*, *-able*[6]

(31) *-age*, *-aison*, *-té*, *-ance*, *-erie*, *-esque*, *-ois*, *-ais*[7]

6 The suffixes *-able*, *-ible* and *-uble* are not categorially flexible, but they may undergo a phonological change comparable to Learned Backing (LB): flexible → flexibilité.

7 Words ending in the suffixes *-ais* and *-ois* are adjectival and nominal at the same time: *français – un Français 'French, a Frenchman'*; *québécois – un Québécois* '(a male) from Quebec'. They behave, however, as Type II suffixes. They can be analyzed as cases of nominal ellipsis (cf. Borer and Roy 2010).

Table 2: Properties of Type I and Type II suffixes in French.

	Attach to roots	Trigger LB or affected by LB	Categorially flexible	Ordering ('<' = 'linearly precedes')
Type I	YES	YES	YES	I < II, I < I *II < I
Type II	NO	NO	NO	I < II, II < II *II < I

Table 3: Illustration of properties of Type I suffixes in French.

Suffix	Derives	Attaches to	Examples	Learned Backing?
-ain / -an	N	bound roots	*humain* 'human'	Affected by LB:
		N	*chapelain* 'chaplain'	*humain* 'human' > *humanité*
		V	*couvain* 'bee brood'	'humanity'
	A	bound roots	*humain* 'human being'	*africain* 'African' >
		N	*mondain* 'wordly'	*africanisme* 'Africanism'
		A	*hautain* 'haughty'	
-al / -el	A	bound roots	*nominal* 'nominal'	Affected by LB:
		N	*collégial* 'collegiate'	*maternel* 'maternal' >
		A	*continuel* 'continual'	*maternaliser* 'maternalize'
	N	bound roots	*corporal* 'corporal'	*actuel* 'actual' > *actualité*
				'actuality'
				culturel 'cultural' >
				culturalisme 'culturalism'
				Triggers LB:
				chœur 'choir' > *choral*
				'choral'
-(t)eur /	N	bound roots	*acteur* 'actor',	Affected by LB:
-(t)rice			*amateur* 'amateur'	*professeur* 'professor' >
-eur(-or)		N	*ambassadeur* 'ambassador'	*professorat* 'professorship'
		V	*charmeur* 'charmer'	
	A	bound roots	*attracteur* 'attractive'	
		V	*abaisseur* 'lowering'	
-eux /	N	bound roots	*taiseux* 'taciturn person'	Affected by LB:
-euse(-os)		N	*siffleux* 'whistler'	*dangereux* 'dangerous' >
		V	*boiteuse* 'a limping woman'	*dangerosité* 'dangerousness'
	A	bound roots	*nitreux* 'nitrous'	*nitreux* 'nitrous' >
		N	*joyeux* 'joyful'	*nitrosation* 'nitrosation'
		V	*boiteux* 'limping'	*adipeux* 'adipose' >
				adiposité 'adiposity'
				Triggers LB:
				vapeur 'vapour' > *vaporeux*
				'vaporous'

Table 3 (continued)

Suffix	Derives	Attaches to	Examples	Learned Backing?
-iste	N	bound roots	*graphiste* 'graphic designer'	Triggers LB:
		N	*latiniste* 'Latinist'	*criminel* 'criminal' >
		A	*spécialiste* 'specialist'	*criminaliste* 'criminalist'
		V	*arriviste* 'careerist'	*matériel* 'material' >
	A	bound roots	*alpiniste* 'alpinist'	*matérialiste* 'materialist'
		N	*latiniste* 'Latinist'	
		A	*spécialiste* 'specialized'	
		V	*arriviste* 'competetive'	

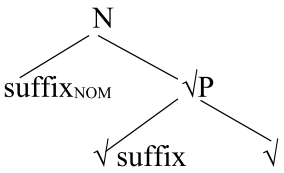
Table 4: Illustration of properties of Type II suffixes in French.

Suffix	Derives	Attaches to	Examples	Triggers LB
-age	N	N	*gazonnage* 'turf laying'	no (e. g. *fleurage*
		V	*accostage* 'docking'	'flouring')
-aison	N	N	*siglaison* 'acronymy'	no (e. g. *fleuraison*
		V	*comparaison* 'comparison'	'flowering')
-esque	A	N	*moliéresque* 'Molieresque',	no
			ubuesque 'Ubuesque'	
-eur / -euse	N	V	*voyeur* 'voyeur',	no
			chanteur 'male singer',	
			chanteuse 'female singer'	
-té	N	A	*étrangeté* 'strangeness',	no (e. g. *joyeuseté*
			beauté 'beauty'	'joyfulness')

Creemers et al.'s analysis of suffixes can easily be incorporated into the Exo-Skeletal model. Besides the roots that are already distinguished by Borer, a second type of root, viz. affixal roots, has to be distinguished. These are the type I root suffixes.[8] They can be categorially flexible, and the root that is their complement can also be categorially flexible. Borer's C-functors dominate the affixal roots. They belong to a category and determine the category of their complement. These are the type II suffixes. This is illustrated for the noun *joyeuseté* 'joyfulness' (32), where *-té* represents the C-functor while *-eux(se)* represents the root suffix:

8 Like C-functors, these roots are suffixal. This means that the combination of the two roots in (32) is derivation and not compounding.

(32)



This suggests that A/N suffixes are only an apparent problem for the Exo-Skeletal model. With a small adaptation of the model, they can easily be accounted for.

5 Conclusion

Within Distributed Morphology, zero-suffixes are used to assign a category to a root, which provides a non-directional analysis of V – N pairs like *to walk* and *the walk*. A second way of categorizing roots is by means of overt suffixes, which always belong to a category in Distributed Morphology. Categorized words can be assigned a new category by means of a zero-suffix or an overt suffix.

Borer's Exo-Skeletal model bans zero-suffixes altogether. Roots are categorized by functional projections (S-functors) or by overt derivational suffixes (C-functors). These determine the category of the root. C-functors also belong to a (lexical) category themselves, and S-functors are verbal or nominal functional projections. A further category change is possible by means of the merger of a C-functor to an S-functor or to a C-functor.

I have argued that the Exo-Skeletal model is an attractive model, because it gets rid of zero-affixes, which have been argued in the literature to be problematic, among others because of undesired proliferation. Borer (2013) mentions two important problems for her model: non-suffixed Argument Structure nouns and parallel A/N suffixes. The first type forms a problem because once verbal S-functors have been added, it is only possible to change the (verbal) category by means of an overt suffix, a C-functor. In the second case it would have to be assumed that there are two homonymous A/N C-functors.

I have shown that, in French, these two cases are far from exceptional. I have proposed a slight adaptation of the model, which can easily solve the two problems. For deverbal nominalizations I have shown that they are mixed categories, and that they can be mixed to various degrees. This holds for suffixed nominalizations, nominalized infinitives and non-suffixed nouns. These can have argument structure and other verbal properties to various degrees and they can also have

nominal properties to various degrees. I have proposed a syntactic approach to morphology in which they can be roots dominated by nominal functional projections (S-functors) or by an overt nominal suffix (a C-functor), in which verbal projections (S-functors) can intervene. Differently than in Grimshaw's (1990) Extended Projections theory, I have assumed that nominal S-functors can immediately dominate verbal S-functors, without a category change by means of an overt suffix (a C-functor) in the Exo-Skeletal model, or a zero-suffix, as in Distributed Morphology. In this way, non-suffixed deverbal nouns can be Argument Structure nouns.

For parallel A/N suffixes I have followed Creemers et al. (2015; 2018) in assuming that they are suffixal roots. They can easily be integrated into syntactic approaches to morphology, by allowing a second type of root dominating the traditional lexical one. Since, at least in French, suffixal roots are Latinate, their root-status can easily be accounted for.

In the Exo-Skeletal model, words are shown to be extremely flexible. Nominal roots can be used as mass nouns or count nouns, depending of the properties of the dominating S-functors. The root analysis of words accounts also for their categorial flexibility. In this paper I have tried to account for two other types of flexibility: mixed categories and suffixal flexibility, i. e., syntactic flexibility, by giving up Grimshaw's Extended Projections theory and with the help of suffixal roots. I have argued that, in order to account for natural language flexibility in category change, zero-categories are not necessary.

Acknowledgment: Thanks to the audience of the SLE 2020 Workshop *Derivational zero suffixes* and to the reviewers of this paper for their extensive and helpful comments. Many thanks also to the editors of this volume, Gianina Iordăchioaia and Chiara Melloni. I am also very grateful to Jan Don for discussions on this subject and support.

References

Alexiadou, Artemis. 2001. *Functional structure in nominals: Nominalization, and ergativity*. Amsterdam: Benjamins.

Alexiadou, Artemis. 2020. D vs. n nominalizations within and across languages. In Artemis Alexiadou & Hagit Borer (eds.), *Nominalization: 50 years on from Chomsky's 'Remarks'*, 87–109. Oxford: Oxford University Press.

Alexiadou, Artemis & Hagit Borer. 2020. Introduction. In Artemis Alexiadou & Hagit Borer (eds.), *Nominalization: 50 years on from Chomsky's 'Remarks'*, 1–23. Oxford: Oxford University Press.

Alexiadou, Artemis, Gianina Iordăchioaia & Florian Schäfer. 2011. Scaling the variation in Romance and Germanic nominalizations. In Petra Sleeman & Harry Perridon (eds.), *The noun phrase in Romance and Germanic: Structure, variation and change*, 25–40. Amsterdam: Benjamins.

Borer, Hagit. 2003. Endo-skeletal versus exo-skeletal explanations: Syntactic projections and the lexicon. In John Moore & Maria Polinsky (eds.), *Explanation in linguistic theory*, 31–67. Stanford, CA: CSLI Publications.

Borer, Hagit. 2013. *Taking form*. Oxford: Oxford University Press.

Borer, Hagit & Isabelle Roy. 2010. The name of the adjective. In Patricia Cabredo Hofherr & Ora Matushansky (eds.), *Adjectives*, 85–114. Amsterdam: Benjamins.

Borsley, Robert D. & Jaklin Kornfilt. 1999. Mixed extended projections. In Robert D. Borsley (ed.), *The nature and function of syntactic categories* (Syntax and Semantics 32), 101–131. Leiden: Brill.

Buridant, Claude. 2008. *La substantivation de l'infinitif en français: Etude historique*. Paris: Honoré Champion.

Chomsky, Noam. 1970. Remarks on nominalizations. In Roderick A. Jacobs & Peter S. Rosenbaum (eds.), *Readings in English transformational grammar*, 184–221. Waltham, MA: Ginn.

Creemers, Ava, Jan Don & Paula Fenger 2015. Stress-sensitivity and flexibility as a consequence of morphological structure. In Thuy Bui & Deniz Ozyildiz (eds.), *Proceedings of NELS 45*, 165–178. Amherst, MA: GLSA.

Creemers, Ava, Jan Don & Paula Fenger. 2018. Some affixes are roots, others are heads. *Natural Language and Linguistic Theory* 36. 45–84.

Dahl, Eystein & Antonio Fábregas. 2018. Zero morphemes. *Oxford research encyclopedia of linguistics*. Oxford: Oxford University Press. https://doi.org/10.1093/acrefore/9780199384655.013.592.

De Belder, Marijke. 2011. *Roots and affixes: Eliminating lexical categories from syntax*. Utrecht: LOT.

Dell, François C. & Elisabeth O. Selkirk 1978. On a morphologically governed vowel alternation in French. In Samuel Jay Keyser (ed.), *Recent transformational studies in European languages*, 1–51. Cambridge, MA: MIT Press.

Don, Jan. 1993. *Morphological conversion*. Utrecht: LEd.

Don, Jan. 2004. Categories in the lexicon. *Linguistics* 42. 931–956.

Don, Jan. 2023. Category change without overt marking. In Peter Ackema, Sabrina Bendjaballah, Eulàlia Bonet, & Antonio Fábregas (eds.), *The Wiley Blackwell companion to morphology*. Hoboken, NJ: Wiley.

Don, Jan, Petra Sleeman & Thom Westveer. 2015. Three types of suffixes in French: discarding the learned / non-learned distinction. In Björn Köhnlein & Jenny Audring (eds.), *Linguistics in the Netherlands 2015*, 33–47. Amsterdam: Benjamins.

Fábregas, Antonio. 2012. Zero nouns with and without objects. *Nordlyd* 39, 63–94.

Grimshaw, Jane. 1990. *Argument structure*. Cambridge, MA: MIT Press.

Grimshaw, Jane. 1991. *Extended Projections*. Ms., Brandeis University.

Haas, William. 1957. Zero in linguistic description. In John Rupert Firth (ed.), *Studies in linguistic analysis*, 33–53. Oxford: Blackwell.

Halle, Morris & Alec Marantz. 1993. Distributed Morphology and the pieces of inflection. In Kenneth Hale & Samuel J. Keyser (eds.), *The view from Building 20. Essays in linguistics in honor of Sylvain Bromberger*, 111–176. Cambridge, MA: MIT Press.

Iordăchioaia, Gianina. 2020. Categorization and nominalization in zero nominals. In Artemis Alexiadou & Hagit Borer (eds.), *Nominalization: 50 years on from Chomsky's 'Remarks'*, 231–253. Oxford: Oxford University Press.

Kiparsky, Paul. 1982. Lexical Morphology and phonology. In In-Seok Yang (ed.), *Linguistics in the morning calm*, 3–91. Seoul: Hanshin.

Lowenstamm, Jean. 2014. Derivational affixes as roots: Phasal spell-out meets English stress shift. In Artemis Alexiadou, Hagit Borer & Florian Schäfer (eds.), *The syntax of roots and the roots of syntax*, 230–259. Oxford: Oxford University Press.

Marantz, Alec. 1997. No escape from syntax: Don't try morphological analysis in the privacy of your own lexicon. In Alexis Dimitriadis & Laura Siegel (eds.), *Proceedings of the 21st Annual Penn Linguistics Colloquium* (University of Pennsylvania Working Papers in Linguistics), 201–225. Philadelphia, PA: University of Pennsylvania.

Marantz, Alec. 2001. Words. Paper presented at *West Coast Conference of Formal Linguistics XX*, University of Southern California, February 2001.

Myers, Scott. 1984. Zero derivation and inflection. In Margaret Speas & Richard Sproat (eds.), *Papers from the January 1984 MIT Workshop in Phonology* (MIT Working Papers in Linguistics 7), 53–69. Cambridge, MA: MIT WPL.

Panagiotidis, Phoevos. 2011. Categorial features and categorizers. *The Linguistic Review* 28. 365–386.

Rey-Debove, Josette & Alain Rey. 2010. *Le nouveau Petit Robert de la langue française*. Paris: Le Robert.

Rochette, Anne. 1988. Réseau de corrélations: sujet nul, montée et placement des clitiques et le caractère nominal des infinitives. *Revue Québécoise de Linguistique Théorique et Appliquée* 7(3). 175–192.

Sleeman, Petra. 2010. The nominalized infinitive in French: Structure and change. *Linguística: Revista de Estudos Linguísticos da Universidade do Porto* 5. 145–173.

Sleeman, Petra. 2013. Deadjectival human nouns: Conversion, nominal ellipsis, or mixed category?. *Linguística: Revista de Estudos Linguísticos da Universidade do Porto* 8. 159–180.

Sleeman, Petra. 2019. Adjectivalization in morphology. In Rochelle Lieber, Sabine Arndt-Lappe, Antonio Fábregas, Christina Gagné & Francesca Masini (eds.), *The Oxford encyclopedia of morphology*. https://doi.org/10.1093/acrefore/9780199384655.013.558.

Sleeman, Petra. 2021. Deverbal nominalizations without overt suffixation in French. *Linguística: Revista de Estudos Linguísticos da Universidade do Porto* 2021. 473–498.

Sleeman, Petra & Ana Maria Brito. 2010. Nominalization, event, aspect, and argument structure: A syntactic approach. In Maia Duguine, Susana Huidobro & Nerea Madariaga (eds.), *Argument structure from a crosslinguistic perspective*, 113–129. Amsterdam: Benjamins.

Zwanenburg, Wiecher. 1986. Nom et adjectif en français. *Recherches de Linguistique Française et Romane d'Utrecht* 5. 35–52.

Zwanenburg, Wiecher. 1993. Polysemy and homonymy of affixes: French *-et* etc. in diminutive and instrumental nouns. *Recherches de Linguistique Française et Romane d'Utrecht* 12. 101–115.