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Deverbal nominalizations without overt suffixation in French¹

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ABSTRACT.

Recent work on argument taking deverbal zero nouns in English has shown that they are more present in that language than was previously thought. In this paper the presence and productivity of argument taking zero-derived nouns in French is investigated. It is shown that to determine which nouns can count as zero nouns, several decisions have to be made. This concerns their gender (do both masculine and feminine nouns have to be included in the research?), the determination of what counts as an argument, the criteria used to determine if a noun is an argument taking noun, the form and category that the base may have. On the basis of the adopted criteria and a dictionary and database research, a corpus of French zero-derived nouns in French is composed and analyzed. The results show that, as in English, zero-derived nouns in French are more productive than was thought.

KEYWORDS.

Nominalization; zero-nouns; French; argument structure; Complex Event Nouns.

1. Introduction

Whereas Lees (1960) derived all types of nominalizations in the syntactic component of grammar, in Chomsky's *Remarks on Nominalizations* (1970) a distinction was made between gerunds like *destroying* and derived nominals like *destruction*. Chomsky argued that gerunds could still be derived in syntax, but that the place for derived nominalizations was the lexicon. This was called "the lexicalist hypothesis". Chomsky (2020), 50 years on from his *Remarks*, justifies the placement of derived nominals in

¹ This paper builds on my earlier work on nominalizations with Ana Maria Brito. I am very grateful to Ana for the interesting discussions that we had about the mixed properties of suffixed nominalizations and the problem that they raise for linguistic theories. Some of these discussions are reflected in this paper.

the lexicon as a natural consequence of the fact that in that period, in order to increase its explanatory power, syntax was already drastically simplified with respect to earlier models, such as Chomsky (1965). This holds both for Phrase Structure rules and Transformation Grammar (TG) rules. As Chomsky (2020: 28) puts it: “One category of nominalizations, gerunds, raises no problems: The rules are simple and productive, with no relevant anomalies. But application of TG-style devices to other types of nominalization was highly problematic. The rules were complex, varied, unmotivated, often idiosyncratic in form and interpretation.”

Although gerunds and derived nominalizations were separated with respect to the modules of grammar to which they were argued to belong, in the X' -schema that was introduced in Remarks, Chomsky still wanted to account for parallels in argument structure between a verb such as *destroy* and a nominalization such as *destruction*. To account for the fact that both (can) have argument structure, he proposed that they were inserted as a category-less lexical entry under X^0 (V^0 or N^0), depending on their subcategorization frame. The V^0 or N^0 head under which they were inserted would determine their pronunciation as *destroy* or as *destruction* (Alexiadou & Borer 2020). This solved the problem of the apparently mixed categorial nature of deverbal nominalizations. Allowing for argument structure, they should have been inserted under V^0 , which, in its turn, should have been inserted under NP (Sleeman to appear).

Within the framework of the Lexicalist Hypothesis, Grimshaw (1990) focuses on argument structure differences between different types of nominalizations. For Complex Event nouns she argues that they have argument structure, licensed by an event argument in their theta-grid. Result nominals only have a referential argument, R , in their theta-grid. Grimshaw develops different diagnostics to distinguish Complex Event nouns from Result nouns: some of these are obligatory arguments, *by*-phrases as arguments, no pluralization with the first type, but not with the second type. A third type, Simple Event nouns, is being characterized as expressing an event, but without argument structure.

The strict dichotomy between Complex Event nominals and Result nouns has, however been criticized by, among others, Sleeman & Brito (2010a,b). They argue that Grimshaw’s criteria for the distinction between Complex

Event nominals and Result nouns are too strict and that there are also mixed cases that are neither completely Complex Event nouns nor completely Result nouns, and that have mixed properties.

While Grimshaw (1990) argues that derived nominalizations with an overt derivational suffix such as *-ation* forming nouns such as *destruction*, can be ambiguous between a Complex Event nominal and a Result noun, she assumes that *-ing* always forms Complex Event nominals. For a third type of derived nominal, viz. zero-derived deverbal nouns, Grimshaw assumes, on the basis of English, that they are Result nouns and that there is no relation with event structure in the theta-grid.

Grimshaw's analysis of zero-derived nouns as Result nouns has been defended by, e.g., Borer (2003, 2013). According to Borer, this type of zero-derived noun is rare in English. Other linguists have argued against an analysis as Result nouns. Harley (2009) and Newmeyer (2009) provide counter-examples in English that show that zero-derived nouns can have argument structure:

- (1) *the use of instruments by professionals*

lordăchioaia (2020) argues, based on an extensive corpus research, that there are many zero-derived nouns in English that respect Grimshaw's criteria for Complex Event nominals.

This divergence in opinions between Grimshaw and Borer on the one hand, and Harley, Newmeyer and lordăchioaia on the other, may have to do with their interpretation of what counts as a CEN. In this paper I study zero-derived nouns in French. The goal of the research is to find out what criteria may help to identify them and to determine on that basis their productivity.

The paper is organized as follows. In Section 2, the distinction between Complex Event nominals, Result nouns and Simple Event nouns is discussed. In Section 3, lordăchioaia's (2020) analysis of zero-derived nouns in English is presented. In Section 4, previous literature on French zero nouns is presented. Section 5 presents the methodology for my corpus research on zero-derived nominals in French and the results of the analysis. In Section 6, the results are discussed. Section 7 ends the paper with a short summary of the results and some conclusions.

2. Three types of nouns

Grimshaw (1990) distinguishes three types of nouns: Complex Event Nouns (CENs), Simple Event Nouns (SENs) and Result Nouns (RNs). Grimshaw presents several criteria that distinguish CENs from RNs. Some of these are summarized in Table 1, on the basis of Roy & Soare (2013), who use the notion Argument Structure Nouns for CENs and Referential Nominals for Result Nouns:

TABLE 1: *properties of CENs, RNs and SENs (adapted from Roy & Soare 2013)*

	CENs	RNs	SENs
(i)	Event reading	No event reading	Event reading
(ii)	Obligatory arguments	No arguments	No arguments
(iii)	Compatible with aspectual modifiers like <i>in/for three hours</i>	Not compatible with aspectual modifiers like <i>in/for three hours</i>	Not compatible with aspectual modifiers like <i>in/for three hours</i>
(iv)	<i>Constant, frequent</i> with the singular	<i>Constant, frequent</i> possible only with the plural	<i>Constant, frequent</i> possible only with the plural
(v)	<i>By</i> -phrase is an argument	<i>By</i> -phrase is not an argument	<i>By</i> -phrase is not an argument
(vi)	Cannot be selected by predicates that require an entity noun like 'to be on the table'	Can be selected by predicates that require an entity noun like 'to be on the table'	Cannot be selected by predicates that require an entity noun like 'to be on the table'
(vii)	Can combine with a predicate like 'take place', 'last x time', and 'be interrupted'	Cannot combine with a predicate like 'take place', 'last x time', and 'be interrupted'	Can combine with a predicate like 'take place', 'last x time', and 'be interrupted'
(viii)	Can be used in PP 'during the N'	Cannot be used in PP 'during the N'	Can be used in PP 'during the N'
(ix)	Restrictions on the use of quantifiers, numerals and determiners	No restrictions on the use of quantifiers, numerals and determiners	No restrictions on the use of quantifiers, numerals and determiners

The distinction between CENs and RNs is illustrated by Roy & Soare

with examples such as those in (2)-(4). Grimshaw (1990) uses the form *examination* to illustrate CENs and the form *exam* to illustrate RNs. As Roy & Soare observe (2013: 126), “-ation nominals may denote either an event or an entity (i.e., object), which may but must not be the result of an event.”

(2) CENs

- a. *the examination of the students by the teachers* (i), (ii) and (v)
- b. *the examination *(of the students) (by the teachers) (in three hours)* (i), (ii), (iii) and (v)
- c. *the (frequent) examination of the students by the teachers* (i), (ii), (iv) and (v)
- d. **The examination of the patients was on the table.* (vi)
- e. *The destruction of the city took place at noon.* (vii)
- f. *during the examination of the paper by the committee* (viii)
- g. **several / two / these elections of John by the department* (ix)

(3) RNs

- a. (indent) *the form / the exam* (i) and (ii)
- b. *the exam *(by the teachers) *(in three hours)* (i), (ii), (iii) and (v)
- c. *the frequent exam*(s)* (i), (ii), and (iv)
- d. *The exam was on the table.* (vi)
- e. **The form took place at noon.* (vii)
- f. **during the form* (viii)
- g. *one form / that exam* (ix)

(4) SENs

- a. *the movie / the meeting / the game* (i) and (ii)
- b. *the play *(of Macbeth) *(by the actors) *(for two hours)* (i), (ii), (iii) and (v)
- c. *the frequent concert*(s) / the frequent movie*(s)* (i), (ii), and (iv)
- d. **the movie / concert / meeting was on the table* (vi)
- e. *The movie / meeting took place at noon.* (vii)
- f. *during the movie / concert / game / meeting* (viii)
- g. *many concerts / three movies* (ix)

The criteria used by Grimshaw may be too strong. First, as Roy & Soare (2013: 131) show, CENs may be ambiguous. Whereas *meeting* in (4) acts as a SEN, in (5), in which it takes a complement, it functions as a CEN, and may therefore combine with an aspectual *for*-PP:

(5) *the meeting of the president with the Prime Minister (for three hours)*

Second, the criteria given in Table 1 do not always properly distinguish between the three types of noun. As has been observed by, a.o., Sleeman & Brito (2010a,b):

(i) CENs do not obligatorily take internal arguments:

(6) *The discussion lasted two hours.*

(ii) Result nouns can optionally select an internal argument, contrary to object nouns:

(7) *La discussió de les dades es va publicar a la revista.* (Picallo 1991 for Catalan)

'The discussion of the data was published in the journal.'

(iii) Event nouns can pluralize:

(8) *Os jornalistas estavam a assistir a várias destruições de pontes, quando chegaram as tropas.* (Brito & Oliveira 1997: 61 for Portuguese)

'The journalists were watching several destructions of bridges, when the troops arrived.'

(iv) The Complex Event nominal may be preceded by an indefinite determiner:

(9) *Os jornalistas estavam a assistir a uma destruição da ponte, quando a bomba caiu.* (Brito & Oliveira 1997: 60)

'The journalists were watching a/one destruction of the bridge, when the bomb fell.'

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

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

(vi) Certain nominalizations can combine with a genitive representing the agent, even when they have an event interpretation:

- (11) *Ik heb alle uitvoeringen van Youri Egorov van het Schumann-programma bijgewoond.* (Van Hout 1991 for Dutch)
'I have attended all of Youri Egorov's performances of the Schumann program.'

Third, what may be a RNs on the basis of criterion (i) and (vi) in Table 1, may also be interpreted as a CEN. Brito & Oliveira (1997) show, for Portuguese, that a result noun (as evidenced by the type of predicate) may even be combined with a *by*-phrase expressing the agent (12) and can be used in control constructions (13). This means that such examples may also be interpreted as CENs.

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

Fourth, Meinschaefter (2016) observes that "one implication of Grimshaw's hypothesis, at least under its original formulation, is that event-denoting, argument-taking deverbal nouns may be derived only from predicates disposing of an external argument, such as causative verbs like *destroy*, but not from

others, such as certain psychological verbs and unaccusative verbs (Grimshaw 1990:120–123)". According to Picallo (1991), however, unaccusative nominals are ambiguous between a CEN and a RN reading, and may take an argument both in the event and in the result interpretation, as she shows for Catalan:

- (14) *la desaparició d'en Joan*
'the disappearance of John'

Meinschaefter (2003) assumes that participants realized with nominalizations of psych verb (in French) are arguments. She relates the realization of the arguments, such as the form of the introducing preposition, to the semantic role of the argument with respect to the base verb (subject experiencer or object experiencer) and the aspectual properties of the base verb. Since subject experiencer (ES) verbs have a stative interpretation, their subject is expressed by an 'of'-phrase and their object by a 'for'-phrase:

- (15) *l'admiration du lecteur pour ce livre*
'the admiration of the reader for this book'

Some object experiencer (EO) verbs are non-stative and atelic. With nominalizations, their semantic participants are expressed by 'of'-phrases:

- (16) a. *La fascination de l'auditoire était facile.*
'The fascination of the audience was easy.'
b. *La fascination de l'orateur m'a surpris.*
'The fascination of the speaker surprised me.'

Other EO verbs are non-stative and telic. With nominalizations, only one of the semantic participants can be realized as an 'of'-phrase. The other one is realized as a 'by'-phrase:

- (17) a. *la déception de la jeune fille*
'the deception of the young girl'
b. *la déception par le Gault Millau*
'the deception by the Gault Millau'

In Grimshaw's (1990) view, zero nouns, i.e., deverbal nouns without a derivational suffix, are RNs and not CENs. This view is also defended by Borer for English (2003, 2013). It is contested, however, by Iordăchioaia (2020), as presented in the next section.

3. Zero Nouns in English

Borer (2003) shows that $V \rightarrow N$ conversions in English such as nouns like *drive*, *walk*, *break*, as in (18), cannot be combined with complements. She argues therefore that they are RNs (which also include SENs in Borer's analysis) and not CENs:

- (18) a. **the / John's drive of this car*
b. **the / Mary's walk of this dog*
c. **the / Kim's break of the vase*

In a footnote (fn. 13) Borer (2003) observes that the generalization that $V \rightarrow N$ nominals can only function as result nouns has some counterexamples. She notes that there are at least some speakers who reject (19a-c), but that others find them acceptable. As we have seen in the previous section, 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 CENs from RNs. They are used by Borer as well.

- (19) 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*

Based on work by Harley (2009) and Newmeyer (2009), Borer (2013: 331) enumerates a longer list of deverbal CENs in English:

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

The list given by Borer (2013) in (20) contains verbs such as *change*, *release*, and *use*, illustrated in (19). In Borer's Exo-Skeletal model (2003, 2013) cases such as these cannot be accounted for, because this model does not allow for zero suffixes. Borer observes that the list is rather small and that verbs as those in (20) are rather exceptional in English.

Contrary to Borer, lordăchioaia (2020) shows that $V \rightarrow N$ conversions are much more common in English than thought. The goal of her paper is to find out which zero nouns may realize argument structure and what exactly, in the lexical semantics of their base verbs, allows CEN-formation (called Argument Structure Noun-formation by lordăchioaia). Based on the entries in the Oxford English Dictionary (OED) and on an extensive corpus research, lordăchioaia argues that many deverbal nouns in English are CENs: they occur with arguments, adjectives like *frequent* or *constant*, or with predicates expressing an event, like *witness*, or with aspectual verbs such as *resume*, *begin* and *stop*. She shows that the verbs on which the zero nouns are based are change-of-state verbs, causative or inchoative:

- (21) a. *Coast Gard begins controlled burn of oil in Gulf.*
 b. *[he] probably witnessed their murder of his mother.*
 c. *satellites have tracked the gradual rise of the world's ocean.*
 d. *The oldest most experienced workers are beginning their gradual exit from the workforce.*

Some verbs may have both an inchoative and a causative reading:

- (22) a. *what I think will ultimately lead to a complete crash of the US economy.*
 b. *investigated the deliberate crash of a Germanwings passenger jet into a mountainside.*

lordăchioaia observes that appropriate contexts may enforce CEN readings for some speakers (cf. Roy & Soare's remark with respect to example (5) in the previous section).

For nominalizations of psych verbs, lordăchioaia assumes that zero nouns built on both types of psych verbs, subject and object experiencer verbs, do not represent CENs. She argues that both are stative. Therefore, she

assumes, like Grimshaw (1990) that they only realize semantic arguments of the base, which for the derived zero nouns act as modifiers, since event structure is absent.

In the next section, I discuss some previous research on zero nouns in French.

4. Previous research on zero nouns in French

There is not much literature on zero nouns in French. Either they are discussed together with other types of nominalizations or they are excluded from such discussions. In this section I will present some of this literature.

There are two types of zero nouns in French: masculine and feminine zero nouns. Kerleroux gives the following examples of the masculine ones in (23) and the feminine ones in (24). The nouns in (23a) are derived from the *-er* conjugation class, those in (23b) from the *-ir* class (with a diphthong in the nouns), and those in (23c) from the *-re* class of verbs. Kerleroux classifies the nouns in (23a-c) and (24a) as having a stem common to inflexion and derivation. She categorizes the nouns in (23d) as being formed on an “extra stem”. She observes that the masculine ones (in 23a) are unproductive since the 17th century.

- (23) a. *change* ‘change’, *legs* ‘bequest’, *rabais* ‘discount’, *rebut* ‘waste’, *progrès* ‘progress’, *trot* ‘trot’, *port* ‘wearing, carrying’, *accord* ‘agreement’, *encart* ‘insert’, *don* ‘gift’ *abandon* ‘abandonment’, *pardon* ‘forgiveness’, *regret* ‘regret’
b. *maintien* ‘conservation’, *soutien* ‘support’
c. *débat* ‘debate’, *ébat* ‘frolic’, *rabat* ‘flap’, *combat* ‘fight’
d. *insert* ‘insert’, *tact* ‘tact’, *tract* ‘flyer’, *abstract* ‘abstract’, *concept* ‘concept’, *percept* ‘percept’, *attribut* ‘attribute’, *institut* ‘institution’, *substitut* ‘substitute’
- (24) *attaque* ‘attack’, *écoute* ‘listening’, *annonce* ‘announcement’, *commande* ‘order’, *baisse* ‘decrease’, *donne* ‘dealing’, *relâche* ‘break’, *nage* ‘swimming’

Kerleroux classifies zero nouns as in (23-24) as cases of “conversion”, i.e. deverbal nouns without overt nominal suffixation. It has been observed by Tribout (2010, 2015) that in verb / noun pairs the direction of conversion is difficult to determine (see also Knittel 2015). Tribout argues that we cannot trust “first attestation” dates in dictionaries to determine the direction of derivation. Semantic criteria may not be helpful either. Although for instrument nouns such as *scie* ‘saw’ it has been argued that they form the base for the verb *scier* ‘saw’ (following Marchand 1964 for English), it has also been argued that the instrumental noun has been derived from the verb (Corbin 1987). Tribout shows that presumed N → V conversions and V → N conversions belong to more or less the same semantic classes, such as action, result, location or instrument. For instance, the presumed N → V conversion *plumard(er)* ‘to put in a bed’ and the presumed V → N conversion *décharge* ‘garbage dump’ both have a locative meaning. For this reason, “converted” nouns are not always taken into account in studies on underived event nouns (Huyghe et al. 2017). Fradin (2014) excludes them from his study on event nouns because they do not always have an eventive meaning, as also shown by Tribout. They are also excluded by Missud, Amsili & Villoing (2020) in an automatic search for event noun forming suffixes in a massive web corpus, to determine their frequency. The authors note, however, that they should be included in follow-up research.

There are also studies in which masculine deverbal zero nouns are studied as a category. Although according to Grimshaw (1990) and Borer (2003, 2013) zero nouns in English are result nouns and therefore do not have argument structure, for French it has been assumed, just as Lordăchioaia (2020) does for English, that they are event nouns and do have argument structure. Zwanenburg (1988: 395-399), for instance, treats the zero noun *accord* ‘agreement’ as a CEN, provided with argument structure, just like the nouns *bavardage* ‘chatting’, *arrestation* ‘arrest’, *armement* ‘armament’ and *ouverture* ‘opening’. The most productive suffixes for forming event nouns are *-ion*, *-age* and *-ment*, according to Fradin (2014) and Missud et al. (2020).

Kerleroux gives the following examples for zero derived nouns:

- (25) a. *Le maintien des frontières de la République est un devoir sacré.*
'Maintaining the borders of the Republic is a sacred duty.'
- b. *Le port constant du casque lui avait occasionné une légère tonsure.*
'The constant wearing of a helmet had given him a slight tonsure.'
- c. *Le transport trop fréquent de ces dessins a causé de graves dommages.*
'The too frequent transport of these designs has caused serious damage.'
- d. *Le récit de ses malheurs lui avait pris deux jours.*
'Telling his misfortunes took him two days.'
- e. *La baisse du prix du pétrole a eu lieu au plus mauvais moment.*
'The drop in the oil price came at the worst moment.'
- f. *L'attaque de la diligence a eu lieu dans la forêt.*
'The attack on the stagecoach took place in the forest.'
- g. *L'annonce de sa mort a eu lieu hier à midi.*
The announcement of his death took place yesterday at noon.'

Knittel (2015) argues that the dynamic character of zero nouns can be shown by the combination with expressions that denote the progression of an action. She therefore analyzes the noun *vol* 'flight' as a CEN (see also Corbin 1987, according to whom the noun *vol* means 'the action of flying').

- (26) *en plein vol*
'in full flight'

Knittel (2011) gives an example for the zero noun *vol* in the interpretation of 'theft', which she classifies as an achievement (Vendler 1967):

- (27) *Le vol du tableau s'est produit à minuit.*
'The theft of the painting occurred at midnight.'

In scholarly work on deverbal nominalizations it is often shown that they can have a result reading besides an eventive interpretation (see, e.g., Meinschaefer 2016). As Tribout (2015) shows, zero nouns can also have an agentive interpretation (*éclair* 'something that lights'), a patient interpretation (*transplant* 'transplant'), an instrumental interpretation (*réveil* 'alarm clock') and a locative interpretation (*décharge* 'garbage dump'). This shows that

deverbal nominalizations can also have an entity interpretation.

It has also to be remarked that nouns with arguably are not deverbal may apparently have argument structure. This is shown for French (simple) event nouns by Huyghe et al. (2017). In (28a) the complement is an agent, in (28b) it is a patient and in (28c) it is an experiencer:

- (28) a. *le crime de Pierre*
 ‘Pierre’s crime’
 b. *le rapt de la jeune fille*
 ‘the abduction of the young girl’
 c. *la transe du shaman*
 ‘the shaman’s trance’

What this literature review shows us is, first, that there are two types of (deverbal) zero nouns, masculine and feminine, and that from the largest class of verbs in French, the verbs ending in *-er*, masculine zero nouns are apparently not derived anymore. Second, the direction of derivation is not always clear. Third, (deverbal) zero nouns may have different meanings. They can be polysemous and have an event and a result interpretation, but they can also have entity interpretations. Fourth, (simple) event nouns may seemingly take arguments as well.

In the next section I will show some results of a dictionary and corpus research that I effectuated on zero nouns in French. I focused on masculine zero nouns related to verbs. The goal of this exploratory study is, as in Iordăchioaia’s (2020) research, to investigate their occurrence in French and to characterize them.

5. A corpus research on zero nouns in French

In this subsection I present the results of my corpus research on deverbal zero nouns in French. I start with the methodology, after which the results are presented.

5.1. Methodology

As has been observed in the previous subsection, in researches on deverbal zero nouns in French feminine and masculine nouns are often not discriminated. It could, however, be the case that they are not formed in the same way. Kerleroux (2005) remarks that in masculine zero nouns the final consonant of the verbal base is often not pronounced, as for instance, in *port* ([pɔʁ]) in (23a) and (25b) and that there is nasalization of the vowel preceding the final nasal consonant, as in *pardon* ([paʁdɔ̃]) in (23a). The feminine nouns in (24) all end in a schwa. The presence of the schwa makes that the final consonant of the verbal base is pronounced: *écoute* ([ekut]). Furthermore, there is no nasalization of the final vowel of the verbal base: *donne* ([dɔn]). This suggests that the feminine forms are not really zero-derived, but that the schwa is a derivational suffix added to the verbal base, and that only the masculine forms are zero-derived nouns.

To select a corpus of masculine zero nouns in French, I made use of the online dictionary Le Petit Robert. With the help of the advanced search option, I listed all masculine nouns present in the dictionary. Out of these 19,006 masculine nouns all non-derived ones were subsequently selected that have the form of the base of a related verb that is also present in the dictionary. All archaic, technical and regional forms were not included in the corpus. I also discarded most nouns that, according to the etymological description in the dictionary, are not derived from verbs, but that were borrowed as a noun from, e.g., Latin.

For all nouns I searched for examples in Le Petit Robert, in the online dictionary Le Robert Dico en Ligne, and in the electronic database Frantext, searching only in the corpus of French texts of the twentieth and twenty-first centuries. For the nouns that were integrated in the 21st century into the Petit Robert dictionary, I searched for examples in Google.

To determine if a noun may have a CEN interpretation, I made use of the criteria presented in Sections 2 and 3, viz. the possibility of the combination with argument structure, the possible combination with a predicate that takes events as its arguments, and the possible combination with a modifier signaling the eventive interpretation of the deverbal noun. However, in Section 2 we saw that Grimshaw's criteria do not always properly distinguish

between CENs, RNs and SENs. Furthermore, we saw in Section 2 that some categories, although they may have an eventive interpretation, are excluded by the criteria. Therefore, I made use of an additional criterion, which is the possibility to replace the nominalization by a nominalized infinitive, which in modern French is only still present as a lexicalized noun, but which is still present in other European languages (Sleeman 2010; Alexiadou, lordăchioaia & Schäfer 2011), an English gerundive or a deverbal noun introduced by the prefix *ge-* in German or Dutch (*het gezang* ‘the singing’) for nouns derived from atelic verbs. By doing so I also included nouns derived from unaccusative verbs and nouns derived from psych verbs.

In this way many of the examples given in the previous section were discarded as being result nouns (RNs), simple event nouns (SENs) or entity nouns. In this way I discarded all feminine nouns in (24) and (25e-g). All nouns in (23d) were not included because according to the etymological description in *Le Petit Robert* they have been based on a Latin noun. Furthermore, they function as RNs or entities, but not as CENs. The nouns *legs*, *rabais*, *rebut* are not described as events in *Le Petit Robert*. For *progrès* the interpretation ‘action of’ is archaic and for *soutien* it is rare according to the dictionary. These five nouns seem to be RNs rather than CENs. For *legs*, *Frantext* offers an example with a complement (*acceptant le legs de ses tristesses* ‘accepting the bequest of his sorrow’), but in combination with the verb *accepter* it is difficult to replace *le legs* by a nominalized infinitive or a gerund. Although for *progrès* it may be argued that it is related to the verb *progresser*, the same reasoning as for *legs* may be applied. Furthermore, according to *Le Petit Robert*, *progresser* has been derived from *progrès*, which may indeed be the case, because *progresser* has as its synonym *faire du progrès* ‘make progress’. The deverbal nouns in (25a-d), which have a clear argument structure, were all included, as well as the noun *vol*, in (26-27), in both of its interpretations. The noun *crime* in (28a) is not deverbal. The noun *transe* in (28c) is a feminine noun. The noun *rapt* in (28b), although it seems to take a complement, was not included because it was borrowed as a noun from Latin, making the derivation from a French verb difficult to establish. The results are presented and analyzed in the following subsection.

5.2 Results

The final list contains exactly 198 nouns, which I classify as CENs, in at least one of their uses. The graph in Figure 1 represents the distribution of the data over the centuries, expressed in percentages.

FIGURE 1: *distribution of masculine deverbal zero nouns in French in percentages over centuries*

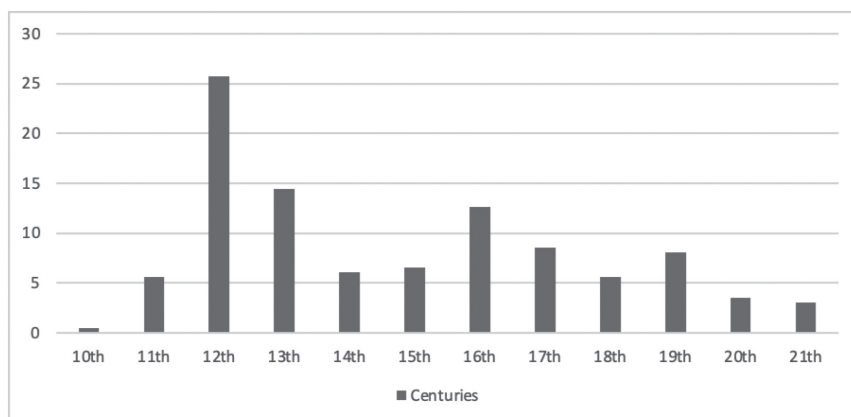


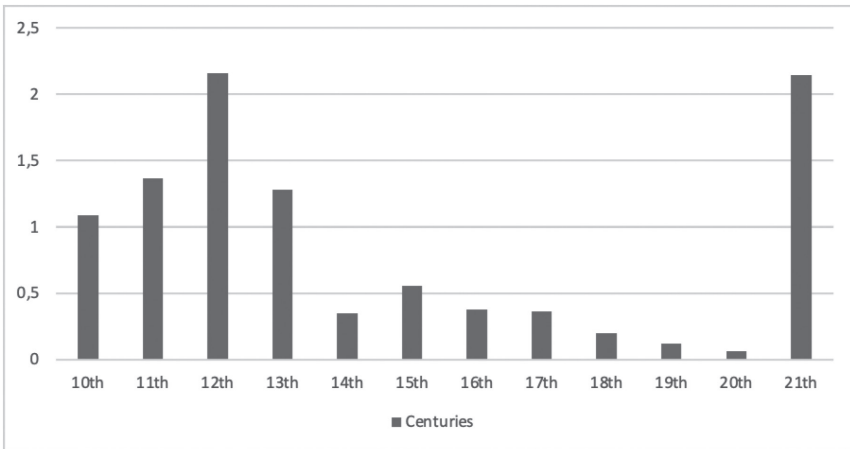
Figure 1 shows that most masculine deverbal zero nouns present in the French electronic dictionary *Le Petit Robert* were first attested in the medieval period, i.e. the Old French period, especially until the 13th century. After that period, their productivity decreased, although there were several small “revivals” in the 16th and 19th century. In the Old French period, there were several other mechanisms to derive deverbal nouns than zero-derived deverbal nouns, namely nominalized infinitives and nouns derived by means of an overt suffix. Like masculine zero nouns, the formation of nominalized infinitives became unproductive after the Old French period (Rochette 1988; Buridant 2008; Sleeman 2010). After that period deverbal nouns were essentially formed by overt suffixes, such as *-age*, *-ment* and *-ion*, which are still the most productive ones, according to Fradin (2014) and Missud et al. (2020).

Kerleroux (2005) observes that the masculine nouns derived from *-er* verbs are unproductive since the 17th century. My data show do not show

this. In fact, it is the reverse: whereas zero nouns continue to be derived from *-er* verbs after 1600, there are no nouns derived from *-ir*, *-re* or *-oir* verbs after 1600 in my corpus.

If we take into account the total numbers of words that were first attested per century in the dictionary, the relatively highest percentage of first attestations of zero-derived nouns is again in the 12th century.

FIGURE 2: percentage of masculine deverbal zero nouns in French over total number of first attestations of words per century in the Petit Robert



What Figure 2 shows is that related to the total number of first attestations of words per century, the Old French period, that is the period until 1300, was indeed the most productive period for the formation of zero-derived CENs, and that after the 17th century it becomes less productive, showing that Kerleroux' observation holds for all masculine zero nouns. Since Kerleroux' paper was published in 2005, data about the 21st century were still largely lacking. However, my data reveal that there seems to be a revival of zero-derived CENs in the 21st century. The reason for this will become clear in the classification of the data according to the morphosyntactic type of zero-derived CENs.

As in Lordăchioaia's (2020) results on English zero-derived nouns, the French zero-derived CENs can be divided into nouns derived from transitive

verbs (29) and nouns derived from intransitive verbs. The intransitive verbs contain both unergative verbs (30) and unaccusative verbs (31). The inchoative verbs in (31) also contain reflexive verbs (31c). Contrary to Lordăchioaia's data, my results do not contain a majority of nouns derived from causative and inchoative verbs.

- (29) a. *l'emploi fréquent de -ζ- par les auteurs grecs*
'the frequent use of -ζ- by the Greek authors'
b. *poursuit le massacre de millions d'hommes*
'continues the slaughter of millions of men'
c. *leur effort continu de monter plus haut sur les villes*
'their continuous effort to climb higher on the cities'
- (30) a. *le chant continu des cigales*
'the continuous singing of crickets'
b. *reproduisant le moindre bruit: le saut d'un criquet, le trot d'une souris, le glissement d'une vipère*
'reproducing the slightest noise: the jump of a cricket, the trot of a mouse, the slithering of a viper'
c. *Kment tressaille au sursaut et au cri du dormeur.*
'Kment trembles when the sleeping man jumps up and shouts.'
- (31) a. *On assiste au retour pur et simple de l'idéologie concurrentielle.*
'We are witnessing the pure and simple return of the competitive ideology.'
b. *admirant sur la plaine en feu le déclin brusque de la journée*
'admiring on the plain on fire the sudden decline of the day'
c. *Mais la fin de ce même siècle verra le discrédit graduel, dans le monde savant, de l'alchimie traditionnelle.*
'But the end of this same century will see the gradual falling into discredit, in the scientific world, of traditional alchemy.'

I included also deverbal zero nouns derived from psych verbs. They include nouns derived from both subject experiencer verbs and object experiencer verbs:

- (32) a. *sa passion de jouir du présent et son dédain de l'avenir*
'his passion for enjoying the present and his disdain for the future'
b. ... *et chaque soir, en me couchant, encore sous le charme de la représentation à laquelle je venais d'assister*
'... and every evening, when I went to bed, still under the spell of the performance that I had just attended'

The corpus also contains prefixed deverbal zero nouns, among which the nouns formed with the prefix *non-* or *re-*:

- (33) a. ... *dénoncer "les actes douteux" que ce soit le non-respect du code de la route par un camarade à vélo ou le vol à l'étalage...*
'... denounce "dubious acts" whether it is non-compliance with the highway code by a friend on a bicycle or shoplifting...'
b. *avant d'avoir procédé à un réexamen systématique de mes vues à son sujet*
'before having proceeded to a systematic reexamination of my ideas on this subject'

There are also zero nouns of which the deverbal nature is not immediately apparent. These are nouns formed by reduplication, among which onomatopoeia, which are often used in child language and child addressed speech. These have, however, been derived from verbs or from the verb *faire* 'make' + sound expressing the onomatopoeia and they can be interpreted as CENs:

- (34) a. *Quand le clic-clac de l'interrupteur et des pas de la gardienne permet enfin de remonter à la surface...*
'When the click-clack of the switch and the guardian's footsteps finally makes it possible to rise again to the surface...'
b. *Un silence poignant régnait dans la salle mystérieuse, que troublait, seul, le glou-glou frais de la fontaine.*
'A poignant silence reigned in the mysterious room, disturbed only by the cool gurgling of the fountain.'

There are also reduplications forming masculine zero nouns in my corpus that cannot be related directly to verbs, but which can be replaced by a verb, such as in the following examples:

- (35) a. *Pour y offrir des dentelles y renonce même au fric-frac...*
'To offer her lace he even gives up the break-ins...'
b. *Un peu plus tard on entendit le coïn-coïn d'une trompe*
'a little later we heard the honking of a French horn'
c. *Et le tam-tam fou de mon coeur qui me tenait éveillé de longues nuits.*
'And the accelerated beating of my heart that kept me awake for long nights.'

Starting in the 19th century, deverbal masculine zero nouns in French can also be derived from loan words, most often English verbs:

- (36) a. *l'abaissement des tarifs provoque le "rush" de la clientèle*
'the lowering of prices causes the "rush" of customers'
b. *Après l'exit des girls l'orchestre reprend...*
'after the girls' exit the orchestra resumes...'

In the 21st century, the zero-derivation of masculine nouns from English verbs or verb forms is almost the only means to derive non-suffixed deverbal nouns in French. The only other noun in my corpus is formed by reduplication, as in (37d), which is an underived form, like the English infinitive. The reduplication *dodo* is based on the verb *dormir* 'to sleep', and can be used with the verb *faire* 'do' in this meaning.

- (37) a. *et vous aider à faciliter le scroll sans fin*
'and help you facilitate the endless scrolling'
b. *permettre le podcast de toutes les émissions*
'allow podcasting of all shows'
c. *un accord permettant le replay des films*
'an agreement permitting replaying films'
d. *... le cododo ou co-sleeping fait un retour en force.*
'... co-sleeping is making a come-back'

After the presentation of the results, we will turn to a short discussion in the next section.

6. Discussion

In the previous section we have seen that although the number of deverbal masculine zero nouns in French in the 21st century is still small, relatively its percentage is as high already as in the 13th century. While the nouns are not productively formed from transitive and intransitive French verbs, two new forms of derivation have emerged: reduplication (essentially based on verbs and essentially consisting of onomatopoeia) and in the 21st century especially zero-derivation from an English verb (generally an infinitive). With these results the two research questions of this paper are answered: is masculine deverbal zero-derivation still productive in French and what are the morphosyntactic categories of the bases? It seems that there is a revival of the formation of zero nouns. The fact that their bases are loan words or reduplications seems to favor their masculine gender.

It was not always easy to determine if a noun could be included in the corpus or not. They were included if they seemed to be a CEN according to the criteria that I used to identify them in the database that I consulted. Besides the criteria presented in Sections 2 and 3 I checked if the translation by a nominalized infinitive, a gerund or a deverbal noun with the prefix *ge-* (as in German or Dutch) was possible. This extra criterion gave me a clearer indication of the CEN interpretation than Grimshaw's criteria. It has made that I also included nouns in my corpus on the basis of uses that have been qualified by Sleeman & Brito (2010a,b) as mixed. Non-derived deverbal nouns provide additional support for their claim that there is no strict dichotomy between CENs and RNs.

In my corpus I have also included zero nouns derived from unaccusative verbs and psych verbs. This means that I consider their semantic participants to be arguments, and that therefore the zero nouns in my corpus can all be considered to be Argument Structure nouns, a notion that has also been used in the literature instead of CENs. This implies that in my analysis a genitive phrase or a possessive adjective may be interpreted as an external

argument (agent, experiencer, source) rather than as a possessor, that is as a semantic participant only without argument status.

This is an exploratory study. More research is needed to check the number of occurrences in French and verify if they really have argument structure in at least one of their interpretations.

7. Conclusion

The goal of this paper was to verify if the formation of masculine zero-derived nouns in French is still productive, and if it is, in what form. I hope to have shown that, although this type of nouns apparently “retired”, its formation is still productive, although in a different form. Its most productive forms are based on reduplications, among which onomatopoeia, also present in child language and child addressed speech, and especially on English, creating word forms that are a mix of Romance and Germanic.

Based on Sleeman & Brito (2010a,b) and Meinschaefer (2003) and because of the fact that I allowed English verbs and reduplications as bases, I have been rather liberal with respect to the inclusion of zero-derived nouns within the group of CENs, which may be subject to discussion. This is an exploratory study, which means that a broader investigation is needed to verify the results of this paper. I leave this for future research.

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