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Nominalization, verbalization or both? Insights from the directionality of noun-verb conversion in French

Abstract: Nominalization in French can be done by means of conversion, which is characterized by the identity between the base and the derived lexeme. Since both noun→verb and verb→noun conversions exist, this property raises directionality issues, and sometimes leads to contradictory analyses of the same examples. The paper presents two approaches of conversion: derivational and non-derivational ones. Then it discusses various criteria used in derivational approaches to determine the direction of conversion: diachronic ones, such as dates of first attestation or etymology; and synchronic ones, such as semantic relations, noun gender or verb inflection. All criteria are evaluated on a corpus of 3,241 French noun~verb pairs. It is shown that none of them enables to identify the direction of conversion in French. Finally, the consequences for the theory of morphology are discussed.

Keywords: conversion, directionality, historical criteria, synchronic criteria, French, paradigmatic morphology

1. Introduction

In French, as in many languages, verbs can be nominalized by means of different suffixes. The most frequent ones are *–ion* (e.g. DIVISION 'division' from DIVISER 'to divide'), *–age* (e.g. LAVAGE 'washing' from LAVER 'to wash') and *–ment* (e.g. CHANGEMENT 'change' from CHANGER 'to change'). But the nominalization of a verb can also be done with a zero suffix as can be seen with the examples in (1).

(1) a. MARCHER 'to walk' → MARCHE 'a walk'
b. ATTAQUER 'to attack' → ATTAQUE 'an attack'
c. OUBLIER 'to forget' → OUBLI 'forgetfulness'

Cases such as in (1) have long been called *dérivation régressive* 'regressive derivation' because of the deletion of the verb's *–(e)r* ending (see Nyrop 1936). However, this ending is a mere inflectional marking on the infinitive form of the verb and plays no role in the derivation (it is also deleted before suffixes such as *–ion, –age* and *–ment*). In more recent literature, nouns in (1) are referred to as *zero derivation/zero suffixation* (Dubois 1962) or *conversion* (Corbin 1987; Kerleroux 1996, 1999; Fradin 2003). The present study will use the latter term and focus on verb→noun conversion like the examples in (1) compared to noun→verb conversion as illustrated by the examples in (2).

 https://doi.org/10.3726/zwjw.2020.02.10

(2) a. COLLE 'glue' → COLLER 'to glue'
b. POIVRE 'pepper' → POIVRER 'to pepper'
c. SINGE 'ape' → SINGER 'to ape'

Conversion is a widely discussed phenomenon that is usually defined as the change of category of one lexeme without any change in its form. Because there is no change in the form, conversion raises specific issues regarding the direction of the derivation, as it has already been noticed by many authors (Marchand 1963, 1964; Kerleroux 1996; Balteiro 2007; Rodrigues Soares 2009, among others). Indeed, since the lexemes involved in conversion are identical, one cannot formally determine which one is the base and which one is the converted lexeme. Moreover, this sometimes leads to contradictory analyses of the same pairs. For instance, the noun~verb[1] pairs in (3) are analysed by Adouani (1989) as cases of verb→noun conversion, whereas Labelle (1992) considers them to be noun→verb conversions.

(3) a. CHASSE 'hunting' ~ CHASSER 'to hunt'
b. DANSE 'dance' ~ DANSER 'to dance'
c. GUIDE 'guide' ~ GUIDER 'to guide'

The aim of the present study is to discuss this directionality issue and quantify the different problems it can raise on the basis of a corpus of French noun~verb conversion pairs. Next section will outline different approaches to conversion with respect to directionality. Sections 3 and 4 will discuss various criteria to determine the direction of conversion. Finally, section 5 will draw out theoretical implications and conclusions will be presented in section 6.

2. Different approaches to conversion

There are two different theoretical ways to deal with the directionality problem: the first one is to postulate no derivational relation between the noun and the verb, so that neither derives from the other. The second one is to assume a derivational relation between lexemes and to identify criteria in order to determine the direction of the derivation. Both approaches are found in the literature.

Studies postulating a non-derivational relation are found in diverse frameworks but most of them share the common assumption of underspecified categories. For example, the analysis by Farell (2001) is carried out within the frameworks of Cognitive Grammar (Langaker 1987,

1 Throughout the article, conversion pairs will be presented as "noun~verb pairs" when the direction of the conversion is either not relevant or unknown.

1991) and Construction Grammar (Goldberg 1995) and relies on the underspecification of categories. According to Farrell, the meanings of words are schematic concepts compatible with both nouns and verbs and the nominal or verbal aspects of their meaning is given by the morphosyntactic context in which they appear. *Bag* and *kiss*, for instance, are neither nouns nor verbs but have a conceptual structure compatible with the meaning of both an event and a thing. Thus, according to Farrell, since words do not have categories, there is no rule deriving a noun from a verb or a verb from a noun. Barner and Bale (2002) is another study arguing for category underspecification, which relies on earlier assumptions in the Distributed Morphology framework (Halle and Marantz 1993, Marantz 1997; cf. Borer 2013). According to Barner and Bale, words derive from lexical roots that are underspecified with respect to categories. Roots are inserted into syntax under functional heads that give the nominal or verbal status to words. Thus, according to the authors, no noun is derived from verb or vice-versa, and there is no need for conversion rules.

To a certain extent, these analyses relying on category underspecification solve the problem of directionality: because there is no derivation, there is no direction. However, underspecified categories have been criticized by different studies. For instance, according to Croft (1991), words have an inherent category that is defined by two factors: their semantic class and their pragmatic function. Prototypically, nouns are words that denote an object and their pragmatic function is the reference, adjectives denote properties and their pragmatic function is to modify, while verbs denote an action and allow for predication. While the pragmatic function could be an effect of the syntactic context, the semantic class of a word does not, in Croft's view, depend on the context. According to the author, words bear a category outside any syntactic context. Don (2004) has also argued against the category underspecification in Dutch. In this language, nouns and verbs have phonological properties that distinguish them very clearly. The syllabic structure of nouns is more complex than that of verbs, which allows speakers to identify the category of a word, even outside any syntactic context. Moreover, Don ran an experiment on nonsense words that confirm speakers' ability to classify words as nouns or verbs according to their syllabic structure. In a more recent study on English, Lohmann (2017) also argues for a lexical specification of categories. The author tested various phonological properties of unambiguous nouns and verbs taken from the Celex database, such as the word length, syllabic complexity, word onset complexity, vowel height and backness, types of consonants. Results reveal that nouns and verbs differ in many phonological dimensions: of fifteen variables that have been tested, thirteen significantly allow for a distinction between nouns and verbs. All these studies question the validity of underspecified categories,

and consequently, the validity of a non-derivational relation between nouns and verbs. They rather argue for fully specified lexemes with respect to categories and thus, for a derivation from one lexeme to another.

Just like non-derivational approaches, derivational approaches to conversion are found in various frameworks: in structuralist works such as Jespersen (1942) or Bally (1944) for French, in transformational analyses such as Marchand (1963, 1964), Dubois (1962), or in Distributed Morphology (Harley 2005), but also in cognitive analyses such as those by Dirven (1988, 1999) or Labelle (1992, 2000), and in Lexemic Morphology such as Aronoff (2007), Kerleroux (1996, 1999). In these analyses, the assumption of a derivation arises from the comparison with affixation. Indeed, many studies claim that the meanings of converted words are similar to those of affixed ones (see for example Marchand 1963; Dubois 1962; Corbin 1976; Plag 1999; Don 2005) and because affixation overtly marks the derivation, the same principle is applied to conversion. In derivational analyses, the identification of the basic lexeme and the derived one is therefore a crucial issue. Approaches differ according to the authors. Hale and Keyser (1993) or Harley (2005), for instance, within the framework of Distributed Morphology, postulate that verbs always derive from nouns. This assumption, however, cannot hold in situations where the verb already derives from another lexeme. For example, in French, in the pair ALLONGE 'extension'~ALLONGER 'to lengthen', the verb already derives from the adjective LONG 'long' with the meaning 'to make longer', so that it cannot derive from the noun. Conversely, the noun cannot derive from the adjective because the prefix *a–* cannot form nouns in French. This shows that the directionality problem cannot be solved by postulating a unique direction for all cases. Analyses that assume a derivation from one lexeme to the other must set criteria to determine the direction of the derivation.

Various criteria have been proposed in the literature in order to determine the direction of conversion. They are of two types: either historical or synchronic. The next sections will present both types of criteria and evaluate them on a corpus of 3,241 noun~verb conversion pairs in French. These noun~verb pairs have been gathered from two French dictionaries: *Trésor de la Langue Française informatisé* (hereafter *TLFi*) and *Petit Robert Électronique*.

3. Historical criteria

Historical criteria are dates of first attestation and etymology. From a theoretical point of view, the use of such criteria has often been criticised. In French, Corbin (1976), for instance, disapproves the use of historical criteria because, according to her, it blurs the distinction between synchronic and

diachronic analyses. Disregarding the theoretical aspect of the question, this section aims at assessing the reliability of both criteria on empirical grounds and at quantifying cases where they can be useful or must be ruled out. In order to evaluate the criteria, a random sample of 15% of the whole dataset has been extracted. This sample gathers 483 noun~verb pairs. The date of first attestation and the etymology of each noun and verb in the sample have been collected from the reference dictionary of etymology for French: the *Dictionnaire Historique de la Langue Française* (hereafter *DHLF*) and from the historical section of the *TLFi* when needed.

3.1. Dates of first attestation

Dates of first attestation give a direction to the derivation for 463 pairs, that is, for 96% of the data. The lexeme that is attested first is considered to be the base of the conversion. According to dates, 331 pairs are noun→verb conversions and 132 are verb→noun conversions. Only 20 pairs cannot be determined by using dates. Examples are given in Table 1. In these particular cases, the direction cannot be decided because either both lexemes are attested during the same year, or the dates are not accurate enough. For instance, COMPTE and COMPTER are both attested during the year 1100. As for BAGUE and BAGUER, the datation of the verb is not accurate enough to know if it appeared before or after the noun.

This kind of problems has already been noticed by Marchand (1963). As they concern only a few pairs (4% of the data) one may think that dates make a good criterion. However, using dates is problematic because of their lack of reliability. Indeed, Corbin has pointed out in different works (particularly in Corbin (1976) and Corbin (1987)) that they highly depend on chance. Moreover, as it has already been noticed by Tournier (1980) and Balteiro (2007), the minimum number of years between the two dates for the interval to be reliable is debatable.

Tab. 1: Examples of indeterminacy due to first attestation.

Noun	**1st attestation of noun**	**Verb**	**1st attestation of verb**
BAGUE ‘ring’	1416	BAGUER ‘to ring’	15th century
COMPTE ‘count’	1100	COMPTER ‘to count’	1100
CONJECTURE ‘conjecture’	1246	CONJECTURER ‘to conjecture’	13th century
PAGNOT ‘bed’	end of 19th century	PAGNOTER ‘to go to bed’	1859
PROFIL ‘profile’	1621	PROFILER ‘to profile’	1621
TRACE ‘mark’	1120	TRACER ‘to draw’	1120

More importantly, dates of attestation raise a problem never discussed so far: they are sometimes inconsistent with the morphological construction of lexemes. For example, LOUANGER 'to commend' is attested in 1155 and LOUANGE 'praise' in 1160. According to these dates, the pair should thus be a verb→noun conversion. However, the noun LOUANGE already derives from the verb LOUER 'to praise' by means of the old suffix *–ange*, just like VIDANGE 'emptying' derives from VIDER 'to empty' or MÉLANGE 'mixing, mixture' from MÊLER 'to mix'. Moreover, there is no suffix *–anger* that could form a verb out of a verb. Therefore, the morphological analysis of the pair indicates a noun→verb conversion (LOUER →)LOUANGE→LOUANGER, in contradiction with the chronological analysis. The problem is similar with CHARROI 'convoy, carting' and CHARROYER 'to carry along'. Since the noun is first attested in 1150 and the verb in 1225, the pair should be a noun→verb conversion. Yet, the verb morphologically derives from the noun CHAR 'cart' by means of the suffix *–oyer*, like FESTOYER 'to feast' from FÊTE 'party', GUERROYER 'to wage war' from GUERRE 'war', FOUDROYER 'to strike' from FOUDRE 'lightning' etc. The morphological analysis thus indicates a verb→noun conversion (CHAR→)CHARROYER→CHARROI, in contradiction, once again, with the chronological analysis. This inconsistency between the morphological analysis and the attestation of lexemes is not specific to conversion and can be observed with suffixation too. For instance BIFFURE 'crossing-out', which derives from the verb BIFFER 'to cross out' with the suffix *–ure*, is attested in 1580 while the base verb is attested in 1584. In the case of suffixation, we can doubt that we would put more trust in dates than in the morphological construction. Therefore there is no reason to do it for conversion.

To conclude, even if dates of first attestation give a direction to the conversion in most cases, they raise significant problems. They are not reliable: neither theoretically, because they depend on chance; nor empirically because we cannot assess what would be a reliable interval between two dates and because they sometimes contradict morphology.

3.2. Etymology

According to Balteiro (2007), the etymology provided by dictionaries is the best criterion to assess the directionality of conversion. When applied to the sample under study, the reference dictionary of etymology for French gives a direction to 387 pairs, *i.e.* 80% of the data. According to etymology, 278 pairs are noun→verb conversions and 109 are verb→noun. Unlike dates of attestation, etymology is always consistent with the morphological analysis. For each pair, the *DHLF* gives the etymology of the lexeme that is supposedly the base of conversion, and indicates this base as the etymology of the supposedly

converted lexeme, as shown in Tables 2 and 3. It seems that, at least for the supposed derived lexeme, the difference between a morphological and an etymological analysis is blurred, so that, from a theoretical and methodological point of view, we can question the boundary between the two domains.

Tab. 2: Noun→verb conversions according to etymology.

Noun	**Etymology of noun**	**Verb**	**Etymology of verb**
CENTRE 'center'	Latin *centrum*	CENTRER 'to center'	derived from *centre*
COTON 'cotton'	Arabic *qutun*	COTONNER 'to cover with cotton'	derived from *coton*
ENTHOUSIASME 'enthusiasm'	Greek *enthousiasmos*	ENTHOUSIASMER 'to fill with enthusiasm'	derived from *enthousiasme*
GAZON 'turf'	Francique ∘*waso*	GAZONNER 'to grass over'	derived from *gazon*
TAG 'tag'	English borrowing	TAGUER 'to tag'	derived from *tag*

Tab. 3: Verb→noun conversions according to etymology.

Verb	**Etymology of verb**	**Noun**	**Etymology of noun**
AMBLER 'to amble'	Old Provençal *amblar*	AMBLE 'amble'	deverbal of *ambler*
ANNONCER 'to announce'	Latin *adnunciare*	ANNONCE 'announcement'	deverbal of *annoncer*
EMBARRASSER 'to embarrass'	Spanish *embarazar*	EMBARRAS 'embarrassment'	deverbal of *embarrasser*
FLIPPER 'to freak out'	from English *to flip*	FLIP 'anguish'	from *flipper*
LAYER 'to cut a path'	Francique *lakan*	LAIE 'path'	derived from *layer*

In her study, Balteiro (2007) only took into account data that are similar to situations illustrated in Tables 2 and 3. That explains why she considers etymology to be the most reliable criterion. However, as already noticed by Marchand (1963), besides these situations there are cases where etymologies do not allow to determine the direction of the conversion. These cases represent 96 pairs, that is 20% of the sample dataset. Unlike cases illustrated in Tables 2 and 3, for these pairs the *DHLF* provides an etymology for both lexemes, so that none seems to derive from the other. Examples of such cases are given in Table 4.

Tab. 4: Unknown directionality according to etymology.

Noun	Etymology of noun	Verb	Etymology of verb
ARGUMENT 'argument'	Latin *argumentum*	ARGUMENTER 'to argue'	Latin *argumentari*
BAN 'exile'	Francique *ban*	BANNIR 'to banish'	Francique ∘*bannjan*
COACH 'coach'	English word	COACHER 'to coach'	from English *to coach*
FORGE 'forge'	Latin *fabrica*	FORGER 'to forge'	Latin *fabricare*
SOLDE 'balance'	Borrowed from It. *saldo*	SOLDER 'to settle'	Borrowed from It. *saldare*

This kind of situation, where both the noun and the verb were inherited from Latin, Greek or old French, or borrowed from another language, seems to be rather frequent according to the information collected on the sample (20% of the data). Yet, even if lexemes are inherited or borrowed by pairs, there can still be a morphological relation between them that is perceptible for speakers. For example, ARGUMENTER 'to argue' and ARGUMENTATION 'arguing, reasoning' have both been inherited from Latin (the verb comes from the latin verb *argumentari* and the noun from the latin noun *argumentatio)*, but they display in contemporary French the same kind of morphological relation as between NATIONALISER 'to nationalise' and NATIONALISATION 'nationalisation' that were both coined in French: a relation between a verb and its deverbal action noun suffixed with *–ation*. This shows that having an etymology does not mean that a morphological analysis is not possible. More generally, the example of ARGUMENTER and ARGUMENTATION reveals that etymology and morphology do not have the same goals: etymology studies the history, the genealogy of words, while morphology analyses the morphological relations between lexemes in a given state of a language. Since they do not have the same purpose, etymology may not be a good tool for a morphological analysis, including the case of conversion.

3.3. Conclusion on historical criteria

As it has been argued, even when it can provide a direction, historical information is not reliable to decide on the directionality of conversion. On the one hand, dates of first attestation are not always accurate enough and often contradict the morphological analysis of lexemes. On the other hand, etymology is of no help when both lexemes were borrowed or inherited together.

Another more important, yet never discussed, problem arises when these two historical criteria are compared. Indeed, the analyses provided by dates and etymology are sometimes contradictory. For example, from a chronological point of view, the pair AIDE 'help'~AIDER 'to help' can be considered to be a noun→verb conversion because the noun is attested before the verb, as can be seen in Table 5. However, according to the etymologies provided in Table 6, it is a verb→noun conversion because the verb comes from the Latin *adjutare* while the noun comes from the verb. The problem is similar with RIME 'rhyme'~RIMER 'to rhyme': according to the attestation dates it is a verb→noun conversion because the verb is attested first, but it is a noun→verb conversion if we rely on etymology because the noun comes from the Latin *glosa* while the verb derives from the noun. Table 7 provides examples of such inconsistencies between the two types of analysis.

Tab. 5: Dates of first attestation of certain lexemes.

Noun	**1st attestation of noun**	**Verb**	**1st attestation of verb**
AIDE 'help'	842	AIDER 'to help'	10th century
CHARROI 'convoy, carting'	1150	CHARROYER 'to carry along'	1225
GLOSE 'commentary'	1175	GLOSER 'to annotate'	1130
LOUANGE 'praise'	1160	LOUANGER 'to commend'	1155
REGARD 'look'	980	REGARDER 'to look'	1080
RIME 'rhyme'	1160	RIMER 'to rhyme'	1119

Tab. 6: Etymology of lexemes in Table 5.

Noun	**Etymology of noun**	**Verb**	**Etymology of verb**
AIDE	derived from *aider*	AIDER	Latin *adjutare*
CHARROI	derived from *charroyer*	CHARROYER	derived from *char*
GLOSE	Latin *glosa*	GLOSER	derived from *glose*
LOUANGE	derived from *louer*	LOUANGER	derived from *louange*
REGARD	deverbal from *regarder*	REGARDER	from *garder* with prefix *re-*
RIME	lat. *rhythmus*	RIMER	derived from *rime*

Tab. 7: Contradictory analyses according to dates and etymology.

Noun	Verb	Direction according to dates	Direction according to etymology
AIDE	AIDER	noun→verb	verb→noun
CHARROI	CHARROYER	noun→verb	verb→noun
GLOSE	GLOSER	verb→noun	noun→verb
LOUANGE	LOUANGER	verb→noun	noun→verb
REGARD	REGARDER	noun→verb	verb→noun
RIME	RIMER	verb→noun	noun→verb

These examples of inconsistency between dates and etymology raise a tricky issue: if we want to use historical information, we will have to make a choice between the two criteria in cases of contradictory analyses. Yet, there seems to be no obvious reasons to favour one criterion over the other.

4. Synchronic criteria

Marchand (1963, 1964) is the first to propose systematic synchronic criteria in order to determine the direction of conversion in English. These criteria are the following: comparison with affixation, semantic dependency of one lexeme on the other, frequency and semantic range of lexemes, semantic patterns between lexemes, phonetic shape, morphological types of lexemes and stress patterns. These criteria have been discussed by many studies on conversion, and some of them have been ruled out as not being operative. See for instance Sanders (1988) for a criticism of the comparison with affixation, Ljung (1977) for the rejection of the semantic dependency and the semantic range. Stress patterns have been described as a reliable criterion by Kiparsky (1997) in English and by Rodrigues Soares (2009) in Portuguese, but it is of no help in French because there is no word stress difference between nouns and verbs. Semantic patterns between lexemes is the most widely used criterion and will be discussed in the following section. Other criteria have been proposed in diverse studies on different languages. For instance Don (2004) has claimed that noun gender and verb inflection can determine the directionality in Dutch. Similarly, Rodrigues Soares (2009) argues that certain thematic vowels on verbs indicate the direction of conversion in Portuguese. Building on these studies, the following subsections will evaluate these criteria on French.

4.1. A reference database of 626 directional noun~verb pairs

In order to be sure that these criteria can help to determine the direction of conversion, they must be evaluated on conversion pairs the directionality of

which is certain. To obtain these pairs, a morphological criterion was first applied, following Rodrigues Soares (2009): if one lexeme already derives from another by other means than conversion, then it is the base of conversion. For example, for the pair PARLEMENT 'parliament'~PARLEMENTER 'to negotiate', the morphological analysis gives the result in (4a): since the noun PARLEMENT already derives from the verb PARLER 'to talk' by means of the suffix *–ment* and with the meaning 'group of persons who talk' (just like GOUVERNEMENT 'government' is the 'group of persons who govern'), then it is the base of the conversion and the verb is derived. In the pair RAPPEL 'recall'~RAPPELER 'to call back', the morphological analysis gives the result in (4b): the verb RAPPELER already derives from the verb APPELER 'to call' by means of the prefix *r(e)–*, which forms verbs out of verbs, so that RAPPELER is the base and RAPPEL is the converted lexeme.

(4) a. PARLER 'to talk' → PARLEMENT 'parliament' (lit. 'group of persons who talk') → PARLEMENTER 'to negotiate' (lit. 'to act like the parliament')
b. APPELER 'to call' → RAPPELER 'to call back' → RAPPEL 'recall'

This morphological analysis has been applied to each lexeme of the corpus. According to it, the directionality of conversion can be decided in 626 pairs: 460 are noun→verb conversions and 166 are verb→noun. Examples are given in Table 8.

Tab. 8: Examples of directional pairs.

N→V conversion	BARRICADE 'barricade' > BARRICADER 'to barricade'
	GRILLAGE 'fence' > GRILLAGER 'to fence'
	RATURE 'crossing-out' > RATURER 'cross out'
	RÈGLEMENT 'rules' > RÈGLEMENTER 'to regulate'
V→N conversion	DÉCHARGER 'to unload' > DÉCHARGE 'dump'
	DÉGELER 'to thaw' > DÉGEL 'thaw'
	ÉPURER 'to refine' > ÉPURE 'sketch'
	RÉEXAMINER 'to reexamine' > RÉEXAMEN 'reexamination'

In the remainder of this section, three synchronic criteria will be evaluated on the basis of these 626 pairs: semantic patterns in 4.2., noun gender in 4.3. and verb inflection in 4.4.

4.2. Semantic patterns

Marchand (1964) suggests that semantic patterns between nouns and verbs, such as "act of V-ing", "to use N" etc., can determine the direction of conversion. This synchronic criterion is most often used by linguists when they decide

on the direction of conversion. In French for instance, it is used by Corbin (1987) and Kerleroux (1996). Corbin (1987) analyses the pair VOL 'flight'~VOLER 'to fly' as verb→ noun conversion because VOL can be defined as "action de voler" 'act of flying', which instanciates the "act of V-ing" pattern. Although this criterion is often used, its practical application has never been measured. It can be done by listing all patterns in both directions and comparing them.

Thus, in order to evaluate the usefulness of this criterion, the semantic relation between noun and verb has been analysed for the 460 noun→verb and the 166 verb→noun pairs of the directional database. The classification of the semantic patterns for converted verbs builds on that provided by Plag (1999), to which 2 patterns have been added: a causative one and a pattern for verbs of feeling. Overall, ten different semantic patterns have been observed. They are provided in Table 9 with examples. As for converted nouns, the list of semantic patterns comes from Plénat (2005). Six different patterns have been observed, as indicated in Table 10. Both classifications have been applied to all directional pairs with the help of the definitions found in the two dictionaries: *TLFi* and *Petit Robert Électronique*.

Tab. 9: Semantic patterns for noun→verb conversions.

Pattern	**Name**	**Example**
put in/into N	locative	REMISER = to put into the REMISE ('shed')
put N in/on	ornative	CARTONNER = to put CARTON ('cardboard') on something
remove N	privative	ŒILLETONNER = to remove the ŒILLETON ('buds)'
do/perform N	performative	AUBADER = to do a AUBADE ('dawn serenade')
produce N	resultative	RATURER = to produce a RATURE ('crossing-out')
act/be like N	similative	PARLEMENTER = to act like the PARLEMENT ('parliament')
use N	instrumental	TÉLÉPHONER = to use the TÉLÉPHONE ('phone')
be N	stative	PRÉLUDER = to be a PRÉLUDE ('prelude')
cause N	causative	CONFUSIONNER = to cause CONFUSION ('confusion')
feel N	feeling	COMPASSIONNER = to feel COMPASSION ('compassion')

Tab. 10: Semantic patterns for verb→noun conversions.

Pattern	**Name**	**Example**
act of V-ing	action	RAPPEL = act of RAPPELER ('call back')
result of V-ing	result	AMAS = result of AMASSER ('amass')

the one that V-s	agent	MARMOTTE = animal that MARMOTTER ('mutter')
what is V-ed	patient	DÉBOURS = what is DÉBOURSER ('spend')
object to V	instrument	RÉVEIL = object to RÉVEILLER ('wake up')
place where one V-s	location	DÉCHARGE = place where one DÉCHARGER ('unload')

As can be seen by comparing the semantic patterns observed for the two types of conversions, many patterns in one direction have a counterpart in the other direction. Indeed, except for 'what is V-ed', every verb→noun pattern has a reverse noun→verb pattern, as is summarised in (5).

(5) a. do/perform N ↔ act of V-ing
b. produce N ↔ result of V-ing
c. act like N ↔ the one that V-s
d. use N ↔ object to V
e. put in(to) N ↔ place where one V-s

Because of these reverse semantic patterns, all conversion pairs that involve one of the patterns given in (5) can almost always be analysed in both directions, as shown in Table 11. Indeed, from a semantic point of view, each pair in the table can either be analysed as noun→verb conversion or as verb→noun conversion. For each one, the pattern noted in bold fonts is the one whose direction is made certain by the morphological analysis.

Tab. 11: Reverse semantic patterns.

N~V pair	N→V pattern	V→N pattern
AUBADE~AUBADER	**do a AUBADE 'serenade'**	act of AUBADER 'serenade'
RAPPEL~RAPPELER	do a RAPPEL 'recall'	**act of RAPPELER 'call back'**
RATURE~ RATURER	**produce a RATURE 'crossing-out'**	result of RATURER 'cross out'
AMAS~AMASSER	produce a AMAS 'heap'	**result of AMASSER 'amass'**
PARLEMENT~ PARLEMENTER	**act like a PARLEMENT 'parliament'**	the one that PARLEMENTER 'negotiate'
MARMOTTE~ MARMOTTER	act like a MARMOTTE 'marmot'	**the one that MARMOTTER 'mutter'**
TÉLÉPHONE~ TÉLÉPHONER	**use a TÉLÉPHONE 'phone'**	object to TÉLÉPHONER 'call'
RÉVEIL~RÉVEILLER	use a RÉVEIL 'alarm clock'	**object to RÉVEILLER 'wake up'**
REMISE~REMISER	**put into a REMISE 'shed'**	place where to REMISER 'put away'
DÉCHARGE~ DÉCHARGER	put into a DÉCHARGE 'dump'	**place where to DÉCHARGER 'unload'**

This study of the semantic patterns carried out on 626 conversion pairs has revealed that in most cases the semantic relation between the noun and the verb does not allow to decide on the directionality of conversion because of reverse semantic patterns. A few patterns seem to be reliable, though, because they have no counterparts. For instance, within verb→noun patterns, only the patient one (see DÉBOURS 'disbursement' in Table 10) seems to have no counterpart in the other direction. However, this pattern is very uncommon: it was observed in only 8 pairs only out of 166, that is, less than 5% of the data. Moreover, it could also have the ornative or instrumental patterns as counterparts. As regards noun→verb conversion, the ornative, privative, causative, stative and feeling patterns could be reliable indications of the directionality because they seem to have no reverse pattern. However, the privative pattern was observed only once and therefore is not very helpful with respect to directionality. Causative, stative and feeling cases could probably be merged with the performative pattern. Moreover, they are the least common patterns in the subset (23 pairs out of 460, *i.e.* 5% of the data) together with the privative one. The only pattern that could be a reliable clue for the directionality is the ornative one that has been observed in 58 pairs, that is 12.6% of the data. However, ornative verbs are often merged with instrumental verbs because they imply the use of the object denoted by the base noun. For example, TO SALT can be analysed as an ornative verb with the pattern 'put salt in/on'. But it can also be analysed as an instrumental verb that instanciates the pattern 'use the salt'. This is the solution that Aronoff (1980) recommends.

The analysis and comparison of all semantic patterns observed in both conversions has shown that, except for the privative pattern, which can only be found in noun→verb conversion (but is very rare), semantic patterns do not enable the identification of the conversion directionality because they all have counterparts in the opposite direction.

4.3. Noun gender

Don (2004) claimed that noun gender is a good indication of the direction of conversion in Dutch. There are two genders in Dutch: neuter and non-neuter. According to Don, verb→noun conversion, like all nominalization processes in Dutch, can only form non-neuter nouns so that when the noun is neuter, it must be the base of the conversion and the verb is derived. French also has two genders: feminine and masculine. Both of them can be found on nominalizations, as well as on nouns that are used for other derivations. When looking at the database of directional noun-verb pairs described in section 4.1., we can see that both genders are evenly distributed between the two conversions, as shown in Table 12.

Tab. 12: Noun gender and conversion.

Gender	Noun→Verb		Verb→Noun	
	#	%	#	%
feminine	195	42.4	74	44.6
fem. or mas.	1	0.2	1	0.6
masculine	264	57.4	91	54.8

Contrary to what Don has argued on Dutch, noun gender in French proves not to be associated with one direction over the other. Therefore, it cannot be used as a criterion to determine the directionality of conversion.

4.4. Verb inflection

Kiparsky (1997) relied on verb inflection to decide on the conversion type in English. According to him, an irregular verb cannot be derived from the noun and must derive from a root, together with the noun. Don (2004) made a similar statement in Dutch: noun→verb conversion can only form regular verbs, so that all pairs with irregular verb must be verb→noun conversions. As for Portuguese, Rodrigues Soares (2009) claimed that converted verbs can only bear the thematic vowel /a/. Therefore, when the verb displays the thematic vowel /i/ or /e/ it must be a verb→noun conversion.

In French, verbs fall into three classes, named *groups*. The first group is the most important one. It includes verbs that are all regular, end in *–er*, have a past participle in *–é* and a simple past in *–a*. The *Petit Robert Électronique* dictionary includes almost 6,000 first group verbs. The second group is composed of verbs, usually regarded as irregular, that end in *–ir* and have a present participle in *–issant*. They are about 310 in the *Petit Robert Électronique*. Finally, the third group comprises all other irregular verbs. They are 374 in the *Petit Robert Électronique*. The distribution of verbs among the three groups in the directional database (see section 4.1.) is given in Table 13.

Tab. 13: Verb inflection and conversion.

Group	Noun→Verb		Verb→Noun	
	#	%	#	%
1	460	100	159	95.8
2	0	0	3	1.8
3	0	0	4	2.4

The results in Table 13 seem to correlate with those observed in Dutch and Portuguese, that is, that irregular verbs (2nd and 3rd groups) are only found in verb→noun conversion. However, these results come from the directional

database where all nouns and verbs are morphologically complex, as they are derived from other lexemes. So, the numbers in Table 13 only indicate that morphologically complex nouns cannot be converted into verbs of the second and third groups. But they say nothing about the possibility for non-complex nouns to be converted into second or third group verbs. For example, some people would analyse examples in (6) (2nd group verbs) and (7) (3rd group verbs) as noun→verb conversion.

(6) a. GAUCHE 'left' → GAUCHIR 'to reorientate the politics to the left'
b. NORD 'north' → NORDIR 'to turn to the north' (speaking about the wind)

(7) a. DISCOURS 'speech' → DISCOURIR 'to give a speech'
b. SECOURS 'help' → SECOURIR 'to rescue' (lit. 'to bring help')

From a semantic point of view, at least for examples in (6), it would not seem illogical to consider the nouns as the bases and the verbs as converted, because it would be very odd to define the noun GAUCHE as 'the direction towards which one reorientates a politics' or NORD as 'the direction where the wind blows'. Examples in (7) are less convincing because they can also be analysed in the opposite direction.

To conclude, the situation in French with respect to verb inflection is less clear than in English and Portuguese. Second and third group verbs could be a hint of the direction of conversion but it is not fully reliable. Moreover, even if it were fully reliable, it only applies to very few pairs (4.2% of the directional data), so that it is not very helpful to determine the directionality of conversion.

5. Theoretical implications

The previous two sections have demonstrated that most of the time the directionality of noun~verb conversion in French cannot be identified. On the one hand, historical criteria can sometimes indicate a direction, but they are not reliable. On the other hand, synchronic criteria cannot provide a direction because each of them is compatible with both directions. These results raise problems for derivational analyses of conversion. Non-derivational analyses relying on category underspecification have been shown to be problematic in section 2. Thus, a non-derivational analysis with fully specified categories such as the one proposed by Lieber (1981, 2004) could be an interesting solution. Lieber argues that nouns and verbs do not derive from one another and are rather linked by relisting rules in the lexicon. That is, they are fully specified for categories, they are separately listed in the lexicon, and redundancy rules link them. According to the author, conversion is thus non-directional. This analysis seems to solve the directionality

problem. However, Lieber argues that conversion is directional on the semantic level: "whereas neither member of a conversion pair is structurally more basic, one member of a pair will always be semantically more basic and the other semantically derived." (Lieber 1981: 185). Thus, she adds directional semantic rules to link nouns and verbs, so eventually conversion is directional, at least on the semantic level. Yet, this solution is not satisfactory because, as section 4.2. has shown, semantic relations between nouns and verbs are almost always ambiguous between both directions in French.

In fact, this directionality problem is not specific to conversion. Corbin (1976) already noticed this problem with *–ie* and *–ique* suffixes, as in SYMÉTRIE 'symmetry' and SYMÉTRIQUE 'symmetrical'. Indeed, SYMÉTRIE is the property of being symmetrical, and SYMÉTRIQUE means 'that displays symmetry'. She noted that this kind of data is a problem for the derivational analysis she supports. Roché highlighted the same problem in various studies on different suffixes: *–ier* and *–erie* as in MERCIER 'haberdasher' and MERCERIE 'haberdashery' because MERCIER is the person who works in a haberdashery and MERCERIE is the activity of a haberdasher (Roché 2004); *–isme* and *–iste* as in FASCISME 'fascism' and FASCISTE 'fascist' because fascists are followers of fascism and fascism is the ideology of fascists (Roché 2007); or in country names-demonyms pairs, such as HONGRIE 'Hungary' and HONGROIS 'hungarian' where HONGRIE is the country of hungarians and HONGROIS are inhabitants of Hungary (Roché 2008).

In order to account for such cases, Roché talks about mutual motivation between lexemes. Umbreit (2011) also highlights mutual motivations between lexemes and extends the notion to the whole derivational family, even when one lexeme clearly derives from another, such as FISHY and FISH where the adjective derives from the noun by means of the suffix *–y*. According to Umbreit, morphological families form motivational networks where motivation between members of one family can not only be bidirectional, but also multidirectional. In a quite similar fashion, word or lexeme-based approaches to morphology have recently extended the notion of paradigms to derivation. Such paradigmatic analyses of derivation allow to describe morphological families and compare their organization across the lexicon (see Hathout and Namer 2019 for an overview). As mentioned by Štekauer (2014) there are different definitions of derivational paradigms. Bonami and Strnadová (2019), for example, define derivational paradigms as sets of aligned families sharing the same organization. In such paradigms, derivational relations are regarded as multidirectional relations between members of a family. Hathout and Namer (2019) noticed that one advantage of a paradigmatic approach to derivation is that it enables analyses of phenomena that are not easily described by traditional directional rules. Conversion, with its directionality problems, is undoubtly one of these phenomena.

6. Conclusion

This study on French noun~verb conversions has presented and discussed the main criteria mentioned in the literature when dealing with the directionality of conversion between nouns and verbs. Each criterion has been evaluated on different subsets of a corpus containing 3,241 noun~verb pairs.

From an empirical point of view, it has been demonstrated that none of these criteria is reliable enough to determine the direction of conversion for all noun~verb pairs: dates of first attestation are not always accurate enough and often conflict with morphology, etymology does not always allow to identify a direction and both historical criteria often lead to contradictory analyses. When it comes to synchronic criteria, morphological complexity is one reliable test, but it only helpfully applies to 626 pairs over 3,241, that is to 19.3% of the data. Semantic patterns often enable reverse analyses, but some of them such as the privative (see Table 9) and the patient ones (see Table 10) correlate with only one direction. However, these patterns apply to very few cases. In individual cases, the semantic relation between the noun and the verb could also indicate a direction, as in the examples in (6), but it cannot be generalised to all pairs. Noun gender is not helpful because both genders are found in both conversions, and verb inflection seems not to be reliable. To conclude, all these criteria might help to decide on a reliable direction for few individual cases, but none of them is applicable to all noun~verb pairs. Therefore, in most cases the directionality of conversion in French seems not to be determinable. This non-directionality is not specific to conversion and can also be found with a number of suffixes. Whereas these problematic derivations challenge the traditional conception of derivation rules, paradigmatic morphology seems to offer a good framework to account for such phenomena.

References

Adouani, Abdellatif. 1989. *Les substantifs déverbaux à "suffixe zéro" en français moderne*. PhD thesis, Université Lyon 2.

Aronoff, Mark. 1980. Contextuals. In Teun Hoekstra, Harry Van der Hulst & Michael Moortgat (eds.), *Lexical Grammar*, 263–285. Dodrecht: Foris Publications.

Aronoff, Mark. 2007. In the begining was the word. *Language* 83(4). 803–830.

Bally, Charles. 1944. *Linguistique générale et linguistique française*. Berne: A. Francke.

Balteiro, Isabel. 2007. *The Directionality of Conversion in English. A Dia-Synchronic Study*. Berlin: Peter Lang.

Barner, David & Alan Bale. 2002. No nouns, no verbs: psycholinguistic arguments in favor of underspecification. *Lingua* 112. 771–791.

Bonami, Olivier & Jana Strnadová. 2019. Paradigm structure and predictability in derivational morphology. *Morphology* 29. 167–197.

Borer, Hagit. 2013. *Taking Form. Structuring Sense*. Volume III. Oxford: Oxford University Press.

Corbin, Danielle. 1976. Peut-on faire l'hypothèse d'une dérivation en morphologie?. In Jean-Marie Chevalier (ed.), *Grammaire transformationnelle: syntaxe et lexique*, 47–91. Lille: Publications de l'Université de Lille 3.

Corbin, Danielle. 1987. *Morphologie dérivationnelle et structuration du lexique*. Tübingen: Niemeyer.

Croft, William. 1991. *Syntactic Categories and Grammatical Relations: The Cognitive Organization of Information*. Chicago: University Press of Chicago.

Dirven, René. 1988. A Cognitive Approach to Conversion. In Werner Hüllen & Rainer Schulze (eds.), *Understanding the Lexicon: Meaning, Sense and World Knowledge in Lexical Semantics*, 329–343. Tübingen: Niemeyer.

Dirven, René. 1999. Conversion as a Conceptual Metonymy of Event Schemata. In Klaus-Uwe Panther & Günter Radden (eds.), *Metonymy in Language and Thought*, 275–287. Amsterdam & Philadelphia: Benjamins.

Don, Jan. 2004. Categories in the lexicon. *Linguistics* 42(5). 931–956.

Don, Jan. 2005. On Conversion, Relisting and Zero-derivation. *SKASE Journal of theoretical Linguistics* 2(2). 2–16.

Dubois, Jean. 1962. *Étude sur la dérivation suffixale en français moderne et contemporain*. Paris: Larousse.

Farrell, Patrick. 2001. Functional shift as category underspecification. *English Language and Linguistics* 5(1). 109–130.

Fradin, Bernard. 2003. *Nouvelles approches en morphologie*. Paris: PUF.

Goldberg, Adele. 1995. *Constructions: a construction grammar approach to argument structure*. Chicago: University of Chicago Press.

Hale, Kenneth & Samuel J. Keyser. 1993. On Argument Structure and the Lexical Expression of Syntactic Relations. In Kenneth Hale & Samuel J. Keyser (eds.), *The view from Building 20: essays in honor of Sylvain Bromberger*, 53–109. Cambridge: The MIT Press.

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 honor of Sylvain Bromberger*, 111–176. Cambridge: The MIT Press.

Harley, Heidi. 2005. How do verbs get their names? Denominal verbs, manner incorporation and the ontology of verb roots in English. In Tova Rapoport & Nomi Erteschik-Shir (eds.), *The Syntax of Aspect*, 42–64. Oxford: Oxford University Press.

Hathout, Nabil & Fiammetta Namer. 2019. Paradigms in word formation: what are we up to? *Morphology* 29. 153–165.

Jespersen, Otto. 1942. *A Modern English Grammar on Historical Principles*. Part IV: Morphology. London: Allen & Unwin.

Kerleroux, Françoise. 1996. *La coupure invisible*. Lille: Presses Universitaires du Septentrion.

Kerleroux, Françoise. 1999. Identification d'un procédé morphologique: la conversion. *Faits de langues* 14. 89–100.

Kiparsky, Paul. 1997. Remarks on denominal verbs. In Alex Alsina, Joan Bresnan & Peter Sells (eds.), *Argument Structure*, 473–499. Stanford: CSLI Publications.

Labelle, Marie. 1992. La structure argumentale des verbes locatifs à base nominale. *Linguisticae Investigationes* XVI(2). 267–315.

Labelle, Marie. 2000. The semantic representation of denominal verbs. In Peter Coopmans, Martin Everaert & Jane Grimshaw (eds.), *Lexical specification and insertion*, 215–240. Amsterdam: Benjamins.

Langacker, Ronald W. 1987. *Foundations of cognitive grammar. Vol. 1: Theoretical prerequisites*. Stanford: Stanford University Press.

Langacker, Ronald W. 1991. *Foundations of cognitive grammar. Vol. 2: Descriptive application*. Stanford: Stanford University Press.

Lieber, Rochelle. 1981. Morphological Conversion Within a Restrictive Theory of the Lexicon. In Michael Moortgat, Harry van der Hulst & Teun Hoekstra (eds.), *The Scope of Lexical Rules*, 161–200. Dordrecht: Foris Publications.

Lieber, Rochelle. 2004. *Morphology and Lexical Semantics*. Cambridge: Cambridge University Press.

Ljung, Magnus. 1977. Problems in the Derivation of Instrumental Verbs. In Herbert Brekle & Dieter Kastovsky (eds.), *Perspektiven der Wortbildungsforschung*, 165–179. Bonn: Bouvier Verlag.

Lohmann, Arne. 2017. Phonological properties of word classes and directionality in conversion. *Word Structure* 10(2). 204–234.

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

Marchand, Hans. 1963. On a question of contrary analysis with derivationally connected but morphologically uncharacterized words. *English Studies* 44. 176–187.

Marchand, Hans. 1964. A set of criteria for the establishing of derivational relationship between words unmarked by derivational morphemes. *Indogermanische Forschungen* 69. 10–19.

Nyrop, Kristoffer. 1936. *Grammaire historique de la langue française. Tome III: La formation des mots*. Paris: Aphonse Picard & Fils.

Plénat, Marc. 2005. Brèves remarques sur les déverbaux en *-ette*. In Frederic Lambert & Henning Nølke (eds.), *La syntaxe au cœur de la grammaire. Recueil offert en hommage pour le 60e anniversaire de Claude Muller*, 245–258. Rennes: Presses Universitaires de Rennes.

Plag, Ingo. 1999. *Morphological productivity. Structural constraints in English derivation*. Berlin & New York: de Gruyter.

Roché, Michel. 2004. Mot construit? Mot non construit? Quelques réflexions à partir des dérivés en *-ier(e)*. *Verbum* XXVI(4). 459–480.

Roché, Michel. 2007. Logique lexicale et morphologie: la dérivation en *-isme*. *Proceedings of the 5th Décembrettes*. 45–58.

Roché, Michel. 2008. Structuration du lexique et principe d'économie: le cas des ethniques. *Actes du CMLF 2008*. 1571–1585.

Rodrigues Soares, Alexandra. 2009. Portuguese converted deverbal nouns: Constraints on their bases. *Word Structure* 2 (1). 69–107.

Sanders, Gerald. 1988. Zero derivation and the overt analogue criterion. In Michael Hammond & Michael Noonan (eds.), *Theoretical morphology*, 155–175. San Diego: Academic Press.

Štekauer, Pavol 2014. Derivational paradigms. In Rochelle Lieber & Pavol Štekauer (eds.), *The Oxford handbook of derivational morphology*, 354–369. Oxford: Oxford University Press.

Tournier, Jean. 1980. La conversion: Problèmes théoriques et implications sémantiques. *Recherches en Linguistique Etrangère V*. 71–90.

Umbreit, Birgitt. 2011. Motivational networks. An empirically supported cognitive phenomenon. In Klaus-Uwe Panther & Güner Radden (eds.), *From Motivation in Grammar and the Lexicon*, 269–286. Amsterdam & Philadelphia: Benjamins.

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