What semantic content for a Lexeme-Formation Rule ?

The case of noun to verb conversion in French

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In this paper I will discuss noun to verb conversion in French. I will particularly focus on the semantic part of the rule. After having presented the different meanings converted verbs may have, I will argue that neither an underspecified semantic instruction nor several fully specified ones constitute a sastifying way of handling the semantic part of the rule. I will then propose an output oriented way of considering the semantics of conversion.

1 Definition of conversion

Conversion is a lexeme formation pattern characterized on the one hand by the phonological identity of the base lexeme and the derived lexeme[1], and on the other hand by the fact that the two lexemes necessarily belong to two different parts of speech, as the french examples in (1) show.

(1) SCIE$_{N}$ 'saw' > SCIER$_{V}$ 'to saw'
DANSER$_{V}$ 'to dance' > DANSE$_{N}$ 'a dance'
CALME$_{A}$ 'calm' > CALMER$_{V}$ 'to calm down'

In French the inflectional marks, and particularly the verbal ones, can conceal the identity of the two lexemes. But these marks must not be taken into account (see (Corbin, 1987) on that subject).

In the lexeme-based theory of morphology adopted here ((Matthews, 1972), (Aronoff, 1994)) the unit of the morphology is the lexeme, which is defined as a complex, multidimensional object, having at least a form, a meaning and a syntactic category. Therefore a Lexeme-Formation Rule must specify each of these dimensions on the input side as well as on the output side. In the case of noun to verb conversion, we only need to say on the form level that the two lexemes are identical, and on the categorial level that the base is a noun and the derived lexem is a verb. I will thus focus on the semantic dimension of the conversion rule.

2 Semantic types of denominal converted verbs in French

According to (Plag, 1999) there are eight semantic types of denominal converted verbs in English : locative, ornative, resultative, performative, similative, instrumental, privative and stative verbs. These eight semantic types are found with french converted verbs too. But another type will be necessary to account for all the data.

Locative verbs are movement verbs. They derive from nouns which denote the final location of the event denoted by the verbs, as in the examples in (2).

[1] In fact, the identity between the two lexemes is not merely phonological and concerns the different stems of both lexemes. I simplify here for the sake of clarity.

(2) CADRE 'frame' > CADRER 'to frame' ≈ 'to put into a frame'
CLOÎTRE 'cloister' > CLOÎTRER 'to put into a cloister'

Ornative verbs are movement verbs too. They denote the movement of an entity which is denoted by the base noun. Some examples are shown in (3).

(3) POIVRE 'pepper' > POIVRER 'to pepper' ≈ 'to put some pepper to'
SELLE 'saddle' > SELLER 'to saddle' ≈ 'to put a saddle on'

Resultative verbs are verbs deriving from nouns which denote the resulting object of the event denoted by the verbs, as shown in (4).

(4) BAVE 'drool' > BAVER 'to drool' ≈ 'to produce some drool'
PRÉFACE 'preface' > PRÉFACER 'to write a preface' ≈ 'to produce a preface'

Performative verbs derive from nouns denoting an event, and not an object. They denote the same event as their base nouns. Some of them are presented in (5).

(5) ANALYSE 'analysis' > ANALYSER 'to analyse' ≈ 'to do/perform an analysis'
PARTAGE 'sharing' > PARTAGER 'to share' ≈ 'to do/perform a sharing'

Similative verbs denote an event whose agent is acting as if it were what is denoted by the base noun. The base noun can denote an animate, human or not, as well as an inanimate, as the examples in (6) show.

(6) SINGE 'ape' > SINGER 'to ape' ≈ 'to act like an ape'
BALLON 'balloon' > BALLONNER 'to swell' ≈ 'to do do what a balloon would do'

Instrumental verbs derive from nouns denoting an object but not necessarily an instrument. They refer to an activity in which the object denoted by the noun is used one way or another, as in the case of the verbs in (7).

(7) BOUTON 'button' > BOUTONNER 'to button up' ≈ 'to use a button'
CLOU 'nail' > CLOUER 'to nail' ≈ 'to use a nail'

Privative verbs are another type of movement verbs, but unlike ornative verbs their base nouns denote an object which is removed from another object, as in the examples in (8).

(8) ÉCAILLE 'scale' > ÉCAILLER 'to scale' ≈ 'to remove the scale of'
ÉCORCER 'bark' > ÉCORCER 'to bark' ≈ 'to remove the bark of'

Stative verbs refer to a situation in which the agent is or constitutes what the base nouns denote. The verbs in (9) are some examples of this kind of verbs.

(9) PRÉLUDE 'prelude' > PRÉLUDER 'to be a prelude to'
STÉRÉOTYPE 'stereotype' > STÉRÉOTYPER 'to stereotype' ≈ 'to be a stereotype'

In order to account for all the french denominal converted verbs we need to add one semantic type : the causative verbs. These verbs derive from nouns denoting a state, and refer to a situation in which the sate denoted by the noun is caused, as shown in (10).

(10) CONFUSION 'confusion' > CONFUSIONNER 'to cause confusion'
ATROPHIE 'atrophy' > ATROPHIER 'to atrophy' ≈ 'to cause atrophy'

3 The semantic content of the rule

Having presented nine semantic types of denominal converted verbs in French, the question of the semantic content of the rule arises. There are two ways of considering the question.

Underspecified semantic instruction within the rule

The first one is to consider the semantic instruction of the rule underspecified. This is for instance the position of Aronoff (1980) according to whom the noun to verb conversion rule in English has no more semantic content than the one sketched in (11).

(11) Do something with N

To Aronoff's point of view nothing semantically constraints the conversion rule, so that every verb denoting an activity which has some connection with the entity denoted by the noun is possible. According to him, only pragmatic reasons can prevent or constraint the formation of a denominal converted verb. However, this semantic only holds for verbs which derive from nouns denoting an object. It cannot account for performative and causative verbs. Moreover, even when the noun denotes an object it cannot predict resultative, similative and stative meanings of the verbs.

Following the same idea but in a different way, Plag (1999) proposed that the conversion rule has the underspecified Lexical-Conceptual Structure in (12) as semantic part (where the dash underlined clause is optional).

(12) $\underline{\text{CAUSE}}(\lfloor \_ \rfloor_i, [\text{GO}([_{Property,Thing} \;]_{Theme/Base} ; [\text{TO} \; [_{Property,Thing} \;]_{Base/Theme} \;])])$

According to Plag this Lexical-Conceptual Structure can account for the first five types of verb meanings. The structure GO([x] [TO[y]]) denotes a transfer and accounts for both change-of-place verbs (i.e. locative and ornative verbs) and change-of state verbs (i.e. resultative verbs) depending on whether the arguments are a thing or a property. The performative verbs are considered to be equivalents to the ornative ones with the meaning 'apply N (to something)', and the similative verbs to be transfer verbs like the resultative ones. Then, given one and the same semantic instruction, the correct meaning of a verb is assessed on encyclopaedic knowledge grounds. However, Plag does not say how this Lexical-Conceptual Structure can account for the instrumental, privative or stative verbs so that it seems unable to correctly predict all the possible meanings of the verbs. Conversely, this semantic instruction seems able to predict meanings that do not exist, like the change-of-state meaning we find with the *-ify* suffixed verbs such as *momifier* 'mummify' ≈ 'to transform into a mummy'.

Fully specified semantic instructions

Instead of one underspecified semantic instruction within the rule, we could think of nine fully specified semantic instructions. But then other questions arise.

Are there as many conversion rules as there are semantic instructions ? That is, are there nine noun to verb conversion rules depending on the meaning of the output verb ? And if so, how can we choose the correct rule to be applied, given one noun ?

Or, can one and the same rule have many semantic instructions ? And in that case, how is a particular semantic instruction chosen between the nine available when deriving

a new verb from a noun ?

4 Constraints on the outputs ?

Neither the underspecified semantic instruction of the rule, nor the fully specified ones, seem to be a satisfying way of considering the semantic content of the conversion rule. On the one hand underspecified semantic instructions like the two in (11) and (12) cannot predict some meanings of the verbs. Simultaneously they are so much underspecified that they could predict non attested meanings. Besides, they are so much underspecified that we can question the exact semantic content of such instructions. On the other hand, fully specified semantic instructions question the unity of a Lexeme-Formation Rule.

A third solution may be to consider the output verbs to be semantically fully specified. Focusing then on the output, we can think of the rule as constraining possible outputs rather than specifying them fully. We can thus consider nine different types of denominal converted verbs corresponding to the nine one presented in section 2. To each type is associated one constraint which stipulates :

i) the kind of noun referent (i.e. object, animate, state, event...) and

ii) the meaning of the derived verb.

In such a constraints based model of morphology, there is not one conversion rule but nine semantic constraints on conversion. As a result, a well formed denominal converted verb is a verb which satisfies one of these nine constraints on conversion.

Such a conception of conversion fits well with a declarative model of language, and can thus easily be represented in a declaractive, feature structure based formalism like the Sign-Based Construction Grammar framework (Sag, 2010).

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