

Analogy vs Rules: How Can Diachronic and Synchronic Perspectives be made to work together?

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1. Introduction

The research I present in this paper is part of an on-going research project; consequently, some of the questions I raise I consider to be (relatively) solved, others not. More specifically, I will try to answer two questions:

- Firstly, how should we conceptualize and represent the evolution that leads from the use of a term as a preposition to its use as a prefix?
- And secondly, what theory is best fit to account both for this diachronic evolution and for the synchronic use of the term as a prefix?

Most researchers study either diachronic changes, either affixes from a synchronic morphological point of view; there are but a few researchers who combine both points of view. I decided to look into the work of Teresa Vallès (2004) and Geert Booij (2005 and 2008), because, although they are originally not into historical linguistics, they both work in theoretical frameworks that allow them to describe the emergence of new words or new patterns in language. Teresa Vallès does so in studying lexical creativity in the framework of the usage-based model of Joan Bybee, and Geert Booij, in studying, amongst others topics, some problematic cases between compounding and derivation in the framework of Adele Goldberg's Construction Grammar.

In this paper, I will first present some distinctions I make between the formatives of prepositional origin; then I will illustrate the problem I discuss by using the concrete example of *après*. In parts 3 and 4, the proposals of T. Vallès and G. Booij will be set out and "evaluated" in relation to the two questions raised above. In my conclusions, I will resume the results of this small investigation and show how they open some perspectives for future research.

2. Some distinctions

The questions I will raise turned up in previous diachronic and in synchronic research on French prepositions and formatives such as *sur* 'on', *après* 'after' or *sans* 'without'. These items present the particularity of having both prepositional and formative uses in contemporary French. This is shown in the examples under (1):

- | | |
|---|--|
| (1) <i>sur le sol</i> 'on the ground' | <i>surexposition</i> 'overexposure' |
| <i>après les vacances</i> 'after the holidays' | <i>après-guerre</i> 'the post-war years' |
| <i>sans (son) parapluie</i> 'without his /her umbrella' | <i>sans-gêne</i> 'lit without embarrassment, |
| lack of consideration' | |

In fact, these data are well-known and comparable examples have already been observed in many languages.

In Amiot (2004), I claimed that these items are ambivalent: some, such as *sans-*, are still prepositions, others, such as *sur-*, have turned into full blown prefixes, and still others, such as *après-*, have some kind of intermediate status. The arguments I used to show this, were, briefly put, the following:

- (i) a prefix has at least one meaning that is different from the corresponding preposition;
- (ii) it is part of a paradigm that contains other items possessing beyond any doubt the status of prefix;

- (iii) it can be associated to bases of different categories and be used to form lexemes that are members of different categories;
- (iv) the complex lexeme is semantically endocentric;
- (v) if the complex lexeme is a noun, it inherits its gender from the lexeme base.

This list of five arguments resumes the work of several researchers, in particular that of Scalise (1984) and Iacobini (1998, 2004); the arguments show that a prefix can originate from a corresponding preposition.

Sur- and *sans-* allow us to illustrate the differences that exist between French items with respect to their degree of prefixation.

Concerning the prefix *sur-*:

(i) Its main meaning is ‘excess’, as can be seen in (2):

(2) *surcharge* ‘overload’, *surestimer* ‘overestimate, over-value’, *suralimentation* ‘overfeeding’

However, this meaning cannot be expressed by the corresponding preposition.

(ii) *Sur-* is a member of the same paradigm as *hyper-*, which is a prefix without any doubt:

(3) *hypertension* ‘hypertension’, *hyperactif* ‘hyperactive’

(iii) It can enter in processes that concern several distinct lexical categories:

(4) N → N: *charge* → *surcharge*
V → V: *estimer* → *surestimer*
A → A: *doué* → *surdoué* ‘gifted, super talented’

(iv) The complexes with *sur-* are semantically endocentric, that is, they are more or less hyponyms of the base: a *surcharge* is a sort of charge (it’s a too heavy charge), *surestimer* is estimate, but the estimation is too great, and so on.

(v) As a consequence of their endocentricity, the complexes are of the same gender as the base: *surcharge* is feminine just as *charge* is and *surpoids* ‘excess weight’ is masculine just as *poids* is.

Sans-, on the other hand, is really similar to the corresponding preposition *sans*:

(i) It has exactly the same meaning, they both express ‘absence’ (‘without’):

(5) *sans-abri* ‘litt: without-shelter, homeless’ / *il est sans abri pour la nuit* ‘he has no shelter / housing for the night’

(ii) In French, there is no paradigm it can be a member of;

(iii) It can only be involved in one categorical relation:

(6) N → N: *sans-abri*, (*faire un*) *sans-faute* ‘lit without-mistake; to do something (in sport, at school for example) without a mistake’

(iv) The complex lexemes formed using *sans* are semantically exocentric: a *sans-abri* is not a sort of *abri* ‘shelter’, but somebody with no housing, a *sans-faute* is not a sort of *faute* ‘mistake’, but something (a race, an exercise, etc.) done without a mistake’.

(v) The complexes – at least in inanimate nouns – have the default gender, that is the masculine, whatever the gender of the “base”: *faute* is feminine and *fil* ‘line/wire’ is masculine, but both *sans-faute* and *sans-fil* ‘lit without-line, telegraph’ are masculine.

Après- exemplifies a third case: it has some properties of the preposition and some of the prefix; consequently, it is to be situated between the two categories:

(i) It only expresses temporal posteriority whereas the corresponding preposition expresses both temporal and spatial posteriority:

(7) *l'après guerre* 'lit. the after-war, the postwar period', *l'après-match* 'the after match period'
il est né après la guerre 'he was born after the war' / *la boucherie est juste après la boulangerie* 'the butcher shop is just after the bakery'

(ii) *After-* belongs to the same paradigm as *post-*, a prefix (cf. *postdoctoral* 'ibid.');

(iii) It can only be involved in one categorial relation: N → N;

(iv) The complex lexemes are exocentric: *l'après-guerre* is not a *guerre* 'war', but the period after the war, *l'après-match* is not a match, but the period after the match, and so on;

(v) The gender of the lexemes built using *après* is not easy to determine, because the definite determiner (*le* masc. or *la* fem.) preceding them is systematically elided (*l'*) before a vocalic initial, as in *après*. Moreover, some / a limited number of lexemes are masculine and feminine (*après-midi*, *après-guerre*).

In the end, then, *après* presents two characteristics that are typical of prefixes and two characteristics that are typical of prepositions.

These differences can be related to the dates of the first attestation of the preposition / adverb as a formative:

- *sur-* was a prefix in Old French from early on, since it is the French counterpart of *super*, which was already a preposition, an adverb and a prefix in Latin;
- the first uses of *après* as a formative date from the fifteenth century; whereas the first uses of *sans* as a formative only date from the eighteenth century.

These items can therefore be ordered on a grammaticalization scale.

2. An example: the emergence of the first nouns formed by *après*

The first noun in which *après* appeared is *après-disner* 'after-diner', at the beginning of the fifteenth century.

This noun is the result of a gradual reanalysis of *après disner*, which was first an adverbial phrase, formed out of the adverb / preposition *après* and the infinitive verbal form *disner*.

- (8) a. [Baye, II, 1411-1417, 28] Cedit jour, **après disner**, je fu mandé de par monseigneur de Bourgoigne¹ 'this day, **after diner**, [...]
- b. [Chartes Abb. St-Magl. T.F., t.3, [1330-1436], 650] Comme le dymanche XXVIIIe jour du moys d'avril derrenierement et nagaires passé, environ deux heures après disner, 'about two hours after diner / after dining'
- c. [Reg. crim. Chât., I, 1389-1392, 195] elle estant seule en l'ostel dudit Hennequin, son maistre, à heure d'après disner 'lit at hour of **after diner**'

In (8 a) *après disner* is really an adverbial phrase, but in (8 b & c) it is a kind of complement to the temporal noun, without any preposition in (8 b), and introduced by the preposition *de* in (8 c). In these two last contexts, *après-disner* is not really an adverb anymore, and *disner* tends to be reanalysed as a noun: *après-disner* in these examples could be glossed by 'after the diner', and also by 'after having diner'.

¹ This example and the following come from the *Base de Lexiques de Moyen Français (DMF1)*, <http://www.atilf.fr>

Gradually, *après-disner* evolves / turns into a noun; it can then be used in contexts where it is coordinated with a noun as in (9):

- (9) [Baye, I, 1400-1410, 140] Cedit jour, à **matin** et **après disner**,
 ‘This day, at **morning** and **after diner**’

The expression has acquired full nominal status when it is used as the head of a phrase and is preceded by a determiner, such as in (10); we find (at least) two spellings for *diner*: *disner* or *disnee*:

- (10) [Ch. d'Orléans, *Chanson*, 1415-1440, 248] En gibessant toute **l'après disnee**
 ‘hunting all **the after diner**’
 [Commynes., III, 1495-1498, 130] à **l'après disner**,
 ‘at **the after diner**’

The only other Old French nouns with *après* as a first constituent are *après-souper* (1502) and *après-midi* (1702). During the next centuries, but a few nouns were coined using *après-* (for example *après-minuit* by Flaubert, nineteenth century); it is only from the middle of the twentieth century that this mode of formation became more productive: *après-guerre* ‘the post war years’, *l'après-match* ‘the after match period’, and above all, many words of the form *après* + PN (proper name), this PN can notably be an anthroponym (*l'après-Ceaucescu* ‘the after-Ceaucescu period’, *l'après-Bush* ‘the after-Bush period’, a date (*l'après-11 septembre* ‘the after-eleventh of September period’), and so on.

I will now set out the framework of Teresa Vallès to see if it can account for these data.

3. Teresa Vallès’s proposal

T. Vallès, who is working in the framework of Joan Bybee’s usage-based model, considers that neologisms are created by analogy, in its more basic sense: “any change due to the influence of one form on another” (Joseph 1998 : 362). She distinguishes between punctual and conventional analogy.

Punctual analogy is the extension from one exemplar, and it contains the following stages (in my translation):

- first, a neologism is coined as the result of the extension of one exemplar used as a model, or a prototype: $A \rightarrow B$. Once this neologism is created, the schematization and the abstraction can produce a new pattern, C.
- the new pattern, which is a low level pattern, can be used to analyse the two words, the model and the neologism coined from this model, in such a way that A and B become actualizations of the new pattern C, that can become productive. Becoming a productive pattern often depends on the frequency of the elements in play. T. Vallès schematizes this evolution as in figure 1, in Vallès (2004: 147):

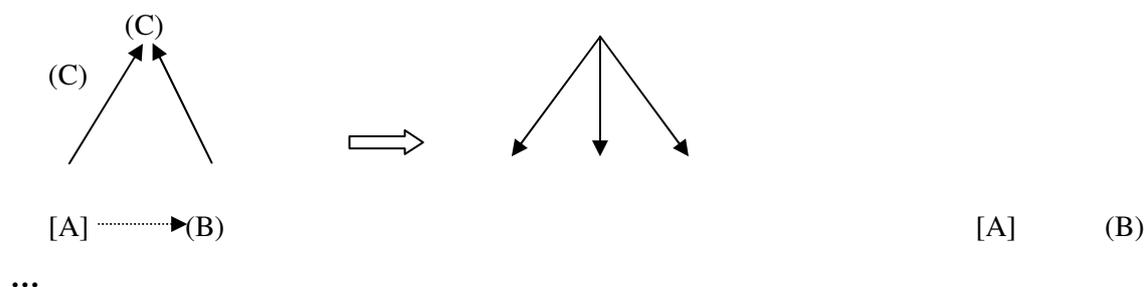


figure 1

In conventional analogy, on the other hand, a new pattern can become a sort of rule thanks to the ability of the language users to abstract patterns from existing words; these abstract

patterns are then conventionalized and used for regular word formation. This sort of “rules” is also based on analogy, but T. Vallès does not really explain in what sense they are different from punctual analogy.

Then, there is a continuum between the lexical innovation by analogy, the creation of low level patterns and the creation of abstract conventionalized patterns.

It is worth noting that this conception of lexical innovation and its extension to the coinage of other words is underlain by two strong principles:

- (i) Language users play an active role by their ability to abstract low level patterns or more abstract ones, which allow them to create word formation rules;
- (ii) The mental lexicon contains all existing words (the regular and the irregular ones, the simple and the complex ones, the affixes and the lexemes, etc.), and these constitute a network in which all the nodes share multiple and complex relations. These multiple connexions between the words in the mental lexicon allow the language users to abstract the patterns that will serve to create the neologisms or the rules.

Such a conception of the mental lexicon is frequently found in the work of linguists working in a diachronic perspective that is inspired by cognitive linguistic theories; in the present case, it is based on the usage-based model of Joan Bybee (1985), which goes back to the theories of Langacker (1987, among others).

How can Vallès’ model be of interest for the problems we are dealing with? Such a connexionist model is able to account for the first uses of *sans-*, *après-* and *sur-* (for example) as formatives. Indeed, what was said before about *après* can be transposed to this theoretical frame.

As was pointed out above, the first nouns *après* attaches to are *disner* at the beginning of the fifteen century, *souper* one century later, and *midi* two centuries after *après souper*. There is a great temporal distance between the coinage of these nouns.

At this point, two facts deserve to be pointed out:

- before their lexicalization, *après souper* and *après midi* were used in contexts similar to those of *après disner*: for both of them, the adverbial forms were attested, but they were not very frequent and the contexts in which they appeared showed less variation;
- the noun *after disner* had a very frequent use when *after souper* was coined.

Thus, it seems that once *après disner* was coined (by reanalysis from specific contexts of high frequency; on these general topics, see among others, Hopper & Traugott (1993), Heine & al. (1991), Lehmann (1995), etc), it could serve as a model for the formation of *après souper* and *après midi*: indeed, the former – *après souper* – involves an infinitive form, just like *après disner*, and the latter is formed using a particular kind of temporal noun that Van de Velde (2000) has called “temporal proper name” and that is generally used without a determiner, even in modern French.

Consequently, the assumption can be made that a low level pattern comparable to those described by Vallès has been set up, based on punctual analogy. The possibility of analogical processes relies on the notion of paradigm, underlain by the notion of network.

It is however more difficult to account in the same way for the extension to regular formations, above all those in *sur-*, when *sur-* is a prefix, because, in my opinion

- (i) the relation between the notions of conventional pattern and that of the emergence of abstract patterns is not sufficiently clarified; these two related notions are not made sufficiently explicit and it is difficult to understand to what extent there is “abstraction”.
- (ii) the notion of affix / prefix is insufficiently developed. Indeed, the only real criterion that is used is that of dependence: a prefix is phonologically and semantically dependent, while a stem is characterised by its independence. A second criterion, which is a semantic one, appears when T. Vallès writes:

“The préfixoïdes *euro-* and *eco-* can be considered prefixes, because they have no autonomy [...]; but they are not prototypical prefixes on account of their semantic content, which is that of a lexical unit” (Vallès 2004: 191) [my translation]

However, T. Vallès does not give more detailed information concerning the semantic value of the prefixes. One would expect identification criteria and a precise definition of what is a prefix.

Moreover, many researchers have attempted to show that items such as *euro-* and *eco-* are not prefixes but bound-stems (or bound-roots), and that they enter in compounding processes (on this topic, see for example Corbin 1992, Bauer 1997, 1998, Lüdeling & al. 2002, Iacobini 2004, Namer & Villoing 2005 & 2006, Ralli 2007 & 2008, Dal & Amiot 2008).

Let us now have a look at the analysis put forward by Geert Booij.

4. Geert Booij's proposal (2005 and 2008)

In the two papers I refer to, G. Booij adapts the principles of Goldberg's Construction Grammar to the domain of morphology. This theory also originates from Cognitive Grammar. The fundamental assumptions concerning the existence of immanent abstract patterns, the role of the language user and the lexicon are more or less similar to those T. Vallès adheres to. I quote:

“Language users acquire knowledge of these abstract morphological schemas on the basis of their knowledge of a set of words that instantiate this pattern. Once they have come across a sufficient number of words of a certain type, they can infer an abstract scheme, and will be able to extend that class of words.” (Booij 2005: 124)

But, contrary to Vallès, Booij does not focus on this question, what he wants is to

“develop a constructional theory of word formation that makes use of some basic ideas of Construction Grammar, in particular constructional schemas, the idea of a hierarchical lexicon, multiple linking, and intermediate levels of generalization for an adequate account of word formation. These ideas have also been developed in the framework of Cognitive Grammar (Langacker 1988, 1998).” (Booij 2008)

According to Booij, patterns of word formation can be considered as constructions, that is, in the terms of Goldberg (1995), who studies verbal constructions:

“Form-meaning correspondences that exist independently of particular verbs. That is, it is argued that constructions themselves carry meaning, independently of the words in the sentence” (Goldberg 1995: 1)

According to Booij, there exist general morphological patterns for each process of word formation; here is that of compounding:

$$(11) \quad \begin{array}{c} [[a]_X [b]_{Y_i}]_Y \text{ 'Y}_i \text{ with some relation R to X'} \\ \quad \quad \quad | \quad \quad | \\ \quad \quad \quad [\alpha F] [\alpha F] \end{array}$$

Such a schema is in fact a form-meaning correspondence, it accounts for the fact that the compounds of Dutch are right-headed endocentric; the subscript $[\alpha F]$ indicates that the pertinent features (gender, declension class for nouns, and so on) percolate from the right constituent to the complex word. The relation R between X et Y is not specified at this level.

And here is the general pattern of prefixation:

$$(12) \quad \begin{array}{c} [a [b]_Y]_Y \text{ 'Y modified by a'} \\ \quad \quad | \quad | \\ \quad \quad \alpha F \quad \alpha F \end{array}$$

The principles are similar but there are some differences:

- a prefix, like a suffix, has no lexical category;
- prefixes are normally category-neutral, so the properties of the base are transferred to the complex word;
- a prefix has the semantic function of a modifier.

Booij makes the assumption that in the morphological domain there also exist constructional idioms (in the sense of Jackendoff 2002); a constructional idiom in morphology is an abstract construction in which one position is occupied by a specific lexical item. For example, in French, there exist constructional idioms involving the prepositions *sans* or *après*:

- (13) $[[sans]_P [y]_V]_V$ ‘something / somebody without Y’
 $[[après]_P [y]_V]_V$ ‘period after Y’

These schemes are to be interpreted as follows: when the preposition *sans* / *après* and a noun are conjoined to form a compound noun, this noun means, respectively, ‘something / somebody without Y’ such as in *sans-abri*, *sans-papiers* or *sans-faute* / ‘period after Y’, such as in *après-guerre*, *après-match* or *après-Ceaucescu*.

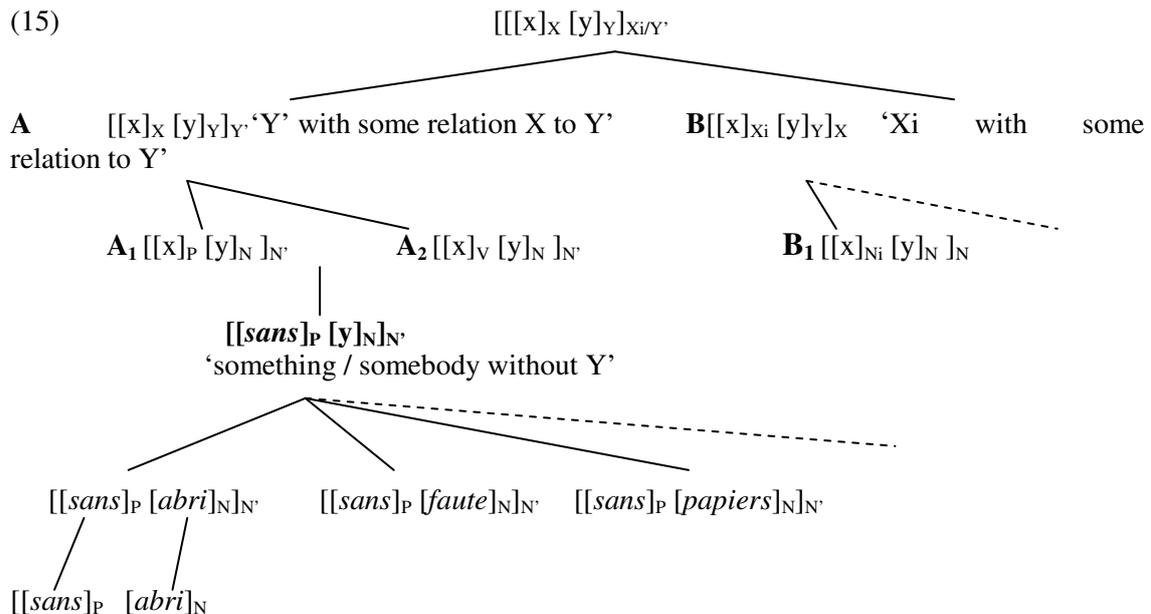
Constructional idioms can also be set up for affixation; here is the example of the prefix *sur-*:

- (14) $[sur [y]_y]_y$ ‘Y in excess’²

The two *x* subscripts in (14) indicate that, as was pointed out under 2., the lexemes built by *sur-* belong to several categories (nouns, verbs and adjectives) and the complex lexeme is of the same category as its base.

Constructional Idioms are intermediate sub-schemes between the general scheme and the individual words; they can be represented as follows, for example for *sans* (it is an adaptation, and an extension, from Booij 2005 and 2008):

² This is not the only meaning a lexeme built with *sur-* can express, but it is indeed the most frequent, expressed by the bulk of types of bases.



This representation needs some clarification:

(i) The Constructional Idiom (in bold type in (15)) is in fact situated on an intermediate level between the most general levels and the individual items. This representation takes the shape of a multiple inheritance tree, where the lower nodes inherit the properties of their dominating nodes.

(ii) I make the assumption that, in French and possibly in other Romance languages, there are two general schemes of composition, one for the formation of exocentric lexemes (A), and another for the formation of endocentric ones (B). The scheme for exocentric lexemes subsumes two other sub-schemes, one in which the first constituent is a preposition (A₁) and another in which the first constituent is a verb (A₂), such as, for example, in *brise-glace*: 'lit. break-ice; icebreaker'. The scheme that accounts for the formation of endocentric lexemes can be exemplified by a lexeme such as *requin-marteau* 'lit. shark-hammer; hammerhead'.

(iii) As is also the case in other Romance languages, French compounds are left-headed when they are endocentric and when they are exocentric, their interpretation beginning at the left. For the exocentric compounds, the prime in Y' or N' indicates that, although the compound is of the same category as the second constituent, it is semantically different (it is a consequence of exocentricity). Conversely, the subscript *i* indicates the semantic head for the endocentric compounds.

(iv) The constructional idiom of *sans-* is an instantiation of the schema of exocentric compounds, and more precisely, of A₁.

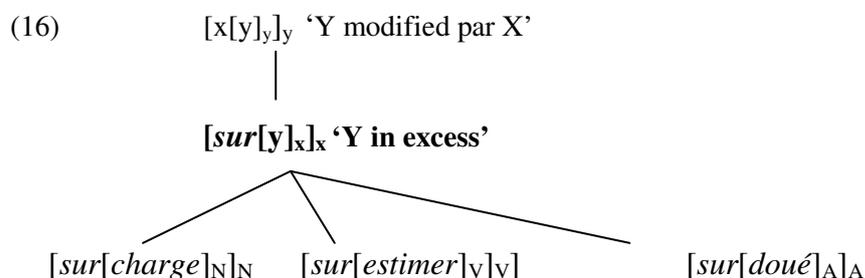
(v) The last line indicates that each constituent of a compound is linked with its corresponding syntactic counterpart, and also inherits properties from it.

I also want to insist on the fact that constructional idioms cannot be hypothesized for all sorts of compounding; it is possible to do so when the first constituent is a preposition, but not in the two other schemes of the representation under (15), A₂ et B₁. For these, there is no intermediate level between the pattern and the individual lexemes because no regular series of lexemes are formed from one of the two constituents³; therefore, the

³ In the best case, some words are created with the same first verb (*garde-malade* 'home-health aide', *garde-feu* 'fireguard', *garde-manger* 'larder', etc.) or with the same first noun (*requin-marteau*, *requin-baleine* 'whale shark', *requin-tigre* 'tiger shark', etc.).

emergence of constructional idioms can be seen as the first step toward the path that leads from composition to derivation.

As for the prefix *sur-*, its constructional idiom is a part of the general scheme of affixation, and more precisely the scheme of prefixation, that can be simplified in the following way:



Booij never considers a formative as a prefix as long as it corresponds to a preposition; thereby, such a representation could only hold, in the analysis of Booij, for a prefix such as *hyper-*, a prefix that belongs to the same paradigm as *sur-*, but without any correspondent preposition in French. But this difference in the analysis is not very important here.

Booij's model is interesting in that it offers a general overview of the architecture of word formation processes, and of the sub-regularities which characterise it, these sub-regularities being represented by the constructional idioms, on which accurate constraints are exerted. But, from our perspective, which is diachronic, the following question arises: how is it possible to conceptualize in this framework the evolution from the creation of the first complex words in which the left constituent is a preposition to the morphological operation of prefixation *via* the stage of the formation by an operation of compounding?

When the first lexemes occur, a low level pattern (cf. Vallès) can be created (cf. the emergence of the first words with *après*, § 3.). Such a pattern can correspond to an existing pattern, as a matter of fact $[[x]_P [y]_N]_{N^*}$. When the process becomes regular, a constructional idiom can emerge, for example $[[après]_P [y]_N]_{N^*}$, in which *après* is still a preposition, and the complex lexemes are exocentric. The difficulty lays in the evolution toward a derivational constructional idioms: if, for example, *après* become a real prefix, as *sur-* is, the evolution would be:

(17) $[[après]_P [y]_N]_{N^*} \rightarrow [après[y]_x]_x$

As a prefix, *après* would be a modifier and would form endocentric lexemes (of several categories), just as *sur-* does. Such an evolution is not easy to conceptualize: what are the operations allowing it?

A way to conceptualize it is to consider that there has been a "leap" in the evolution: when the formative has acquired enough autonomy with respect to the preposition it comes from (= when it has become "light" enough, cf. the criteria at the beginning of the paper), it can be integrated in the general pattern of derivation $([x[y]_y]_y)$; in this way, it "becomes" a modifier able to form endocentric lexemes; then, it can carry on its evolution (in, gradually, combining with lexemes belonging to other categories than the nominal category).

5. Perspectives

Booij works in the theoretical framework of Construction Grammar, but also in the framework of Item & Arrangement, which, according to Aronoff and Fudeman (2005) “proceeds from a picture of each language as a set of elements, and the patterns in which those elements occur” (Aronoff and Fudeman 2005: 47). In such a framework, the affixes are morphemes (that is pairing form-meaning) like the lexemes they attach to. Considering that affixes are morphemes allows one to conceptualise quite easily the path that leads from the domain of composition to that of derivation, which is an important result when one works in a diachronic perspective.

However, the Item & Arrangement perspective has two disadvantages:

- it is not very easy to account for the paradigmatic relations between affixes in this frame;
- it isolates affixal derivation from non affixal word formation processes, such as back-formation, shift stress, duplication, and so on.

Consequently, what needs to be examined now is whether an Item and Process perspective, which, in the words of Aronoff & Fudeman “gives no independent status to the items” and where “complex words result from the operation of processes on simpler words” (*ibid.*) is compatible with the analysis developed here (notably the evolution from compounding to derivation). Some researchers begin to adopt this frame for research in a diachronic perspective, for example Amanda Pounder, who studied the evolution of denominal adjectives in German.

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