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Edited by

Maya Hickmann
CNRS & University René Descartes, Paris 5

Stéphane Robert
CNRS-LLACAN & INALCO

The semantic structure of motion verbs in French

Typological perspectives[1]

Anetta Kopecka

Max Planck Institute for Psycholinguistics, Nijmegen, The Netherlands

This paper investigates the semantic structure of motion verbs in French and re-evaluates its place in the typology of Motion events (Talmy 1991, 2000). It illustrates how, contrary to its widely claimed tendency to be a verb-framed language that expresses Path of motion in the verb, French can also express Path in a prefix revealing a satellite-framed pattern attributed to Germanic and Slavic languages. It shows that the expression of Path in a prefix is associated with a great variety of lexicalization patterns regarding the verb stem, including some supposed to be rare in the languages of the world. Finally, it examines the morphological productivity and the semantic transparency of this pattern, pointing to the diachronic source of the typological complexity of contemporary French.

1. Introduction

This study addresses the question of the semantic structure of motion verbs in French, with a specific focus on prefixed verbs as opposed to morphologically simple verbs, and discusses the place of French in a by now very well-known linguistic typology of Motion events (Talmy 1991, 2000). According to this typology, French as a Romance language shows a preference for the lexicalization of Path of motion in the verb, in contrast to Germanic and Slavonic languages, which en-

code Path in a satellite associated with the verb, such as a particle or a prefix. The study re-evaluates the place of French in the typology of Motion events, showing that French is a hybrid system that amalgamates characteristics of both types of language that can encode Path in either a verb or a verbal prefix. Furthermore, it shows that the latter encoding strategy is a remnant of its earlier typological system, which has evolved over the centuries.

Section 2 briefly presents the typology of Motion events and illustrates the type of encoding strategies existing in French to express Path. Focusing mainly on prefixed verbs, Section 3 provides a description of the prefixes encoding Path, examining their role in the expression of motion and the type of semantic elements that they allow to be expressed in the verb root. The productivity of this encoding strategy is discussed in Section 4 through an analysis of the morphological availability of the prefixation process and of the semantic transparency of prefixed verbs of motion in French. Pointing to the diachronic source of this strategy, Section 5 considers the typologically mixed nature of French and presents a typological cline for verbs of motion in Modern French.

2.   The typological framework

The background of this study is the typology of Motion events proposed by Talmy (1991, 2000), which is based on a systematic analysis of the relation between the semantic elements associated with spatial events – Figure (moving entity), Ground (reference entity), Path (direction followed or site occupied by the Figure), Manner and/or Cause – and the linguistic surface structure. Depending on the morpho-syntactic device used by the language to encode Path and Manner, two semantic parameters of cross-linguistic variation, this typology divides languages into two main types. The first type, called *verb-framed languages*, expresses Path in the main verb and Manner periphrastically, and hence not obligatorily, in an adverbial clause (e.g., *enter* [*running*], *exit* [*running*]), as in Romance and Semitic languages. The second type, called *satellite-framed languages*, expresses Manner in the main verb and Path in a morpheme associated with the verb (a particle or a prefix, e.g., *run in*, *run out*), as in Germanic and Slavonic languages.

In this typology, French, like all the other Romance languages, is defined as a verb-framed language, with Path encoded in the verb and Manner in a gerund, as evidenced in the following examples:

(1)   Verb-framed pattern
    a.   *Pierre est entré dans l'école en courant.*
        (lit.) Pierre entered the school running.

    b.   *Pierre est sorti de l'école en courant.*
        (lit.) Pierre exited the school running.

French has about fifteen verbs lexicalizing the notion of Path, including the verbs *arriver* 'arrive', *descendre* 'go down', *longer* 'go along', *monter* 'go up', *partir* 'leave', *passer* 'pass by', *traverser* 'cross', *venir* 'come', etc.

Nevertheless, although the fact of encoding Path in the verb is well attested, French (and possibly other Romance languages as well) can also express this notion in a prefix, leaving the slot of the verb root free to encode Manner, a characteristic typically assigned by the typology to Germanic and Slavonic languages, for example:

(2)   Satellite-framed pattern
    a.   *Pierre s'est enfui de l'école.*
        Pierre ran away (escaped) from school.
    b.   *Les abeilles se sont envolées de la ruche.*
        The bees flew away from the hive.

At the cross-linguistic level, such structural differences have been shown to be responsible for the type of information provided in discourse. Much evidence has been provided by linguistic and psycholinguistic studies of the ways in which such language-specific patterns influence discourse patterns, drawing speakers' attention to different dimensions of motion events, Path or Manner, depending on what is obligatorily expressed in the language (e.g., Slobin 1996, 2004). In view of these cross-linguistic findings, the fact that French has two types of patterns in its system raises the intriguing question of what impact such a system has on the cognitive representation of motion in speakers of this language. Although it is crucial for a better understanding of motion representation, the issue of the discursive and cognitive implications of the typology is beyond the scope of the present study and will not be discussed in this paper. The following sections will focus instead on the linguistic analysis of the satellite-framed pattern, which has not been explored as yet in light of Talmy's typology and, more generally, which has been neglected by studies of the expression of motion in French.

3.   The satellite-framed pattern in French

Before considering French prefixes, let us first clarify the notion of *satellite*, which can refer to various linguistic tools employed by languages to express the notion of Path and, in some cases, the notions of Manner or of Cause. Talmy defines this term in the following way:

(...) satellite is a grammatical category of any constituent other than nominal complement that is in sister relation to the verb root. The satellite, which can be either a bound affix or a free word, is thus intended to encompass all of the following grammatical forms, which traditionally have been largely treated independently of each other: English particles, German separable and inseparable verb prefixes, Latin or Russian verb prefixes, Chinese verb complements, Lahu non-head versatile verbs, Caddo incorporated nouns, and Atsugewi polysynthetic affixes round the verb root.

(Talmy 1991:486)

Inherited from Latin, French satellites have the form of prefixes. The following sections will present these prefixes, outline their role in the expression of motion and examine the type of semantic elements which they can express in the verb.

3.1 French verbal prefixes as path satellites

French has about 60 prefixes, the majority of which are of Latin origin, with some from Greek. While most of these prefixes can be combined with nouns and/or adjectives, only 22 of them play a role in the derivation of verbs (cf. Béchade 1992). These verbal prefixes show a wide range of meanings from concrete to abstract and even to quite obscure or 'colorless'. Nevertheless, among these prefixes, 11 have the property of conveying a spatial meaning in general and the notion of Path in particular. Their form and meaning, and a few examples of their use, are given in Table 1. Note that some of these prefixes have two or more forms, depending either on (i) whether they are in a literary word based on Latin or in a popular word borrowed from Latin and Gallicized later (e.g., é-/ex- 'out of', entre-/ inter- 'be-

Table 1. Path prefixes in French

prefix	meaning	Examples
a(d)-	'to, toward'	ac-courir 'run to', at-terir 'land, touch down'
dé(s)-/dis-	'from, off, apart'	dé-crocher 'take off, unhook', décoller 'soak off'
é-/ex-	'out of'	s'é-couler 'flow out', ex-traire 'extract'
em-/en- (Lat. inde)	'away, off'	s'en-voler 'fly away', s'en-fuir 'run away'
em-/en- (Lat. in)	'in, into'	en-fouir 'bury in', en-fermer 'enclose'
entre-/inter-	'between, among'	entre-poser 'put in / between', inter-caler 'insert'
par-	'by, all over'	par-courir 'go all over', par-semer 'sprinkle all over'
ré-/r(e)-	'back, backwards'	re-tourner 'return, turn over', re-venir 'come back'
sou(s)-	'under'	sou-tirer 'extract, decant'
sur-	'on, over'	sur-voler 'fly over'
tra-/trans-/tre-	'across, through'	trans-porter 'transport', trans-percer 'pierce, go through'

tween, among'), or on (ii) the phonetic nature of the initial element of the lexical base (e.g., em-/en- 'in', dé-/dés- 'from, off').

All of these prefixes have their origin in locative or directional elements, developed mostly from adverbs (e.g., em-/en- 'away" < Lat. inde) and prepositions (em-/en- 'in'< Lat. in) through the well-known process of grammaticalization (cf. Darmesteter 1932; Nyrop 1936). It might be noted that at the stage of Old French some of these morphemes still had multiple functions in the language and could play the role of adverbs, prepositions, particles, and prefixes, as was the case for example with morphemes such as par(-), sous(-) and tres(-) (cf. Marchello-Nizia 2002). In Modern French however, their multi-categorial functions are lost, and with few exceptions each category has its own set of morphemes.

3.2 The role of prefixes in the expression of motion

The question now arises as to the role played by prefixes in the verbal system of the language. In French, one can recognize their three functions as follows (cf. Amiot 2002; Boons 1991; Bourciez 1967; Corbin 1997; Gary-Prieur 1976; Martin 1971; Riegel et al. 1998):

i. *Aspect* – the prefix can modify the aspectual value of the verb root and present the process as having a terminal point (e.g., croître 'grow'/accroître 'increase'; porter 'carry'/apporter 'bring to');

ii. *Aktionsart* – the prefix can indicate a mode of action (intensive, quantitative, etc.) of the process designated by the verb root (e.g., crier 'cry'/s'écrier 'cry out'; grandir 'grow'/agrandir 'enlarge, expand');

iii. *Lexical derivation* – the prefix can modify the meaning of the verb and contribute to the expression of a significantly different process from that expressed by the verb root alone (e.g., prendre 'take'/surprendre 'surprise, amaze'; chanter 'sing'/enchanter 'enchant').

With respect to the specific role of prefixes associated with verbs of motion, they determine the spatio-temporal frame of the process expressed by the verb and indicate one of the three phases of motion on the axis of Path: initial (departure from the source), medial (course of the journey) or final (arrival at the goal). The examples in (3) below illustrate this semantic contribution of prefixes to the representation of motion events. As activity verbs, voler 'to fly', courir 'to run' and fouir 'to dig' express processes which have no intrinsic limits; that is, they have no goal or final point, and their termination does not result from the structure of the motion but provides merely a temporal boundary. It can be seen that the mere addition of a prefix to these verb roots introduces not only a temporal but also a spatial frame by indicating a change in the spatial relation between the Figure and the Ground: en- (Lat. inde) 'away' indicates the departure from the source (3a),

Table 2. Spatio-temporal semantics of French prefixes

initial phase or source	medial phase or journey	final phase or goal
em-/en- (Lat. *inde*) 'away, off'	tra-/trans- 'across, through'	a(d)- 'to, toward'
dé(s)- 'from, off, apart'	par- 'by'	entre-/inter- 'between, among'
é-/ex-'out of'	sous- 'under'	em-/en- (Lat. *in*) 'in, into'
		re- 'back'
		sur- 'on, on top of'

par- (*by, over*) indicates the course of a journey (3b) and *en-* (Lat. *in*) 'in' indicates the arrival at the goal (3c).

(3) a. *L'oiseau s'est envolé du nid.* [*initial phase*]
        'The bird flew away from the nest.'

  b. *Les enfants ont parcouru le parc.* [*medial phase*]
        'The children ran all over the park.'

  c. *Oscar a enfoui le trésor dans le sable.* [*final phase*]
        'Oscar buried the treasure in the sand.'

As demonstrated by these examples, verbal prefixes therefore play an essential role in the conceptualization of motion, involving a change from one stage to another, in other words a resultant state. When looking at the underlying semantic features of different prefixes, one can recognize that each of them profiles a different spatio-temporal phase of the motion event: initial, median or final, as shown in Table 2.

Concerning the underlying semantics of these morphemes, it may furthermore be noticed that, as is more generally the case with satellites in the languages of the world (e.g., Germanic particles, Slavic prefixes, etc.), French prefixes can also incorporate, concomitantly with the notion of Path, other semantic nuances such as deixis (e.g., *em-/en* [Lat. *inde*] 'away'), geometric Ground properties (e.g., *tra-/trans-* 'through, across'), directionality (e.g. *re-* 'back, backward'), or relative position (e.g., *sous* 'under').

3.3 The variety of lexicalization patterns

The process of prefixation within the category of motion verbs in French is associated with a great variety of lexicalization patterns, including some supposed to be rare or even unattested in the languages of the world.

According to Talmy (1985, 2000), there are three main lexicalization patterns concerning the type of elements expressed in the verb: (i) Motion + Path (e.g., *to enter*, *to exit*) (ii) Motion + Manner and/or Cause (e.g., *to run*, *to blow*), and (iii) Motion + Figure (e.g., *to rain*, *to snow*). Talmy also observes that the first two types of lexicalization are the most prevalent in the languages of the world, while the

Table 3. [Motion + Manner] lexicalization pattern

V_{manner}		[Pref–V_{manner}]
courir 'run'	>	*ac-courir* 'run to'
tirer 'pull, draw'	>	*at-tirer* 'draw to / toward'
couler 'flow'	>	*s'é-couler* 'flow out'
crouler 'collapse'	>	*s'é-crouler* 'collapse, fall down'
fuir 'escape'	>	*s'en-fuir* 'escape, run away'
voler 'fly'	>	*s'en-voler* 'fly away'

third type is a less common process, mainly found in Amerindian languages. As for the potential fourth type, involving lexicalization of the Ground, it is said not to be attested or only attested with some rare exceptions in some languages (e.g., *to land*, *to shelve*). A possible explanation for this constraint is that the Ground is a stable entity which serves as a point of reference for the displacement of the Figure and is therefore typically encoded in a noun rather than in a verb with its associations of motion (Talmy 2000: 60–61).

Contrary to Talmy's claim, it will be shown that French does not seem to be sensitive to this constraint, inasmuch as its morphosyntactic tools – in this case the prefixation process – allow it to encode in the verb not only the Manner of motion, but also the Figure and even the Ground.

Table 3 shows the lexicalization of Manner of motion in the verb; that is, these verbs encode *how* the figure moves through space. It may be noticed that these verbs exist in the language in their simple form (with the activity meaning). When a prefix is added, it brings to the verb root the notion of Path (with the accomplishment meaning) that is not inherent in the verb root.

As for the other two semantic elements in the verb, Figure and Ground, they can be lexicalized through the derivational process of simultaneously adding a prefix and a verbal suffix to a nominal root, in the schema [Pref-N-er]:[2]

(4) a. $Pref_{path} - N_{figure} - er_{verbalizer}$

  b. $Pref_{path} - N_{ground} - er_{verbalizer}$

As an illustration, Table 4 shows verbs derived from Figure-related nouns by means of the prefix *é-/ex-*, which denotes the notion of exit and/or extraction. The *é-/ex-* prefix has been particularly productive in this type of derivation and it has formed over 50 motion verbs by this morphological process.

Table 5 shows verbs derived from Ground-related nouns by means of the prefix *em-/en-* (Lat. *in*). This specific prefix conveys the meaning of inclusion and, much

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2. These denominal verbs are mostly constructed with the prefixes *a(d)-* 'to', *dé(s)-* 'from, off', *é-/ex-* 'out of' and *em-/en-* 'in'.

Table 4. [Motion + Figure] lexicalization pattern

N$_{figure}$		[é-+N$_{figure}$+er]
crème 'cream'	>	écrémer 'skim'
goutte 'drop'	>	égoutter 'strain, drip'
grain 'grain'	>	égrener 'take grains out of'
pépin 'seed, stone'	>	épépiner 'take seeds out of'
tripe 'guts'	>	étriper 'take guts out of'

Table 5. [Motion + Ground] lexicalization pattern

N$_{ground}$		[em-/en-+N$_{ground}$+er]
bouteille 'bottle'	>	embouteiller 'put in bottles'
poing 'fist'	>	empoigner 'grasp'
pot 'pot'	>	empoter 'put in pots'
prison 'prison'	>	emprisonner 'put in prison'
cadre 'frame'	>	encadrer 'put in a frame'

like the prefix é-/ex- for Figure verbs, it has been very productive in this particular type of derivation, resulting in about 40 verbs of motion.

It may be noticed that this particular process, consisting in the simultaneous addition of a prefix and a verbal suffix to a noun, produces verbs expressing externally caused motion, which occur in transitive constructions. As schematized below, Figure-causative verbs call for an object representing the Ground, whereas Ground-causative verbs call for an object representing the Figure:

(5) | | Subject | V$_{caused\ motion}$ | Object |
|---|---|---|---|
| | a. | N$_{agent}$ | V$_{figure}$ | N$_{ground}$ |
| | b. | N$_{agent}$ | V$_{ground}$ | N$_{figure}$ |

As an illustration, in Figure-causative constructions such as (6) the entity encoded in the verb is seen as being dissociated from the Ground-entity, which is expressed by the object of the verb.[3] This particular process affects the Ground-entity and results in a change of its state.

(6) a. écrémer le lait
        (lit.) 'take cream out of milk'/'skim milk'
     b. épépiner les raisins
        (lit.) 'take seeds out of grapes'

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3. The prefix é-/ex- shown in these examples is intimately linked to the part-whole relation; that is, the entity encoded in the verb is seen as part of the entity designated by the object of the verb (cf. Aurnague & Plénat 1997).

c. étriper le poisson
    (lit.) 'take the guts out of fish'

In contrast, in Ground-causative constructions such as (7) the entity expressed by the verb is conceived as a reference object with respect to which the Figure, expressed by the object of the verb, is displaced. This specific process affects the Figure-entity and results in a change of its location.

(7) a. empoter une plante
        'pot a plant'
     b. encadrer un tableau
        'frame a picture'
     c. emprisonner l'assassin
        'imprison the assassin'

4. The productivity of the satellite-framed pattern in French

Now that we have seen the Path prefixes and the different types of lexicalization patterns existing in French, the following sections examine the morphological productivity and the semantic transparency of verbs belonging to the satellite-framed pattern, pointing out the diachronic source of the typological complexity in contemporary language.

4.1 The cline of morphological productivity

The notion of *productivity* is used here to mean *availability* of a morphological process to form new words in the present state of the language, through application to a variety of lexical roots resulting in a large number of derivatives (cf. Bauer 2001; Corbin 1987).[4] Such availability results in regular lexical innovation; in its absence new words are produced only in a sporadic way dependent on *creativity* (i.e., *non-productive innovation*, cf. Bauer 2001).[5]

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4. The notion of *productivity* is frequently used with reference to the amplitude of the morphological family, that is, the quantity of words produced by a morphological process and confirmed at a given state of the language. However, this definition runs against the problems of distinguishing past productivity – that is, what a given morphological process has produced – and present productivity – that is, what a given process is capable of producing in the current state of the language.

5. It is not always easy to distinguish between *productivity* and *creativity*. However, while productivity implies creativity, the reverse is not true.

It is crucial to observe that French verbal prefixation was to some extent a productive process in the Old and Middle periods of the language, that is, until the end of the 15th century (Bourciez 1967; Dufresne & Dupuis 1998; Dufresne et al. 2000; Dufresne et al. 2001; Martin 1971). As has been shown by various studies, the prefixes a(d)- 'to', em-/en- (Lat. in) 'in', de(s)- 'from, off', e(x)- 'out of', par- 'by, all over', and re- 'back' were among the most productive during this period. However, from Old to Modern French, the language progressively lost the productivity of these verbal prefixes.

Table 6 below shows the special case of the prefix a(d)-, which has been systematically studied by Dufresne and Dupuis (1998) and by Dufresne et al. (2000, 2001). It shows the decrease over the centuries in new verbs created by the addition of a(d)- and thus the progressive loss of its productivity. Indeed, whereas in the 14th century 24 new verbs were added to the 312 recorded in Old French (10th–13th centuries) and mostly inherited from Latin, the 15th and 16th centuries were characterized by a decrease in the productivity of a(d)-. Thus, this productivity was lost almost entirely over the period between the 17th and the 20th centuries.[6]

The particular case of the prefix a(d)- reflects a widespread general loss of productivity in French verbal prefixes, although this took place at different periods for different prefixes. That is, whereas the productivity of some prefixes was lost in Old French, some others retained their productivity for several centuries. Gosselin (1999) shows for example that the productivity of re- 'back' (except in its iterative meaning) weakened towards the end of the 12th century, that of a(d)- 'to' and par- 'by, all over' towards the end of the 15th century, and that of de(s)- 'from, off' (except in its meaning of change of state) towards the end of the 16th century. On the other hand, and as evidenced by dictionaries, the productivity of the prefixes é-/ex- 'out of' and em-/en- 'in' remained steady, specifically in the formation of denominal verbs, until the 20th century, when it began to decrease progressively. Thus, in Modern French, only two prefixes still seem to be productive: dé(s)- with the meaning of change of state and ré- with the meaning of iterativity (see neologisms listed in TLFI[7] and Sablayrolles 2000). All the other prefixes hardly produce

Table 7. Examples of the prefix-verb combination in French

Prefixes	porter 'to carry'	mener 'to lead'	courir 'to run'	lever 'to lift'	voler 'to fly'	(se) rouler 'to roll'
ré-/re-/r(a)-	✓	✓	✓	✓	✓	–
em-/en- (Lat. inde)	✓	✓	✓	–	–	–
a(d)-	✓	✓	–	–	–	✓
dé(s)- / dis-	✓	–	–	✓	–	–
é-/ex-	–	✓	–	–	✓	–
sur-	–	–	✓	–	–	✓
em-/en- (Lat. in)	✓	–	–	–	–	–
tra-/trans-/tre-	–	–	✓	–	–	–
par-	–	–	–	✓	–	–
sou(s)-	–	–	–	–	–	–
entre-/inter-	–	–	–	–	–	–

any verbs in a consistent way except by analogy with other verbs, as is the case for alunir 'land on the moon' and apponter 'land on an aircraft carrier' created in the 20th century by analogy with atterrir 'land on the earth' (cf. DHLF[8] 2000).

The consequence of this loss for Modern French is that prefixed verbs survive in their remnant forms and new combinations between prefixes and verbal stems are not formed freely. That is, whereas certain verbs can still combine with a range of prefixes, most of them occur as fixed units with only one prefix. Table 7 above shows how 11 spatial prefixes may combine with 6 verbs of motion. If we look at these verbs and their combinability with various prefixes, we can observe that the verb porter 'to carry' is a fairly exceptional case in its ability to combine with 6 of the 11 prefixes. In contrast, the verb (se) rouler 'to roll', which combines with only 2 of the 11 prefixes, is much more typical of modern French verbs.

If we look at how the prefixes may combine with these verbs, we can see that none of the 11 prefixes can combine with all 6 verbs. Among the prefixes, only re- 'back' and em-/en- (Lat. inde) 'away' display general combinability in that they combine with 5 of the 6 verbs listed. The combinability of the other prefixes is not as great; this generalization holds not just for the verbs illustrated in this table but also for motion verbs in general.

To summarize this brief presentation, we can see that although Modern French possesses a wide variety of prefixes, they seem to form a cline going from those that maintain a certain vitality at one end, and those that no longer exhibit any productivity at the other end.

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6. During the long period between the 17th and the 20th centuries only eight verbs were created: amatir (17th); aménager, assainir, attendrir (18th); amocher, aveuilir (19th); alunir and apponter (20th) (Dufresne et al. 2000: 135).

7. Trésor de la Langue Française Informatisé (http://atilf.atilf.fr/tlfv3.htm)

8. Dictionnaire Historique de la Langue Française

The notion of *semantic transparency* will be used here with the meaning proposed by Dressler (1985), who defines it as a reciprocal relationship between form and meaning (or biuniqueness between form and meaning). Such a reciprocal relationship implies: (i) the phonological transparency of the morphological process, that is, to what extent a derived word preserves the segmental integrity of its constituent parts, and (ii) semantic transparency, that is, to what extent each constituent part of the derived word is semantically interpretable. A word which retains the composite character of form and meaning thus stands in contrast to a word which, being originally morphologically complex, does not really have a composite character in contemporary language. However, as emphasized by Dressler, this relation of reciprocity between form and meaning is a question of degree, so that transparency occurs on a cline and derived words are spread over a continuum ranging from more transparent to more opaque.

On the basis of the analysis of the morphological and semantic structures of prefixed verbs of motion in French, we can distinguish the following three degrees of transparency:

i.   + *transparent*: the relation between form and meaning is perceptible and comprehensible;

ii. ± *transparent*: the relation between form and meaning is not clearly perceptible, despite the formal link between the simple form and the derived form;

iii. – *transparent*: the relation between form and meaning is lost.

Table 8 below shows this graduated transparency revealed by motion verbs in French, at the morphological (+ form) and semantic (+ meaning) levels.

1st case: + *transparent*

The first case concerns verbs whose constituent elements – prefix and lexical root – are discernable both in their form and in their meaning. The transparency of these verbs results from the lexical autonomy of the base from which they are derived, which makes the boundaries between the constituent elements distinct and thereby facilitates their semantic interpretation.

Among these verbs, we first note those constructed from verbal roots – *ac-courir* (ac-courir) 'run to', *dérouler* (dé-rouler) 'roll out', etc. – which exist independently in the language without a prefix and for which the relation between simple verb and derived verb is clearly perceptible at the formal and semantic levels. That is, the meaning conveyed by the prefix (notion of Path) and the meaning conveyed by the verb root (notion of Manner) are clearly distinct from each other.

In this category, we also find verbs formed from nominal roots by the simultaneous addition of a verbal prefix and a verbal suffix (*-er* or *-ir*). The category includes the great majority of verbs which code in their root either the Figure –

Table 8. Degrees of semantic transparency in prefixed motion verbs

	prefix/base relation	pattern	examples
+ transparent	+ form / + meaning	[pref+V]	*ac-courir* 'run to' *dé-rouler* 'roll out' *é-couler* 'flow out' *re-tourner* 'turn round / over'
		[pref+N+er]	*dé-givrer* 'de-ice' *dé-raill-er* 'derail' *é-crém-er* 'skim' *em-pot-er* 'put in pot'
± transparent	+ form / – meaning	[pref+V]	*ac-céder* 'get to' *tre-saillir* 'shiver, tremble'
		[pref+N+er]	*dé-ball-er* 'unpack' *(se) tré-mouss-er* 'wriggle'
– transparent	– form / – meaning	[V]	*affluer* 'flow to' *déferler* 'unfurl, break' *dégringoler* 'tumble down' *dégouliner* 'trickle' *déployer* 'spread out' *échapper* 'escape'

dégivrer 'de-ice' and *écrémer* 'skim' – or the Ground – *dérailler* 'derail' and *empoter* 'pot'. Although these verbs can only exist as verbs if they are prefixed, the nominal nature of the base (*givre* 'ice', *crème* 'cream', *rail* 'rail', *pot* 'pot') greatly helps in the interpretation of the elements composing the verbs.

2nd case: ± *transparent*

The second degree of transparency involves prefixed verbs which retain a formal link with the lexical root from which they were derived, but whose morphological structure is not informative. In this category we can distinguish verbs formed from verbal bases (e.g., *accéder* 'to get to' derived from *céder* 'to give up', and *tresaillir* 'to shiver, to tremble' derived from *saillir* 'to jut out') and verbs formed from nominal bases by the addition of a prefix and a suffix (e.g., *déballer* 'to unpack' derived from the noun *balle* 'ball', and *trémousser* 'to wriggle' derived from the noun *mousse* 'froth, mousse'). Despite the formal link that can be established between the lexical base and the prefixed verb, the meaning of these verbs is not predictable from the meaning of their parts, and so they are interpreted as a whole.

3rd case: – *transparent*

The third category includes verbs which are diachronically derived from either nominal or verbal roots, but in which the link between form and meaning is no longer transparent in Modern French. Table 9 gives three motion verbs which were derived from a nominal base by the addition of a prefix and verbal suffix, and

which have lost the compositionality of their meaning. The morphological and semantic opacity of these verbs is essentially due to the fact that the lexical roots from which they were constructed no longer exist in the lexicon of contemporary French, and thus the prefix and the lexical root have fused both morphologically and semantically.

The first two verbs – *dégringoler* 'tumble down', *dégouliner* 'trickle' – were derived by means of the prefix *dé(s)-* indicating the point of origin from the nouns *gringole* 'hill' and *goule* 'throat, gullet'. Now obsolete, these nouns can no longer be isolated morphologically, and their meaning has merged with that of the prefix *dé(s)-*. These verbs are therefore interpreted as single units and designate downward motion carried out in a certain manner: *dégouliner* means 'flow slowly' (of a glutinous or viscous liquid), and *dégringoler* means 'descend precipitously by little successive jumps'. As for the verb *échapper* 'escape, run away', it is diachronically composed of the prefix *é-/ex-* indicating the notion of 'go out' and of the noun *chape* 'cape' (present in the word *chapeau* 'hat'). Originally, the verb signified literally 'go out of the cape', suggesting 'leave one's cape in the hands of one's pursuers' (DHLF 2000). Nevertheless, the motivation between form and meaning has been lost and the verb *échapper* is nowadays understood in its general meaning of 'escape from a place, avoid'.

Table 10 provides some examples of verbs constructed from verbal bases: *affluer*, derived from *-fluer* with the prefix *a-* indicating the point of arrival, and *déferler* and *déployer*, derived from *-ferler* and *-ployer* with the prefix *dé-* indicating the point of departure.

Although they were autonomous verbs in Old French and are still attested in some contemporary dictionaries, the lexical bases from which these verbs were di-

Table 9. Opaque denominal verbs

Verb		Lexical base
dégringoler 'tumble down'	<	† gringole 'hill'
dégouliner 'trickle'	<	† goule 'throat, gullet'
échapper 'escape, run away'	<	† chape 'cape'

Table 10. Opaque deverbal verbs

Verb		Lexical base
affluer 'flow to'	<	? fluer 'flow'*
déferler 'unfurl, break'	<	? ferler 'furl (a sail)'
déployer 'spread out'	<	? ployer 'fold'

*The lexical root *-fluer* is present in other prefixed verbs such as *confluer* 'flow together', *influer* 'flow in' and *refluer* 'flow in the opposite direction'.

achronically derived are no longer in use in their simple form in Modern French. The loss of the composite nature of these verbs has had an impact on their underlying semantic structure such that the meanings of their original morphemes have merged. As a result, these verbs are perceived as being semantically complex in that they conflate both Path (originally in the prefix) and Manner of motion (originally in the verb root): *affluer* means 'flow in abundance towards', *déferler* means 'set (spread) a sail' or 'break into spray' (referring to waves), and *déployer* means 'develop to its full extension'.[9]

5. The typological hybridization of French

The findings of this study show that French does not correspond to a consistent type within Talmy's typology and furthermore exhibits a greater variety of lexicalization patterns than had previously been recognized.

More precisely, the study confirms that French, as was initially established by the typology, displays properties of a verb-framed language, reflected notably in the encoding of Path of motion in the verb and of Manner of motion in a gerund. However, French also displays the properties of a satellite-framed language, by expressing Path in a prefix. Furthermore, the process of prefixation allows not only the Manner of motion but also the Figure and even the Ground to be expressed in the verb, through the formation of verbs encoding externally caused motion.

The diachronic sketch suggests that the satellite-framed pattern is the remnant of an earlier typological system, that was predominant in Old French. Due to the loss of productivity of verbal prefixes, some verbs have shifted over the centuries towards the verb-framed pattern, while others remain in the satellite-framed pattern in the contemporary language (cf. Kopecka 2004, in press). The synchronic consequence of this typological evolution is that French verbs of motion form a continuum that can be represented as shown in Table 11.

This distribution over the continuum accounts for the typological complexity of contemporary French. Verbs on the left represent the typologically predicted

9. Considering different aspects of prefix-verb relations, we might notice that the vitality of the prefixation process in French, and thus of the encoding strategy referred to as satellite-framed, is weaker than that of the same process in Germanic or Slavonic languages. Thus, in contrast to French, the same process is available in Germanic or Slavonic languages for productive and semantically transparent word formation, involving a wide range of combinations between satellites (particles or prefixes) and verbs of motion. It may be noticed, however, that in some Slavonic languages, such as Serbo-Croatian, some Path prefixes have also fused with the verbs of motion so that these verbs are perceived by speakers as monomorphemic (Dan Slobin, personal communication February 2003).

Table 11. Typological continuum of verbs of motion in French

Satellite-framed pattern		Verb-framed pattern
←――――――――――――――――――――――→		
$[\text{PREF}_{path}] - [V_{manner}]$	$[V_{path + manner}]$	$[V_{path}]$
ac-courir	affluer	arriver
dé-rouler	déferler	descendre
é-couler ...	échapper ...	entrer ...
$[\text{PREF}_{path}] - [N_{figure}] - \text{er}$		
é-crèm-er		
é-trip-er		
dé-peupl-er ...		
$[\text{PREF}_{path}] - [N_{ground}] - \text{er}$		
ac-croch-er		
em-pot-er		
dé-raill-er ...		

satellite-framed pattern with Path encoded in the prefix, while verbs on the right represent the verb-framed pattern, of which some (such as *arriver, descendre,* and *entrer*) are the result of the lexical fusion of prefixes and verbal roots. For certain verbs, this process occurred at a very early stage of the language, going back sometimes to Latin (cf. Nyrop 1936). In the middle of the continuum are the verbs which, through lexical fusion of their original morphemes, have merged two semantic elements, Path and Manner, in their root.

This typological heterogeneity invites a re-evaluatation of French, and possibly of other Romance languages, in the typology of Motion events proposed by Talmy. Indeed, while the typology classifies Romance languages as *verb-framed languages,* the study of French clearly shows that it still has properties of a *satellite-framed language.* Considering this intra-linguistic typological duality, rather than classifying languages as belonging to one or the other type, it may be more appropriate to establish a *typology of patterns* (or of encoding strategies) to classify the types of morphosyntactic devices employed by languages for the encoding of Path, which are responsible for the observed mappings of semantic elements of motion events (i.e., Manner, Figure, Ground) onto linguistic structure. A typological view of this sort would have the advantage of taking into consideration possible typological complexity within a particular language which, as is the case for French, can use one strategy or the other, depending on the tools available in the system. Furthermore, this view could consider, much more finely than has been done so far, the possible sources of such typological complexity in a language (e.g., evolution from one pattern to another, borrowings, language contact, etc.).

6. Conclusion

The study presented here has aimed at examining the structure of motion verbs in French in light of the Motion event typology proposed by Talmy (1991, 2000) and at exploring the intra-linguistic typological complexity of this language. It has demonstrated the existence of two patterns in French: one consisting of encoding the Path in the verb (and which generally characterizes all Romance languages) and another consisting of encoding the Path in satellites – prefixes – generally considered to be characteristic of the Germanic and Slavonic languages. Moreover, this study has suggested that the process of lexicalization patterns needs to be understood in the broader context of typological change and of the inner typological dynamics of the language.

Specifically, although French can use the satellite coding strategy, the low productivity of this pattern in contemporary French contrasts with the high productivity of this same pattern in the Germanic and Slavonic languages, and to some degree in Old French. In French, the satellite pattern is actually the remnant of an earlier system which was productive in Old French, but which has progressively lost its productivity over the centuries. This loss has had a decisive impact on the evolution of the French typological system, which has changed from a predominantly satellite-framed pattern to a predominantly verb-framed pattern, notably through the process of lexical fusion between prefixes and verbal roots. As a consequence of this diachronic shift, contemporary French is a typologically hybrid system in which motion verbs are spread over a continuum ranging from the satellite-framed pattern to the verb-framed pattern.

References

Amiot, D. (2002). Re-, préfixe aspectuel? In V. Lagae, A. Carlier, & C. Benninger (Eds.), *Cahiers Chronos* 10. *Temps et aspect: de la grammaire au lexique,* 1–20.

Aurnague, M., & Plénat, M. (To appear). La préfixation en é- et la relation de partie à tout. *Carnets de Grammaire.*

Bauer, L. (2001). *Morphological productivity.* Cambridge: Cambridge University Press.

Béchade, H. (1992). *Phonétique et morphologie du français moderne et contemporain.* Paris: Presses Universitaires de France.

Boons, J.-P. (1991). Morphosyntaxe comparée des verbes dénominaux préfixés dans en- dans le français d'avant 1600 et d'après 1900. In *Actes du 18e Congrès international de linguistique et philologie romanes.* Tübingen: Max Niemeyer Verlang.

Bourciez, E. (1967). *Éléments de linguistique romane.* Paris: Klincksieck.

Corbin, D. (1987). *Morphologie dérivationnelle et structuration du lexique* (2 vols). Lille: Presses Universitaires de Lille.

Corbin, D. (1997). La représentation d'une "famille" de mots dans le Dictionnaire dérivationnel du français et ses corrélats théoriques, méthodologiques et descriptifs. *Recherches Linguistiques de Vincennes, 26*, 5–38.

Darmesteter, A. (1932). Traité de la formation de la langue française. In A. Hatzfeld, A. Darmesteter, & A. Thomas (Eds.), *Dictionnaire général de la langue française du XVIIIe siècle jusqu'à nos jours* (9e éd., pp. 1–300). Paris: Librairie Delagrave.

Dressler, W. U. (1985). On the predictiveness of natural morphology. *Journal of Linguistics, 21*, 321–337.

Dufresne, M., & Dupuis, F. (1998). The role of verbal-prefixes and the status of grammatical change. Paper presented at the *DIGS4*, York, Angleterre.

Dufresne, M., Dupuis, F., & Longtin, C.-M. (1998). A- comme aspect dans l'histoire du français. Paper presented at the Conference of *the Association Canadienne de Linguistique*, Ottawa.

Dufresne, M., Dupuis, F., & Longtin, C.-M. (2001). Un changement dans la diachronie du français : la perte de la préfixation aspectuelle en *a*. *Revue Québecoise de Linguistique, 29* (2), 33–54.

Dufresne, M., Dupuis, F., & Tremblay, M. (2000). The role of features in historical change. In S. Dworkin & D. Wanner (Eds.), *New approaches to old problems issues in Romance historical linguistics* (pp. 129–149). Amsterdam: John Benjamins.

Gary-Prieur, M-N. (1976). *Déboiser* et *déboutonner*: Remarques sur la construction du sens des verbes dérivés par *dé-*. In J. C. Chevalier (Ed.), *Grammaire transformationnelle : syntaxe et lexique* (pp. 93–137). Villeneuve-d'Ascq: Publications de l'Université de Lille 3.

Gosselin, D. (1999). Une analyse en morphologie configurationnelle: le préfixe re- en ancien français. Thèse de doctorat. Université du Québec à Montréal.

Kopecka, A. (2004). Étude typologique de l'expression de l'espace: localisation et déplacement en français et en polonais. Thèse de Doctorat. Université Lumière Lyon 2, France.

Kopecka, A. (in press). From a satellite- to a verb-framed pattern: A typological shift in French. In H. Cuyckens, W. De Mulder, & T. Mortelmans (Eds.), *Variation and change in adpositions of movement*. Amsterdam: John Benjamins.

Marchello-Nizia, C. (2002). Prépositions françaises en diachronie. *Lingvisticæ Investigationes, 25* (2), 205–221.

Martin, R. (1971). *Temps et aspect. Essai sur l'interprétation des temps narratifs en moyen français.* Paris: Klincksieck.

Nyrop, K. (1936). *Grammaire historique de la langue française*, Vol. 3: *Formation des mots*. Copenhague: Gyldendalske Boghandel Nordisk Forlag.

Riegel, M., Pellat, J-C., & Rioul, R. (1998). *Grammaire méthodique du français*. Paris: Presses Universitaires de France.

Sablayrolles, J-F. (2000). *La néologie en français contemporain: examen du concept et analyse de productions néologiques récentes*. Paris: Champion.

Slobin, D. I. (1996). Two ways for travel: Verbs of motion in English and Spanish. In M. Shibatani & S. A. Thompson (Eds.), *Grammatical constructions: Their form and meaning* (pp. 195–217). Oxford: Oxford University Press.

Slobin, D. (2004). The many ways to search for a frog: Linguistic typology and the expression of motion events. In S. Strömqvist & L. Verhoeven (Eds.), *Relating events in narrative: Topological and contextual perspectives* (pp. 219–257). Mahwah, NJ: Lawrence Erlbaum Associates.

Talmy, L. (1985). Lexicalization patterns: Semantic structure in lexical form. In T. Shopen (Ed.), *Language typology and semantic description*, Vol. 3: *Grammatical categories and the lexicon* (pp. 36–149). Cambridge: Cambridge University Press.

Talmy, L. (1991). Path to realization: A typology of event conflation. In *Proceedings of the Seventeenth Annual Meeting of the Berkeley Linguistics Society* (pp. 480–510). Berkeley, CA: Berkeley Linguistic Society.

Talmy, L. (2000). *Toward a cognitive semantics*, vol. 2. Cambridge, MA: The MIT Press.

Dictionaries

Le Petit Robert (2002). *Dictionnaire alphabétique et analogique de la langue française.* Paris: Dictionnaires Le Robert.

Le Robert (2000). *Dictionnaire historique de la langue française* (DHLF), sous la direction d'Alain Rey. Paris: Dictionnaires Le Robert.

Trésor Informatisé de la Langue Française (http://atilf.atilf.fr/tlfv3.htm).