

# A Study of Lexicalization Patterns for Motion Verbs in English and French Based on Boundary Constraints

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**Abstract:** Talmy presents his two-way typology of verb-framed and satellite-framed languages based on his motion event. The typology is determined by how the Path of movement is expressed. In verb-framed languages, Path is expressed by the main verb, whereas in satellite-framed languages, Path is expressed by an element associated with the verb. French as a typical V-language expresses both the fact of Motion and the Path in the verb itself, whereas English as a typical S-language expresses both Motion and the Manner in the verb, and path is expressed by an element associated with the verb. However, Talmy's two-way typology is too simplistic. English and French do not behave in the same way as Talmy's description. This study proposes boundary constraints on lexicalization between English and French motion verbs. We collected 150 English motion verbs and 100 French motion verbs to examine their lexicalization patterns. The results show that English prefers to incorporate both Path and Manner in verbs when the path is coincident with the ground, while it uses manner verbs occurring with path expressions when the path is not coincident with the ground. About half of French motion verbs are manner verbs and they tend to occur with path phrases when no boundary crossing is indicated.

**Keywords:** Motion Event, Lexicalization Pattern, Bounding Constraint

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## 1. Introduction

Talmy first proposed a typological classification of motion event over thirty years ago [1-2]. The basic directed motion event is analyzed as having four semantic components: Figure<sup>1</sup>, Ground, Motion and Path. In addition to these internal components, two external components are included: Manner and Cause. These different semantic components are expressed by different syntactic units or morphemes. By examining whether Path is expressed by verbs or satellites, Talmy presents his two-way typology of verb-framed and satellite-framed languages [3-4]. In verb-framed languages (V-languages), Path is expressed by the main verb, whereas in satellite-framed languages (S-languages), Path is expressed by an element (satellite) associated with the verb. For instance, French as a typical V-language expresses both the fact of Motion and the Path in the verb itself, whereas English as a typical S-language expresses both Motion and the Manner in the verb. This

influential two-way typology has sparked a great deal of researches in lexicalization patterns of different languages. However, many studies have revealed that motion event encoding in many languages that do not fit into Talmy's typology [5-14]. Slobin extended Talmy's typology to include a third class of equipollently-framed languages such as Chinese in which path and manner are expressed by equivalent grammatical forms [8]. Even the typical verb-framed language French does not behave in the same way as Talmy's description [15]. It has verbs that encode manner of movement (e.g. *marcher* 'walk,' *courir* 'run') and some of these verbs also occur with what appear to be satellites (e.g. *rouler sur les routes* 'roll along the road'). What's more, English as a typical satellite language also has path verbs. As is noted, there is typologies leak. Slobin and Hoiting further proposed boundary-crossing constraint on verb-framed languages [5]. This study extends the boundary constraint to include boundary crossing and boundary coincidence. We collected 150 English motion verbs and 100 French motion verbs to examine their lexicalization patterns based on boundary constraints. The present examination of

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<sup>1</sup>The semantic components are capitalized in their initial letters in this paper.

English and French verbs of motion is part of a broader typological framework that encompasses a range of motion event components and presumably applies to all languages.

## 2. Boundary Constraints

The difference between English and French in lexicalization for an event motion lies in the expression of Path. There are boundary constraints on Path expression, which consists of two principles—the principle of boundary coincidence and the principle of boundary crossing.

### 2.1. Boundary Coincidence Constraint

The principle of boundary coincidence determines the state of boundedness. The term of boundedness proposed by Talmy refers to quantity bounded at both ends [4]. When it is applied to an event motion, the bounded means that the path itself and the time taken to carry out it are both bounded. Talmy gives an example to illustrate the boundedness. In the motion event descriptions such as I walked through the tunnel in 10 minutes and I walked along the shore for 10 minutes, both express the time period of 10 minutes and the traversed path is bounded (perhaps even the same time period and length). The difference between these two sentences is that the former indicates the reference object with respect to which the path of motion occurs has a physical or conceptual boundary coincident with the beginning and ending points of the path, while the latter indicates that the reference object extends beyond the path ending point [4]. So the first sentence indicates a bounded motion event. When a bounded event occurs, it is possible that both English and French encode path in the motion verbs.

### 2.2. Boundary Crossing Constraint

Slobin and Hoiting have noted that one of the most salient characteristics of verb-framed languages is the preference to mark a boundary crossing with a verb, rather than by some other device, and therefore the main verb must encode a boundary crossing [5]. In order to add manner to such events, subordinate construction is required. To illustrate for it, we give a set of examples of English and French:

- a. The motorbike hurtled along a road.  
La moto fonça sur une route.
- b. He ran into the house.  
Il est entré la maison en courant.

With no boundary crossing prediction, the expression of the former is possible in French. But sentence d involves a path in which a boundary crossing is marked by the phrase-into the room. When translated into French, a path verb *entrer* that encodes a boundary crossing is used and manner is added by an adjunct- *en courant*. Talmy distinguishes three positions along the path that can be foregrounded: initial, medial and final windowing. As three positions along the path are concerned, the following schema in Figure 1 can show the bounding constraints on the different parts of path.

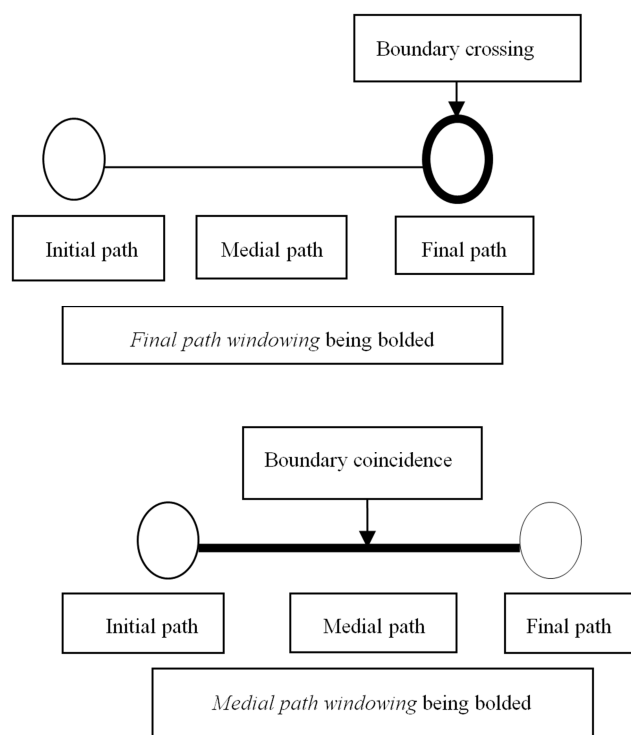


Figure 1. Boundary constraints on path expression.

## 3. Boundary Constraints on Lexicalization of Motion Verbs in English and French

### 3.1. Data Collection

150 English motion verbs were collected from Levin's *English Verb Classes and Alternations* [16] and 100 French motion verbs from the *Dictionnaire de La Langue Française Larousse* published by the Foreign Language Teaching and Research press in 2001 [17]. In Talmy's typology, French is a prominent example of V-languages where path is encoded in verbs. However, we've noted that among 100 French motion verbs, there are 45 path verbs and 55 manner verbs where manner is encoded in verbs. English as a typical S-language also has path verbs. Our discussion will focus on those motion verbs that do not fit into Talmy's typology.

All the path phrases accompany verbs of motion were labeled and then we classified them into three groups: initial path phrases, medial path phrases and final path phrases. At last, the number of verbs plus path phrases were counted.

### 3.2. Boundary Coincidence Constraint on English Path Verbs

It is worthy to note that English has a great number of path verbs that derive from old French such as *ascend*, *depart* and *descend*. We have in total 15 English path verbs borrowed from French. Except those borrowed path verbs, English does have its native path verbs. In English, we have expressions such as *she became the first English woman to swim the Channel*. Here the verb *swim* indicates the manner of

swimming and the crossing path. We've collected 14 English motion verbs that incorporate manner and path and 116 corresponding motion events from British National Corpus

(BNC) [18]. Table 1 shows the English verbs that express both manner and path. The immediately following noun phrases and their tokens are also indicated.

**Table 1.** English path-and-manner verbs and their following noun phrases.

English path-and-manner verbs	Noun phrases
Gump	the fence (10); the gap (6); the platforms (1); hole (1)
Swim	the river (3); the Chanel (6); the lakes (1); a book (1)
Leap	the gate (2);
Fly	the Atlantic (5)
Climb	the hill (20); the wall (18)
Sail	the Atlantic (3); the seas (2)
Cruise	the canals (2); the coast (1)
Wade	the river (2)
Wander	the streets (10)
Roam	the streets (15); the hills (1); shops/rooms (2)
Ramble	the fells (1)
Vault	the fence (3); the gate (1); wall (1)

We can see from the table 1 that 86 motion events mark a crossing or over path with the main verbs, accounting for about 70% of the total motion events that encode both path and manner with a verb. The crossing or over path indicates a clear directional of boundary coincidence. Therefore, it is possible for an English motion verb to incorporate both manner and path when the ground has a boundary coincidence with the beginning and ending points of the path.

### 3.3. Boundary Crossing Constraint on French Manner Verbs

French has 55 manner verbs that do not behave as what Talmy describes. As we've mentioned, Slobin and Hoiting argue that V-languages prefer to marking a boundary crossing with a verb. But what if there is no boundary crossing? French tends to use manner verbs and encode the path by some path phrases. To verify this, we use these French manner verbs as key words to collect 142 motion event descriptions in the français - Université de Leipzig corpus. All the path phrases associated with the verbs of motion are labeled and then we classify them into three groups: initial path phrases, medial path phrases and final path phrases. The number of verbs plus path phrases is counted.

**Table 2.** French manner verbs plus path phrases.

French manner verbs plus path phrases	Token (frequency)
Initial path	0 (0.00%)
Medial path	80 (73%)
Final path	62 (56%)

Table 2 shows that French manner verbs never occur with initial path phrases, 73% occur with medial path phrases (e.g., *sur/ le long de (along)*) and 56% with final path expressions (e.g., *vers (to/towards)*, *à (to)*). Among those medial path phrases, only 15% indicate a crossing boundary by the phrase of *au travers de (across)*. Therefore, we can conclude that it is also possible that French expresses manner in verbs and path is expressed by some path phrases when the motion event is not marked by a boundary crossing.

## 4. Conclusion

Talmy's typology is based on the most characteristic and frequent lexicalization patterns used by a language. In Talmy's typology, a verb-framed language such as French tends to use path verbs with subordinate manner expressions, and as a satellite-framed language such as English tends to use manner verbs with associated path forms. However, there is typological leak. Slobin and Hoiting further proposed boundary-crossing constraint on verb-framed languages. This study extends the boundary constraint to include both boundary crossing and boundary coincidence. By examining lexicalization patterns of 150 English motion verbs and 100 French motion verbs, we've found that French prefers to mark a boundary crossing with a motion verb, and when no boundary crossing is indicated, 73% of French manner verbs occur with medial path phrases and 56% occur with final path phrases. In addition, there is boundary coincidence constraint on lexicalization of English motion verbs. Fourteen English motion verbs are discovered to incorporate both manner and path, among which 70% encode a crossing or over path indicating a clear directional of boundary coincidence. When on boundary coincidence is marked, English tends to use manner verbs with path expressions.

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