# MOTION IN ENGLISH AND SPANISH:
A PERSPECTIVE FROM COGNITIVE LINGUISTICS,
TYPOLOGY AND PSYCHOLINGUISTICS

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To my family

Abstract

Motion is central to human experience; it is pervasive in our daily lives and also in our communicative needs. However, it is a well established fact that languages differ in their linguistic expression of motion. Talmy's (1985, 2000) work distinguishes two different types of languages according to the way the different elements of a motion event are mapped onto linguistic elements: satellite-framed and verb-framed languages. English and Spanish are often taken as examples of this typological difference. English, as a satellite-framed language, expresses the core component of motion, i.e., the Path or trajectory of motion, in satellites (e.g., *up*, *down*) or in prepositional phrases (e.g., *into/out of the house*), leaving the verb slot free to encode Manner-of-motion. Spanish, as a verb-framed language, typically expresses Path in the main verb while relegating the expression of Manner to adjuncts (e.g., *entrar/salir corriendo* lit. 'enter/exit running').

Talmy's seminal work has engendered a great deal of research and debate in the literature on motion event descriptions over the last two decades. Despite the vast amount of research on the linguistic expression of motion events, the fact that motion verb roots might encode information apart from Path and Manner is often overlooked, as are minor lexicalisation patterns that might occur. Furthermore, scholars, more often than not, have neglected the study of path verbs in favour of the study of manner verbs, as the differing expression of Manner has so far been the most interesting diverging point between satellite- and verb-framed languages. Finally, hardly any work has been devoted to an in-depth analysis of the semantics of motion verb lexicons in both verb- and satellite-framed languages beyond the comparison of the motion verbs found in novels or elicited orally in the two types of language.

The present thesis aims at bridging the gap in the existing literature by addressing the semantics of English and Spanish motion verbs. In the first part of this dissertation, a systematic and detailed account of the semantics of English and Spanish motion verb lexicons from a contrastive point of view is provided. The patterns of general conflations are explored, as well as more subtle path notions and fine-grained manner information which can be conveyed by motion verbs in these

two languages. Comparison between English and Spanish leads to the identification of some similarities: (a) conflation of Motion plus one additional semantic component, either Manner or Path, is the most characteristic lexicalisation pattern of both motion verb lexicons; (b) both languages have path verbs which express, at minimum, 13 different types of Path; among these, the most frequently lexicalised types of Path are 'Away from G', 'Up/Onto G – Upwards', 'To/towards G' and 'Down from/to G – Downwards', whereas the least frequent is 'Out of G'; and (c) both languages possess many more walking verbs than running and jumping verbs. These tendencies suggest that there are important similarities in how English and Spanish, and possibly other verb- and satellite-framed languages, lexicalise the domain of motion in their verb roots. In addition, some crosslinguistic differences are noted: (a) English manner-of-motion verbs outnumber those of Spanish and tend to exploit some manner parameters much more often than Spanish manner verbs (e.g., manner information about the mental and physical state of the Figure and details about the way the Figure moves its legs while walking, motion using vehicles, motion while dancing); and (b) the Spanish path verb lexicon is larger in size than the English one, although both languages are able to express similar types of Paths.

The second part of this thesis aims to investigate an important subdomain of motion, that of human locomotion, using experimental methods. Three studies are reported: a definition and feature listing task, a free verb listing task, and a verb-categorization rating task. These studies offer interesting insights into how English and Spanish organise their motion verb lexicons and into the complex semantics of human locomotion verbs. In addition, the findings provide empirical support for some of the observations from the linguistic analysis undertaken in the first part of this thesis, and they suggest that, rather than instantiating a single motor pattern, some motion verbs might better be considered as a combination of motor patterns.

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CHAPTER 1

INTRODUCTION

1.1. The problem

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1.1. The problem

Motion is central to human experience; it is pervasive in our daily lives and also in our communicative needs. It seems to be a universal concept present in all the languages of the world. However, it is a well established fact that languages differ in their linguistic expression of motion. Talmy's (1985, 2000a, 2000b) work distinguishes two different types of languages, i.e., satellite-framed and verb-framed languages, according to the way the different elements of a motion scene are mapped onto linguistic elements. English and Spanish are often taken as examples of this typology. English, as a satellite-framed language, expresses the core component of motion, i.e., Path or the trajectory of motion, in satellites (e.g., *up*, *down*) or in prepositional phrases (e.g., *into/out of the house*), leaving the verb slot free to encode Manner-of-motion. Spanish, as a verb-framed language, typically expresses Path in the main verb while relegating the expression of Manner to adjuncts (e.g., *entrar/salir corriendo* lit. 'enter/exit running'). However, it should be borne in mind that typologies reflect tendencies rather than absolute differences among languages (Berman & Slobin, 1994); thus, both languages have path-conflating and manner-conflating verbs in addition to other verbs which encode other semantic information pertaining to the motion event, as noted by Talmy and others.

Talmy's typological work has inspired a great deal of research on motion event descriptions over the last two decades. Such research has taken for granted that the main difference between satellite-framed and verb-framed languages resides in their differential encoding of Manner of motion; Manner is readily encoded in verbs in satellite-framed languages whereas it is optional in verb-framed languages. As a consequence, much less research attention has been given to the Path component, which, as core of the motion event, is encoded either in the verb or in satellites. Moreover, research has frequently overlooked the other possible semantic conflations (e.g., Ground, Figure) that might exist in the motion verb lexicons of satellite- and verb-framed languages, thus impoverishing their crosslinguistic analyses.

Regarding manner verbs, Slobin (1997: 459) has pointed out that languages seem to have a 'two-tiered' lexicon of manner-of-motion verbs: (1) a general one, or

superordinate level, represented by everyday verbs such as *walk*, *run*, *jump*, *fly*, etc.; and (2) a more specific and expressive level consisting of different ways of walking, such as *stroll*, *wander*, or *shuffle*; different ways of running such as *sprint* or *jog*, etc. Research based on elicited narratives and novels has shown that English possesses a very extensive and elaborated second level whereas Spanish's manner verb lexicon is not as rich and mainly consists of general manner-of-motion verbs. In relation to path verbs, Özçalişkan (2004: 85) has claimed that path verb lexicons of both satellite- and verb-framed languages 'form a closed lexical category that does not provide many options for elaboration' and thus, both typological groups may possess an approximately similar number of path verbs. However, her claims have not been fully addressed by crosslinguistic research yet.

As a final point, despite the vast amount of research on the linguistic expression of motion events in English and in Spanish, and of the claims about the semantics of their manner verbs, hardly any research has been devoted to an in-depth analysis of their motion verb lexicons, and a comparative study is, to our knowledge, nonexistent. This dissertation aims at filling the gap in the existing literature by providing a systematic and detailed account of the semantics of both English and Spanish motion verb lexicons. A better understanding of the semantics of motion verbs in these languages is of primarily importance for crosslinguistic research on motion event descriptions in general, and for research investigating the effects that differing semantic patterns may have on non-linguistic cognition.

1.2. Aims and methodology

The primary goal of this work is to provide a comparative account of the semantics of a substantial part of the English and the Spanish motion verb lexicons, focussing specifically on self-agentive and non-agentive motion verbs (Talmy, 2000b: 28). Our starting point is Talmy's general semantic components for motion: Motion, Figure, Ground, Path, Manner and Cause. Our analysis, moreover, delves into the broad categories of Path and Manner so as to look for more subtle differences in their motion lexicons; for that purpose, some types of Path (e.g., Berthele, 2004; Wälchli,

2001) and a number of fine-grained manner categories or parameters (e.g., Ibarretxe-Antuñano, 2006a; Özçalişkan, 2004; Slobin, 2000, 2005), which have been identified by scholars working on this field, will be used. On the whole, this thesis seeks to provide an answer to the following general research questions: (1) which semantic notions are generally conflated in English and Spanish motion verbs? (2) Do English and Spanish have comparable path verb lexicons? In size? In semantic nature? And (3) do English and Spanish lexicalise similar manner-of-motion information in their verbs? Which manner details are more often exploited in each language? Does English exhibit greater manner granularity for all subdomains of motion?

A total of 376 motion verbs in English and 257 in Spanish were compiled with the help of available verb lists in the existing literature (Cifuentes-Honrubia, 1999; Levin & Rappaport-Hovav, 1992; Levin, 1993; Morimoto, 2001; and Snell-Hornby, 1983), monolingual and bilingual dictionaries, and thesauri. The motion verbs under the scope of the present investigation include general motion verbs (i.e., no specific semantic information apart from the Motion component, such as the Spanish verb *moverse* 'to move oneself', and the English *move*), accompany verbs (cf. Levin (1993), e.g., *escoltar* 'to escort', *guiar* 'to guide', *escort, guide, lead*), and path verbs (e.g., *entrar* 'enter', *salir* 'exit', *arrive, come, depart, enter, exit, go*) as well as manner verbs. Manner verbs pertain to (a) human and animal locomotion (e.g., *andar* 'walk', *correr* 'run', *saltar* 'jump', *walk, run, fly, hop, pronk, slither*), (b) motion using a vehicle (e.g., *conducir* 'to drive', *navegar* 'to navigate', *bike, canoe, ferry, ship*), (c) motion while dancing (e.g., *bailotear* 'a careless way of dancing', *waltz, foxtrot, twist*), (d) motion of physical objects or inanimate entities (e.g., *rodar* 'roll', *oscilar* 'oscillate', *revolve, roll, spin, shake, swing*) and (e) change of posture (*acostarse* 'to lay oneself down', *levantarse* 'to stand up', *arquearse* 'to bend oneself', *kneel, lean, recline, twist*). Drawing from dictionary definitions, each motion verb will be analysed in terms of both the general and the more specific semantic information which seems to be conveyed by the verb. Then, the semantics of both languages will be compared and contrasted in terms of (a) their general semantic distribution, (b) their path verbs, and (c) their manner verbs. Taken as a whole, this methodology will enable us to better understand how the lexicon for motion is organised in these two languages, to point out both crosslinguistic

differences and similarities, and to formulate hypotheses for further psycholinguistic research.

To address all the hypotheses and research questions that emerge from the semantic analysis falls outside the limits of this dissertation as such an enterprise would need a lifetime to be accomplished. The second part of this thesis, however, aims to investigate an important subdomain of motion, that of human locomotion, using experimental methods. This subdomain might be structured around three motor patterns pertaining to motion on land: walk, run and jump. Walking seem to be the most important and basic human motor pattern; it is the default way of moving for humans. In contrast, running and jumping seem to be more peripheral activities as people do not typically run or jump in order to go somewhere. Three psycholinguistic studies will explore the semantics of human locomotion verbs and the organisation of this subdomain of motion. The first study will be aimed at exploring the defining features for each motor pattern, that is, which specific manner details define the actions of walking, running and jumping. The goal of the second study will be to provide psycholinguistic validation for some observations deriving from the semantic analysis, namely, the claim that English and Spanish may organise their human locomotion verb lexicons in a similar way (i.e., a larger number of walking verbs over running and jumping verbs) despite the larger number of walking, running and jumping verbs found in English. Finally, the third study will be aimed at finding out the specific motor pattern which is denoted by a list of English and Spanish motion verbs from our corpus.

1.3. Outline of the thesis

The present thesis is further organised into six chapters. Chapter 2, Chapter 3 and Chapter 4 offer an extensive literature review on the theoretical background of this dissertation, on the bulk of research on the topic of motion, and on the different analyses and classifications of motion verbs which have been put forward. Chapter 5 and Chapter 6 address the semantics of the English and Spanish motion verb

lexicons. Finally, Chapter 7 provides a summary of the key findings and suggests avenues for future research.

Chapter 2 provides a brief but general overview of the theoretical background of this dissertation. Section 2.1 deals with the birth and main tenets of the Cognitive Linguistic enterprise in general, and with the main tenets and lines of research of Cognitive Semantics, with special attention to Conceptual Semantics. In Section 2.2, Talmy's theory of lexicalisation patterns for motion is presented. The main concern of Talmy's work is the exploration of the systematic relations between meaning and linguistic forms in order to find out whether languages exhibit a small number of patterns (i.e., a typology) or a single pattern (i.e., a universal). In his exploration of the domain of motion, he proposes two typologies: the three-way and the two-way classifications of languages, which result from the two ways of looking at the relation between meaning and linguistic forms. By looking at which semantic information gets typically expressed in verb roots, he proposes the typology of path-conflating, manner-conflating and figure-conflating languages; by looking at which linguistic forms typically encode the Path of motion, the typology of verb-framed and satellite-framed languages is put forward. Section 2.3 presents two proposals for reformulating Talmy's binary typology so as to account for both a larger number of languages and for the observations that languages within the same typological group also show differences in the expression of Manner and of Path. Finally, in Section 2.4, Sapir and Whorf's linguistic relativity hypothesis and a weaker version of this hypothesis, Slobin's thinking-for-speaking hypothesis are presented. The domain of motion is suitable for exploring how language-specific semantic patterns influence the way speakers of a language talk and think about motion.

Chapter 3 summarises the whole gamut of research influenced by the Talmian theory of lexicalisation patterns for motion events. Such research might be grouped into two blocks: Slobin's thinking-for-speaking research (Section 3.2) and linguistic relativity research (Section 3.3). Slobin's hypothesis of thinking-for-speaking encompasses several lines of research in the attempt to account for the pervasive effects that language use has on mental processes tied to language (i.e., speaking, writing, translating, gesturing, etc). Section 3.2 reviews research on the impact that lexicalisation patterns have on narrative styles of verb- and satellite-framed

languages and on the translation process. Moreover, research on sign languages and co-speech gestures, on language acquisition, and on language processing is also reviewed. Linguistic research on the expression of motion has documented habitual ways of speaking and writing about motion which has served as foundations for further investigating how children acquire these language-specific patterns, the effects of these patterns in language processing and whether the effects go beyond language and have an impact on non-linguistic cognition. In Section 3.3, linguistic relativity research is assessed. The question of whether differences in the encoding of motion result in divergent conceptualisations of motion events by speakers of verb- and satellite-framed languages has been extensively investigated, but this research has yielded inconclusive results. It is also suggested that the intrinsic nature of the stimuli (i.e., the types of Path, the types of Manner and the types of Figure) might be responsible for these divergent results.

Chapter 4 describes some classifications and analyses of motion verbs from (a) different theoretical backgrounds, (b) online databases for English and Spanish lexicons, and (c) research on motion events. Section 4.2 begins with an overview of the Syntax-Semantics Interface approach to the analysis of motion verbs, which explores how a verb's semantics can determine the syntactic realisation of its arguments. In Section 4.3, two classifications of English motion verbs within the Functional-Lexematic model are presented. Next, Section 4.4 offers a brief overview of some of the existing online databases for English and Spanish verb lexicons; in these databases, classifications of motion verbs which range from the more syntactically-oriented to the more semantically-oriented are outlined. Finally, in Section 4.5, crosslinguistic research on manner and path verbs is reviewed. This research analyses motion verbs in a more fine-grained fashion than under Talmy's initial formulation; scholars break the Path and the Manner component into more granular categories which permit exploration of the semantics of path and manner verbs across languages in a subtler way.

Chapter 5 explores the semantic nature of the English and the Spanish motion verb lexicons and offers a contrastive account with special attention to the path and manner dimensions of motion. Section 5.2 describes the aims, research questions, corpus and the methodology followed. In section 5.3, the general distribution of

English and Spanish motion verbs, in terms of the general semantic components that their verbs encode, are presented. Section 5.4 focuses on path verbs and zooms in to the sort of path notions which seem to be typically expressed in these languages. Next, Section 5.5 ponders the semantic nature of manner verbs in each language and the sort of manner information which seems to be characteristically lexicalised in these languages. Finally, Section 5.6 answers the research questions addressed throughout the chapter and sums up the main conclusions, pointing out both crosslinguistic differences and similarities.

Chapter 6 reports three experimental studies on human locomotion. In Section 6.2, the first study (i.e., the Definition and Feature Listing task) is reported; English and Spanish native speakers are asked to define the verbs *move*, *walk*, *run* and *jump*, and to list their defining features. Section 6.3 presents the second study (i.e., the Free Verb Listing task), in which English and Spanish speakers are given one minute to list verbs for moving, walking, running and jumping. In Section 6.4, the third study (i.e., the Rating task) is reported; English and Spanish native speakers are asked to rate whether a list of motion verbs are good examples of walking, of running and of jumping. This chapter sheds light on how English and Spanish organise their human locomotion verb lexicons and into the complex semantics of human locomotion verbs.

Chapter 7 summarises the main findings of this dissertation, addresses possible directions for future research and suggests some applications of the work presented. This thesis concludes by suggesting the need for further experimental research on the semantics of motion verbs and for further crosslinguistic research to test whether the tendencies documented in this work apply to other verb- and satellite-framed languages.

CHAPTER 2

COGNITIVE LINGUISTICS AND THE THEORY OF LEXICALISATION PATTERNS

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2.1. An Overview of Cognitive Linguistics and Cognitive Semantics

2.1.1. Introduction

To provide a comprehensive description of Cognitive Linguistics would fall outside the limits of this work; one of the latest introductions (Evans & Green, 2006) is more than eight hundred pages long. Instead, we will try to provide a brief but general overview which will give the reader unfamiliar with Cognitive Linguistics a taste of the background of this dissertation.

In the following section, we will briefly deal with the birth and main tenets of Cognitive Linguistics, which must be seen as a general movement instead of a unified theory. Section 2.1.3 provides an overview of the main tenets and main lines of research of Cognitive Semantics, with a special attention to Conceptual Semantics.

2.1.2. Cognitive Linguistics

> Cognitive linguistics […] is an approach to language that is based on our experience of the world and the way we perceive and conceptualize it.
>
> (Ungerer & Schmid, 1996: x)

In the eighties, a new approach to the study of language began to develop: Cognitive Linguistics. This school of linguistics was born as a reaction against formal approaches to language, such as Noam Chomsky's Generative Grammar (e.g., 1957, 1965). Cognitive Linguistics rejects the main claims made by Generative Linguistics: (1) language is an innate and autonomous cognitive faculty; (2) to know a language is to know its grammar, which consists of a finite number of combinatory rules; (3) syntax (form) is the main focus of linguistic analysis (and thus semantics (meaning) is largely overlooked). The birth of Cognitive Linguistics is also rooted in the emergence of the second generation of Cognitive Science in the 1970s, especially in research on human categorisation (Rosch, 1973, 1975). The field of Cognitive Linguistics is defined by two commitments: (1) the Generalisation commitment, and (2) the Cognitive commitment. The Generalization commitment represents a

dedication to characterizing the general principles governing all aspects of human language: phonology, syntax, semantics and pragmatics. The Cognitive Commitment represents the commitment to providing a characterization of these principles that reflects what is known about human cognition. Therefore, cognitive linguists are committed to characterizing the general principles governing all aspects of human language while being faithful to empirical discoveries from parallel disciplines of cognitive science such as cognitive psychology, developmental psychology, psychophysical and neurophysical research about the nature of our mind and/or brain, and artificial intelligence.

Cognitive Linguistics adopts a philosophical stance called *experientialism*, which is opposed to *objectivism*. Objectivism had been the prevailing point of view in the Western tradition from the times of Plato and Aristotle up to the 20th century. For objectivists, there is an external objective world that is independent of our perceptions and interactions with it. However, for experientialists, this external world is not fully independent from our perceptions and interactions. Objectivists claim that thinking amounts to symbol manipulation. Those symbols acquire their meanings by their direct connection to the outside world. Therefore, our mind is a mirror of reality and is independent from our bodies. In contrast, for experientialists, thinking is not a mere mechanical manipulation of symbols; our apprehension of the world is not direct but constrained or mediated in large measure by our conceptual and perceptual systems. The peculiar nature of our bodies and brains, especially our sensorimotor system, shapes our very possibilities for conceptualisation and categorisation (Lakoff & Johnson, 1999: 19-22). Thus, thought and language are *embodied*, i.e., based on our experiences with the environment we inhabit.

Cognitive Linguistics must be seen as a *movement* or an *enterprise*, and not as a specific theory (Evans & Green, 2006: 3; Cuenca & Hilferty, 1999: 22). Instead, it is an approach that has adopted a number of guiding principles and assumptions, which have led to diverse research directions and to the proposal of a number of theories[1]. The fundamental assumptions or tenets of Cognitive Linguistics can be

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[1]Evans, Bergen & Zinken (2007) distinguish two main branches of the cognitive linguistic movement: (1) Cognitive Semantics (cf. Lakoff 1987; Langacker, 1987; Fillmore, 1985; Talmy, 2000a, 2000b) and (2) cognitive approaches to grammar such as Langacker's Cognitive Grammar (1987, 1991, 2005)

summarised as follows: (1) language is not a modular system in our brain; (2) language reflects general cognitive principles; (3) language and cognition are embodied, that is, our linguistic and conceptual categories are grounded in physical, social and cultural experiences; (4) language is all about meaning; language is the vehicle of meaning and also a window into conceptualisation; (5) there are common structuring principles which hold across all language areas (phonology, morphology, syntax, semantics and pragmatics).

Having dealt with the birth of Cognitive Linguistics and its main assumptions, we move on to one of the main areas in cognitive linguistic research: Cognitive Semantics.

2.1.3. Cognitive Semantics

Cognitive Semantics was born out of the dissatisfaction with formal theories of meaning based on the objectivist world view. In formal theories such as truth-conditional semantics, meaning was seen as the link between the world and words, completely disengaged from human cognition (Sweetser, 1990: 4). In contrast, cognitive semanticists consider linguistic meaning as a manifestation of conceptual structure, which emerges from bodily experience. Accordingly, Cognitive Semantics is concerned with the relationship between experience, cognition and language, with the result that it explores the connections between human bodily experience, the conceptual system and the semantic structure expressed by language.

2.1.3.1. Main tenets and lines of research

Like Cognitive Linguistics, Cognitive Semantics is not a single theory. Rather, cognitive semanticists are guided by four central assumptions or principles as summarised by Evans & Green (2006: 157):

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and Construction Grammar (cf. Bergen & Chang, 2005; Goldberg, 1995; Hilferty, 2003; Kay & Fillmore 1999). Some of the theories developed within Cognitive Semantics are The Cognitive Theory of Metaphor and Metonymy (cf. Barcelona, 2000, 2002; Lakoff & Johnson, 1980; Lakoff, 1987; Turner, 1996; Soriano, 2005), and Blending Theory (cf. Fauconnier, 1994; Fauconnier & Turner, 2002).

a.   Conceptual structure is embodied. Our conceptual system arises from our bodily experiences and is meaningful by virtue of its grounding in these experiences. From this assumption it follows that any theory of conceptual structure should be consonant with the ways in which we experience the world around us.

b.   Semantic structure is conceptual structure. The meanings conventionally associated with words and other linguistics units (bound morphemes, constructions, etc) can be equated with concepts[2]. This is not to say that semantic structure and conceptual structure are identical: linguistic concepts are only a subset of the possible concepts in the mind of the speaker.

c.   Meaning representation is encyclopaedic; words do not represent 'neatly packaged bundles of meaning […] but serve as points of access to vast repositories of knowledge' (Evans & Tyler, 2006: 160). In order to understand the meaning of a given utterance, we draw on our encyclopaedic knowledge relating to the specific situation depicted by the utterance to construct its meaning.

d.   Meaning construction is conceptualisation. Meaning is not fixed but a matter of construal and conventionalisation. 'Meaning construction is […] a dynamic process whereby linguistic units serve as prompts for an array of conceptual operations and the recruitment of background knowledge. It follows from this view that meaning is a process rather than a discrete 'thing' that can be 'packaged' by language.' (Evans & Tyler, 2006: 162).

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[2] Unlike other approaches, the study of the meaning of both open-class words (nouns, verbs and adjectives) and closed-class words (prepositions, conjunctions, adverbs, etc) fall within the purview of cognitive semantics. In fact, Talmy mostly concentrates on closed-class words – or grammatical systems – as 'the closed-class system of language is its most fundamental and comprehensive conceptual structuring system' (Talmy, 2000a: 13).

Having laid out the basic assumptions of Cognitive Semantics, we turn to a brief overview of some of the main issues investigated within this approach: the encyclopaedic nature of meaning, categorisation, the bodily basis of meaning, and conceptual structure.

Encyclopaedic nature of meaning

Formal linguistics holds that meaning can be divided into a dictionary component and an encyclopaedic component. The dictionary component is the sole object of study of *lexical semantics*, whereas the encyclopaedic component is external to lexical semantics, falling within the domain of world knowledge or *pragmatics*. The dictionary view of meaning separates core meaning (semantics) from non-core meanings emerging in context (pragmatics). For cognitive semanticists there is no such distinction between semantics and pragmatics, and they hold there is only encyclopaedic meaning, which subsumes dictionary knowledge (Evans, Bergen & Zinken, 2007).

Research on the encyclopaedic nature of meaning has focused on how word meaning is organised; the encyclopaedic knowledge we have of any given word is not a disorganised mess, but it is structured. One of the theories concerning the organisation of word meaning is Charles Fillmore's Frame Semantics (e.g., 1977, 1985) which proposes that word meanings are organised in *frames*: detailed knowledge structures emerging from our everyday experiences. A given frame relates entities associated with a particular situation. For example, the BUY frame consists of a buyer, a seller, the goods, and the money (Fillmore, 1977: 104). According to Fillmore, word meanings are understood by virtue of their connection to a particular frame. Thus, the meanings of the English verbs *buy* or *sell* (see examples below) cannot be understood independently of the BUY frame with which they are associated. The verb *buy* profiles the buyer (Peter) against the whole frame, whereas the verb *sell* profiles the seller (Mary).

(1)   a. Peter bought a DVD player from Mary

        b. Mary sold a DVD player to Peter

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In sum, to understand the meanings of words we necessarily evoke a frame. Another related theoretical construct can be seen in Schank & Abelson's *scripts* (1977), which are defined by Ungerer & Schmid (1996: 231-214) as 'knowledge structures that are particularly designed for frequently recurring **event sequences**'. For example, the RESTAURANT script is divided into four scenes or sequences: entering the restaurant, ordering, eating and exiting.

Other proposals of the way we organise our experiences in networks of knowledge are George Lakoff's *Idealised Cognitive Models* (1987), Gilles Fauconnier's *Mental Spaces* (1994) and Ronald Langacker's *Cognitive Domains* (1987). In Langacker's theory, '[d]omains are necessarily cognitive entities: mental experiences, representational spaces, concepts, or conceptual complexes' (1987: 147). Our concepts can be described in terms of *profile* and *base* (1987: Section 5.1); a word's *profile* is the part of its semantic structure which is in focus, whereas the *base* is part of its semantic structure not in focus but necessary in order to understand the profile. As with frames, the meaning of a word can only be understood if a larger system of concepts is also understood. For example, the concept of KNEE (profile) presupposes the concept of a leg (base); to understand the meaning of KNEE, one should know it is a specific part or joint of a leg.

Categorisation

Another phenomenon that has received great attention within cognitive semantics is categorisation, that is, our ability to identify entities as members of groups or categories. Research by Eleanor Rosch during the 1970s challenged the classical view of categories, seen as sets of necessary and sufficient conditions with clear boundaries, in favour of a prototype organisation of categories. The findings from Rosch showed that the boundaries between categories are fuzzy and that membership is graded instead of a matter of 'all-or-nothing'. For example, for the category BIRD, robins or sparrows are considered as better examples or prototypical members whereas penguins and ostriches are less 'bird-like'. George Lakoff's notion of Idealised Cognitive Model (1987) could be seen as an application to language of Rosch's observations on prototypicality. According to Lakoff (1987), we organise our knowledge by means of structures called Idealised Cognitive Models (ICMs);

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prototypical members are those who fit with the background assumptions and expectations of the ICM, of our ideal representation of the world. Let's illustrate the notion of ICM with the classic example of BACHELOR: Casanova would fit perfectly into our ICM of being a bachelor because he is unmarried but marriageable whereas the Pope would not fit as nicely in this category. The Pope, although unmarried, is not a prototypical bachelor because the concept of POPE is more often understood in terms of the ICM of the ROMAN CATHOLIC CHURCH, whose clergy cannot marry.

The bodily basis of meaning: image schemas

In his 1987 book, *The Body in the Mind: The Bodily Basis of Meaning*, *Imagination*, *and Reason*, the cognitive philosopher Mark Johnson presented the notion of *image schema*. In his own words, 'an image schema is a recurring, dynamic pattern of our perceptual interactions and motor programs that gives coherence and structure to our experience' (Johnson, 1987: xiv).

Let us take a simple example: the CONTAINER image schema. We experience physical containment in our surroundings when we move in and out of rooms, buildings, etc. We manipulate objects placing them in containers (cups, boxes, bags, etc.). In addition, we are aware of our bodies as containers into which we put food, water, air and out of which other things emerge (air, blood, food and water wastes, etc.). In each of these cases there is a repeatable or recurrent spatial structure, namely the CONTAINER image schema which has the following structure: an inside, a boundary, and an outside. Johnson's view is that we impose the CONTAINER image schema on different entities, places, and events in the world via our perceptual and conceptual systems.

Image schemas have a number of properties: (a) they are preconceptual and prelinguistic, i.e., they derive from sensory perception enabling preverbal thought and providing the foundations for language acquisition (Mandler, 1992, 2004). (b) Image schemas are structured; a schema consists of a small number of parts standing in simple relations, by virtue of which it can structure indefinitely many perceptions, images and events. Thus, image schemas underlie our concepts. (c) They are not rich, concrete images or mental pictures; they do not have the specificity of such rich

images or mental pictures. They operate, instead, at the level of generality and abstraction (Johnson, 1987: 23-24).

Conceptual Structure

Cognitive semanticists start from the assumption that semantic structure reflects conceptual structure. They are concerned with the conceptual structuring mechanisms reflected in linguistic structure and how the findings relative to the linguistic representation of conceptual content are to be related to more general cognitive processes. According to the cognitive semanticist Leonard Talmy, language is 'one system of mental functioning through which the mind could be studied more generally' (in Ibarretxe-Antuñano, 2006c: 254). The analysis of conceptual structure and language is central and fundamental for the study of cognition as it serves as a starting point to further understanding the organising principles of other systems, whether by generalising the similarities or by contrasting the differences.

In the following section, we will provide a detailed account of Leonard Talmy's theory of conceptual structure.

2.1.3.2. Conceptual Semantics

Leonard Talmy was one of the pioneers of the cognitive linguistic enterprise during the 1970s. In his introduction to the two 2000 volumes under the generic title of *Toward a Cognitive Semantics*, he explicitly characterises research on cognitive semantics and the main methodology to be followed: 'research on cognitive semantics is research on conceptual content and its organization in language and, hence, [research] on the nature of conceptual content and organization in general' (Talmy, 2000a: 4). Moreover, he claims that *introspection* is a legitimate methodology for accessing conceptual content. As the object of study is meaning and 'meaning is located in conscious experience', introspection takes the researcher to where the subjective data are located. He argues that 'the use of introspection must be recognized as an appropriate and arguably necessary methodology in cognitive science, together with the other generally accepted methodologies' (Talmy, 2000a: 6).

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Our conceptual system, as manifested in language, is made up of two systems: the *conceptual content system* and the *conceptual structuring system*. Taken together, these two systems contribute to building up different aspects of our understanding of a scene. As their names suggest, the conceptual structuring system provides the skeleton or scaffolding for a given scene, whereas the conceptual content system provides rich substantive information. Thus, the meanings associated with the conceptual structuring system are rather schematic while those associated with the conceptual content system are highly detailed. The manifestation in language of the two systems of our cognitive representation (CR) is done by the *grammatical* and the *lexical* systems (see Figure 2.1).

The *grammatical* or *closed-class system* includes both an overt type and an abstract or implicit type of grammatical forms. Forms of the overt type can be bound or free. Overt bound forms are inflections, derivations, and clitics. Overt free forms can include, for example, determiners, prepositions, conjunctions, and particles. Talmy considers that suprasegmental forms such as intonation patterns may be also included in the overt type. The abstract or implicit type of closed-class forms, that is, the ones without phonological substance, can include major grammatical categories (e.g., 'noun', 'verb'), grammatical subcategories (e.g., 'count noun', 'mass noun'), grammatical relations (e.g., 'subject', 'direct object'), word order patterns, etc. '[P]erhaps also to be included among closed classes are certain categories of grammatical complexes, including for instance grammatical constructions, syntactic structures, and complement structures' (Talmy, 2000a: 23). On the other hand, the *lexical* or *open-class system*, includes roots of nouns, of verbs, and of adjectives. The extensive system of ideophones or 'expressive forms' as well as lexical complexes such as collocations might also be included as a type of open-class (Talmy, 2000a: 22).

On the whole, the grammatical and lexical subsystems seem to specify different portions of a cognitive representation; the grammatical elements of a sentence determine the majority of its structure, whereas the lexical elements together contribute the majority of its content. 'The grammatical specifications in a sentence, thus, provide a conceptual framework or, imagistically, a skeletal structure

or scaffolding for the conceptual material that is lexically specified' (Talmy, 2000a: 21).
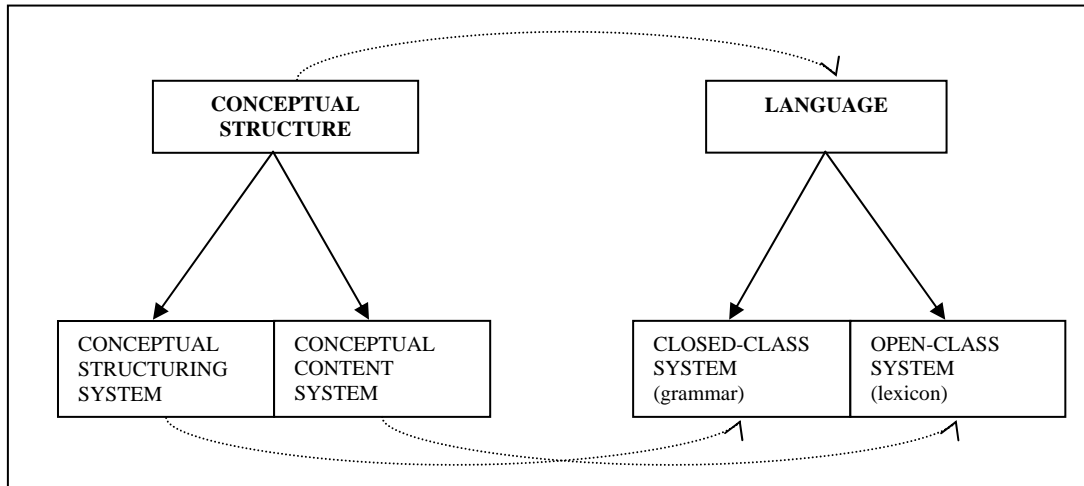
Figure 2.1. The bifurcation of conceptual structure as it is reflected in language

Though Talmy's work has examined both the lexical and the grammatical systems, he has been mainly concerned with the semantics of the closed-class system. While it is impossible to propose a finite inventory of open-class concepts, Talmy claims that there is a universally available inventory of concepts which is encoded by closed-class forms. A language expresses a selection of those concepts, but it does not necessarily express all the available concepts. By examining the semantics of the closed-class systems across languages, he identifies a number of *schematic systems* which give structure to our conceptual system.

Schematic systems

The conceptual structuring system, according to Talmy, is based on a number of schematic systems[3]. These schematic systems provide the basic architecture upon which the rich content meaning (of open-class forms) hinges. In an interview with Ibarretxe-Antuñano (2006), Talmy identifies five key schematic systems: (1) the

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[3] In part 1 of volume I (2000), Talmy introduces the notion of *schematic systems*. In the remaining three parts of that volume, he devotes chapters to three schematic systems: the Configurational System, the Attentional System and the Force Dynamics System. A comprehensive account of Talmy's schematic systems is also to be found in Evans & Green (2006: Section 6.2.2, Section 15.2).

Configurational System; (2) the Perspectival System; (3) the Attentional System; (4) the Force Dynamics System, and (5) the Cognitive State System.

The first schematic system, the *Configurational System*, represents structure for space or time and divides the scene into parts and participants. It includes much that is within the schemas evoked by spatial prepositions, by temporal conjunctions, and by aspect and tense markers. For example, *at home* represents a point-of-space, *in five minutes* an extent-of-time, etc.

While the first schematic system establishes the basic delineations by which a scene or event being referred to is structured, the second schematic system, the *Perspectival System*, specifies the perspective from which one views a scene or places one's mental eyes. The perspective system includes at least the following conceptual distinctions: spatial or temporal positioning within a larger frame, the distance away from the referent entity, its change or lack of change of perspective point in the course of time as well as the path it follows, and the viewing direction. For example, in sentence (2) we have an internal perspective location, that is, our mental eyes are inside the room. However, in sentence (3) the scene is viewed from outside the room, in other words, we have an exterior perspective location.

(2)   The lunchroom door slowly opened and two men walked in.

(3)   Two men slowly opened the lunchroom door and walked in.

The third schematic system, the *Attentional System*, establishes how one is to distribute one's attention over the scene. For instance, in (4), the focal attention is on the seller, while in example (5) the focal attention is mapped onto the buyer with lesser attention on the remainder.

(4)   The *clerk* sold the vase to the customer.

(5)   The *customer* bought the vase from the clerk.

Furthermore, there are also patterns of distributing attention, such as the *windowing of attention*, in which one or more (discontinuous) regions within a referent scene are allocated greater attention. According to Talmy, '[t]he portions that are foregrounded by inclusion are *windowed*, and the portions that are backgrounded by exclusion are

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gapped' (2000a: 257). In example (6), we find a maximal windowing of attention over the whole path of the event. In contrast, in (7), there is a final windowing of attention with and initial and medial gapping of the path.

(6)   The crate fell *out of* the plane *through* the air *into* the ocean = maximal windowing

(7)   The crate fell *into* the ocean = final windowing of attention

The three systems presented above can be complemented by a fourth schematic system, *Force Dynamics*, which deals with the forces exerted by and the causal interactions among the entities[4] in the referent scene. Included here are the exertion of force, resistance to said force, the overcoming of such resistance, blockage of the expression of force, removal of such blockage, etc. Force Dynamics refers not only to physical force interactions but also to psychological and social interactions, conceived in terms of psychosocial pressures. In English, Force Dynamics appears not only in subsets of conjunctions and prepositions, but also it is the semantic category that 'most uniquely characterizes the grammatical category of modals as a whole, both in their basic and in their epistemic usages' (Talmy, 2000a: 409).

A fifth schematic system of *Cognitive State* is also posited. This schematic system comprises a sentient agent's volition and intention. *Volition* is a cognitive event in a sentient agent that causes some motion of the agent's body or body parts. As a separate cognitive state, the agent's scope of *intention* is the amount of a causal chain that the Agent intends to happen. Another major division within the schematic system of cognitive state is *epistemics*, which refers to characterisations of a sentient entity's states of knowledge. This division includes indicative-subjunctive type distinctions, forms for probability and possibility, etc. Cognitive state includes still

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[4] Talmy (2000a: 413) remarks '[t]he primary distinction that language marks here is a role difference between the two entities exerting the forces. One force-exerting entity is singled out for focal attention – the salient issue in the interaction is whether this entity is able to manifest its force tendency or, on the contrary, is overcome. The second force entity, correlatively, is considered for the effect that it has on the first, effectively overcoming it or not'. The focal force entity is called the *Agonist*, and the force element that opposes it the *Antagonist*.

further divisions, such as *expectations*, which cover both the expected and the surprising, as represented by closed-class systems such as the *how / so* forms in English: *How big your eyes are! Your eyes are so big!* Finally, the *affective* division (as expressed by diminutive and pejorative closed-class forms) is also a part of the Cognitive State schematic system.

On the whole, these five schematic systems relate to fundamental aspects of our embodied experience. The first three schematic systems (Configurational, Perspectival and Attentional systems) have much to do with our visual perception whereas the last two posited schematic systems (Force Dynamics and Cognitive State) relate to our bodily experience of forces, pressures, etc, and to our intentions, knowledge and expectations.

2.2. Talmy's theory of lexicalisation patterns

2.2.1. Introduction

In volume II of *Toward a Cognitive Semantics* (2000), Leonard Talmy delves into the exploration of the systematic relations in language between meaning and overt linguistic forms, in other words, into the process of lexicalisation: 'lexicalization is involved where a particular meaning component is found to be in regular association with a particular morpheme' (Talmy, 2000b: 24).

His basic assumption is that we can isolate elements or components separately within the domain of meaning and within the domain of linguistic expression. Then, the next step a semanticist has to take is to examine which semantic elements are expressed by which linguistic elements. Talmy remarks that this relationship is not one-to-one; a combination of semantic elements may be expressed by a single linguistic element, and a single semantic element may be expressed by a combination of linguistic elements. Moreover, semantic elements of different types may be expressed by the same type of surface element, and the same type of semantic elements may be expressed by several different surface elements. By way of illustration, an English motion verb (surface element) can encode distinct types of semantic information: Manner of motion (e.g., *hop*), Cause (e.g., *kick*) and Path (e.g., *exit*, *enter*). On the other hand, the Path element may be encoded in

English by verbs and by prepositions (e.g., *out*, *into*), that is, by two different linguistic elements. According to Talmy, by looking at the relations between meaning and linguistic forms, a range of universal principles and typological patterns might emerge[5].

On the whole, his approach to lexicalisation can be summarized as follows (adapted from (1) in Talmy (2000b: 22)):

a. Determine various semantic entities[6] in a language.

b. Determine various surface entities in the language.

c. Observe which (a) entities are expressed by which (b) entities – in what combination and with what relationship – noting any patterns.

d. Compare (c)-type patterns across different languages, noting any metapatterns (universal principles).

e. Compare (c)-type patterns across different stages of a single language through time, noting any shifts or nonshifts that might be guided by a given universal principle (or a (d)-type metapattern)

f. Consider the cognitive processes and structures that might give rise to the phenomena observed in (a) through (e).

Finally, two directions or perspectives can be adopted for exploring meaning-linguistic expression relations, both of which have been proven fruitful. One direction is to hold constant a selected surface or linguistic entity and observe which semantic entities are variously expressed by it, and the other direction is to keep a particular semantic entity constant and observe the surface or linguistic entities in which it can appear. The two typologies proposed by Talmy, the three-way classification (Talmy, 1972, 1985) and the two-way classification of languages (Talmy, 1991, 2000b), to which we will devote sections 2.2.3 and 2.2.4 respectively, result from adopting either of these two possible directions.

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[5] Talmy (2000b: Chapter 2, Section 3) provides an exhaustive classification of different types of typologies and universals which summarises and organises his research findings.

[6] According to Talmy, entities are 'elements, relations, and structures: both particular cases and categories of these' (Talmy, 2000b: 22).

In sum, Talmy's concern is to find out whether, for a particular semantic domain, languages exhibit a wide variety of patterns, a small number of patterns (i.e., a typology), or a single pattern (i.e., a universal). One of the domains favoured by his research is the semantic domain of Motion, though his findings are also generalised to other domains[7]. He has examined the conceptual structure of motion events as well as the typological patterns in which this conceptual structure is parcelled out. In the following sections, these issues will be addressed.

2.2.2. The Motion Event

Before we concentrate on the semantics of a motion event, we need to define what an event is. According to Talmy, an *event* is a portion of reality which has been delimited or bounded by the human mind. As he explains: '[t]he human mind in perception or conception can extend a boundary around a portion of what would otherwise be a continuum, whether of space, time […] and ascribe to the excerpted contents within the boundary the property of being a single unit entity' (Talmy, 2000b: 215). Moreover, an event can be conceptualised as having a particular type of internal structure and degree of complexity. Thus, there are complex events, which are made up of a main event or *framing event* and a subordinate event or *co-event* (both of which are 'conceptualized as unitary events'), together with the relation that the co-event bears to the framing event.

Talmy considers a situation containing motion and the continuation of a stationary location alike as a *motion event.* In his own words:

The basic Motion event consists of one object (the **Figure**) moving or located with respect to another object (the reference object or **Ground**). It is analyzed as having four components: besides **Figure** and **Ground**, there are **Path** and **Motion**. The **Path** (with capital P) is the path followed or site occupied by the Figure object with respect to the Ground object. The component of **Motion** (with capital M) refers to the presence per se of motion or locatedness in the event […] In addition to these internal components, a Motion

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[7] Talmy (1991) suggests the typology for motion events extends as well to five other events: temporal contouring, state change, action correlation and realisation. For some examples see section 2.2.4. For a detailed account see Talmy (1991) and Talmy (2000b: Sections 2.5, 2.6, 2.7, and 2.8).

event can be associated with an external **Co-event** that most often bears the relation of Manner or of Cause to it. (Talmy, 2000b: 25).

Let us illustrate it with the following example:

(8)   Harry walked quietly down the stairs.

Harry is the Figure, *the stairs* is the Ground and *down* is the Path. The verb, *to walk* expresses simultaneously the fact of Motion (framing event) and the Manner of motion (Co-event).

The terms Figure and Ground[8] were taken from Gestalt psychology, but Talmy gave them a distinct semantic interpretation: '[t]he Figure is a moving or conceptually movable entity whose path or site is at issue. The Ground is a reference frame, or a reference object stationary within a reference frame, with respect to which the Figure's path, or site is characterized' (Talmy, 2000b: 26).

At this point, it is important to define the two types of motion found in motion events: *translational motion* and *self-contained motion*. In Talmy's (2000b: 35) words, '[i]n translational motion, an object's basic location shifts from one point to another in space. In self-contained Motion, an object keeps its same, or "average," location. Self-contained Motion generally consists of oscillation, rotation, dilation (expansion and contraction), wiggle, local wander, or rest'. Let us consider examples (9), (10) and (11) to illustrate these notions.

(9)   Ray entered the room = translational motion

(10)   The butterfly hovered over the flower = self-contained motion

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[8] According to Talmy, these notions have several advantages over Fillmore's cases. The notion of Ground captures the commonality of functioning as reference object for a figural entity which is present in Fillmore's separate cases of 'Location', 'Source', 'Goal', and 'Path'. The terms Figure and Ground are close equivalents of Langacker's *trajector* and *landmark* (1987: 217): *trajector* is 'the figure within a relational profile', whereas *landmark* refers to 'other salient entities in a relational predication'.

(11)   Claire slid through the hall in her socks = self-contained + translational motion

Example (9) depicts the Figure's change of location from the outside to the inside of the room. In contrast, example (10) shows self-contained motion; the Figure stay over the flower by moving its wings. Sometimes, it is difficult to tell translational and self-contained motion apart, as we observe in (11). The manner verb *to slide* includes a component of friction, or rubbing (i.e., self-contained motion) between the Figure (Claire) and the Ground (the hall). However, such friction can only exist in the course of the Figure's translational motion (through the hall). Thus, in English, the activity of self-contained motion has often come to be anchored in the framework of translational motion (Talmy, 2000b: 228-229).

Self-contained motion is intrinsically linked to manner of motion, in other words, to the Manner relation between the co-event and the motion event. In the Manner relation, the co-event co-occurs with the motion event, as we have seen in example (11), and is conceptualised as an additional activity that the Figure of the motion event exhibits. This activity directly pertains to the motion event but is distinct from it. However, the relation between the co-event and the motion event need not be limited to that of Manner, rather it can bear a wide range of relations (Talmy, 2000b: 42-47):

a. Causal relation: 'the Co-event can precede the main Motion event in the case of **onset causation**, or it can co-occur with the main Motion event in the case of **extended causation**' (Talmy, 2000b: 44-45).

(12)   Our tent blew down into the gully from a gust of wind = Onset causation

(13)   I squeezed the toothpaste out of the tube = Extended causation

b. Precursion relation: the Co-event precedes the main motion event but does not cause or assist its occurrence. In the example below, the splintering of the glass preceded but did not cause the motion of the glass onto the carpet.

(14)   The glass splintered onto the carpet.

c. Enablement relation: the Co-event directly precedes the main motion event and enables the occurrence of an event that causes the Motion but does not itself cause this Motion:

(15)   I scooped jellybeans up into her sack

(16)   Could you reach/grab that bottle down off the shelf?

d. Reverse enablement: the Co-event named by the verb is an event that has previously taken place and that now gets undone. This new event, in turn, enables the main motion event named by the verb particle 'auf' in the following example:

(17)   Ich habe den Sack aufgebunden (Lit. I have the sack open-tied = I untied the sack and opened it).

e. Concomitance relation: the Co-event co-occurs with the main motion event and is an activity that the Figure of the motion event additionally exhibits. But this activity does not in itself pertain to the concurrent Motion, that is, it could just take place by itself:

(18)   She wore a green dress to the party.

(19)   I whistled past the graveyard.

f. Concurrent result: the Co-event results from or is caused by the main motion event, and would not otherwise occur:

(20)   The door slammed shut.

(21)   The rocket splashed into the water.

g. Subsequence relation: the Co-event takes place directly after the main motion event, and is enabled by, caused by, or is the purpose of that motion event:

(22)   I'll stop down at your office (on my way out of the building).

(23)   They locked the prisoner into his cell.

Now that we have offered a definition of a motion event and examined the semantic components which underpin the conceptualisation of this event and its varying relations with a Co-event, we move on to deal with the characteristic lexicalisation patterns observed for motion events. In the next two sections, the two typologies of lexicalisation patterns proposed by Talmy are presented in detail[9]. As we briefly mentioned in the introduction, the three-way classification (Talmy, 1972, 1985) and two-way classification of languages (Talmy, 1991, 2000b) represent a different perspective taken on the relations between the semantic level and the morphosyntactic (linguistic) level. The former perspective kept constant a morphosyntactic constituent, the verb root, and looked at which semantic components were characteristically placed in it by various languages. It was found that most languages characteristically express either the Path, the Co-event (the Manner or the Cause), or the Figure in addition to the fact of Motion in the verb. In the later perspective, the semantic component of Path was kept constant, focusing the examination on which morphosyntactic constituent it was characteristically placed in by various languages. It was observed that most languages characteristically place the Path component either in the verb root (in verb-framed languages) or in the satellite[10] and/or preposition (in satellite-framed languages).

2.2.3. The three-way typology: the verb root

This typology results from looking at which semantic components are characteristically lexicalised in verb roots by several languages. Three typologically principal lexicalisation types for verb roots are presented by virtue of the verb root expressing either the Co-event (Manner or Cause), the Path, or the Figure in addition to the fact of Motion.

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[9] Although some European linguists, Bally (1965), Tesnière (1959) and Wandruzska (1976) had already pointed out differences in the lexicalisation of motion in French and German, they had not provided a systematic or theoretical account of the phenomena involved.

[10] According to Talmy (2000b: 102), a satellite is 'the grammatical category of any constituent that is in a sister relation to the verb root'. Within this category, English verb particles, German separable and inseparable verb prefixes, Russian verb prefixes, etc are included.

Other conflations or minor patterns may exist within a language, as we will see at the end of this section, although languages are categorised according to the most characteristic lexicalisation pattern they exhibit. In most cases, a language uses only one of these types for the verb in its most characteristic expression of Motion. According to Talmy (2000b: 27), 'characteristic means that (1) it is *colloquial* in style, rather than literary, stilted, and so on; (2) it is *frequent* in occurrence in speech, rather than only occasional; (3) it is *pervasive*, rather than limited – that is, a wide range of semantic notions are expressed in this type'.

2.2.3.1. Lexicalisation pattern: Motion + Co-event

In one group of languages, including Finno-Ugric, Chinese, Ojibwa, Warlpiri and all branches of Indo-European languages (except for Romance languages), the verb typically expresses at once the Motion and a Co-event, usually either the Manner or the Cause of the Motion. English is the prototypical example of this group.

(24)   English expressions of Motion with conflated Manner or Cause taken from Talmy (2000: 28)

Move + Manner

Non-agentive

a.   The rock *slid/rolled/bounced* down the hill

b.   The gate *swung/creaked* shut on its rusty hinges

c.   The smoke *swirled/squeezed* through the opening

Agentive

d.   I *slid/rolled/bounced* the keg into the storeroom

e.   I *twisted/popped* the cork out of the bottle

Self-agentive

f.   I *ran/limped/jumped/stumbled/rushed/groped* my way down the stairs

g.   She *wore* a green dress to the party

Move + Cause

Non-agentive

h.   The napkin *blew* off the table

i.   The bone *pulled* loose from its socket

j.   The water *boiled* down to the midline of the pot

Agentive

k.   I *pushed/threw/kicked* the keg into the storeroom

l.   I *blew/flicked* the ant off my plate

m.   I *chopped/sawed* the tree down to the ground at the base

n.   I *knocked/pounded/ hammered* the nail into the board with a mallet

At this point, the terms *non-agentive*, *agentive* and *self-agentive motion* call for a definition. Firstly, non-agentive motion has to do with situations in which entities that are incapable of motion on their own perform some motion. Secondly, agentive motion refers to a motion event whose Figure is moved by an agent; the agent causes the motion but the verb can express either its Cause or the Manner in which the Figure moves. Finally, self-agentive motion refers to events in which Figures are able to move by themselves.

2.2.3.2. Lexicalisation pattern: Motion + Path

In the second typological pattern for the expression of motion, the verb conflates both the fact of Motion and Path. Semitic, Polynesian, Romance, Korean, Turkish, Tamil, Nez Perce, and Caddo belong to this pattern. Spanish motion verbs are perfect examples of this type:

(25)   Spanish expressions of Motion with conflation of Path taken from Talmy (2000: 49-51)

Non-agentive

a.   La botella entró a la cueva (flotando)

      The bottle MOVED-in to the cave (floating)

      'The bottle floated into the cave'

b.   La botella salió de la cueva (flotando)

      The bottle MOVED-out from the cave (floating)

      'The bottle floated out of the cave'

Agentive

c.   Metí el barril a la bodega rodándolo

I-_AMOVED-in the keg to the storeroom rolling-it

'I rolled the keg into the storeroom'

d.   Saqué el corcho de la botella retorciéndolo

I-_AMOVED-out the cork from the bottle twisting-it

'I twisted the cork out of the bottle'

The reader should note that Spanish motion verbs are glossed as MOVED-in/out (for non-agentive motion) and _AMOVED-in/out (for agentive motion), to show the conflation of Motion and Path.

As the examples (a-d) illustrate, if the Co-event (either Manner or Cause) is expressed in Spanish, it tends to be in an independent element, usually an adverbial or gerundive. In many languages, besides Spanish, the expression of Manner and/or Cause by adverbials and gerundives is stylistically awkward. That is why information about Manner or Cause is often omitted, especially when the Manner of motion is a default or expected Manner of motion of the Figure, or it has been previously established in the surrounding discourse.

In contrast, English verb roots readily conflate the Co-event but not Path. This lexicalisation pattern is not characteristic, though English also has verbs that incorporate Path, such as *arrive*, *approach*, *circle*, *cross*, *descend*, *enter*, *exit*, *follow*, *join*, *pass*, *rise*, *return*, *separate*, etc., but most of them are historic borrowings from Romance languages. Furthermore, Talmy (2000b: 62, 139) notes that this conflation pattern, i.e., Motion + Path in verb roots, rarely extends to conflation of location with site, such as 'BE-on', 'BE-under', etc, though in English, there are some incidental cases of such conflation: *surround* (be around), *top* (be atop), *flank* (be beside), *adjoin* (be next to), *span* (be from one side to the other), *line* (be in line) and *fill*.

2.2.3.3. Lexicalisation pattern: Motion + Figure

In the third typological pattern, the verb root conflates Motion and Figure. Languages in this type are Navajo and Hokan languages (such as Atsugewi). English does have a few forms that conform to this pattern:

(26)   English examples of conflation of Motion and Figure taken from Talmy
        (2000b: 57)

Non-agentive

a.   It *rained* in through the bedroom window

Agentive

b.   I *spat* into the cuspidor

Talmy uses Atsugewi, a polysynthetic language of Northern California, as the prototypical example of Figure-type languages. In Atsugewi, verb roots tend to express movement of objects, body parts and garments: 'Atsugewi has verb roots that refer to a particular garment moved or located for wear that takes affixes indicating whether the garment is on, or is put on or taken off oneself or someone else' (Talmy, 2000b: 59).

(27)   Atwugewi verb roots of Motion with conflated Figure taken from Talmy
        (2000b: 58)

a.   *-lup-* 'for a small shiny spherical object (e.g., a round candy, an eyeball, a
        hailstone) to move/be located

b.   *-caq-* 'for a slimy lumpish object (e.g., a toad, a cow dropping) to move/be
        located'

c.   *-staq-* 'for a runny icky material (e.g., mud, manure, rotten tomatoes, guts,
        chewed gum) to move/be-located

(28)   Atsugewi expressions of motion with conflated Figure (Talmy, 2000b: 59)

a.   */'-w-uh-staq-ik -^{a}/*
        Locative suffix: *-ik* 'on the ground'
        Instrumental prefix: *uh-* 'from gravity (an object's own weight) acting on it'
        Inflectional affix set: *'-w - -*[a] '3rd person subject (factual mood)'

Literal: 'Runny icky material is located on the ground from its own weight acting on it'

Instantiated: '*Guts are lying on the ground*'

b.   */'-w-ca-staq-ict-ᵃ/*

Directional suffix: *-ict* 'into liquid'

Instrumental prefix: *ca-* 'from the wind blowing on the figure'

Inflectional affix set: *'-w - -*[a] '3rd person subject (factual mood)'

Literal: 'Runny icky material moved into liquid from the wind blowing on it

Instantiated: '*The guts blew into the creek*'

c.   */s-'-w-cu-staq-cis-ᵃ/*

Directional suffix: *-cis* 'into fire'

Instrumental prefix: *cu-* 'from a linear object, moving axially, acting on the figure'

Inflectional affix set: *s-'-w- -*[a] 'I subject,3rd person object (factual mood)'

Literal: 'I caused it that runny icky material move into fire by acting on it with a linear object moving axially'

Instantiated: '*I prodded the guts into the fire with a stick*'

Languages can sometimes conflate the same kind of semantic distinctions but in very distinctive ways. For example, Southwest Pomo conflates Motion with Figure, not as Atsugewi does, but rather with the numerosity of the Figure: 'for one/two or three/several together … to move'.

2.2.3.4. Other minor patterns

While these three conflation systems for Motion verbs are apparently the main ones found across languages, Talmy (200b: 62) notes other lexicalisation patterns which occur as well, in addition to some which do not. He observes some minor systems of agentive verbs conflating two semantic components:

a.   Ground + Path + Motion, such as *box* and *shelve* in the following examples:

(29)   I boxed the apples = cause to move into a box

(30)   I shelved the book = cause to move onto a shelf

b.   Figure + Path + Motion, such as *powder* and *scale* in:

(31)   She powdered her nose = cause facial powder to move onto

(32)   I scaled the fish = cause the scale to move off of

These multi-component conflation patterns do not seem to form a language's characteristic lexicalisation pattern for expressing Motion. Such combinations would require an enormous verb lexicon with fine-grained semantic combinations (Talmy, 200b: 62).

On the other hand, there are some conflations which are dispreferred. One particular Motion-event component, the Ground, does not by itself conflate with the Motion verb to form any language's main system or pattern for expressing Motion. Unlike other motion event components, it is not clear why the Ground component is so disfavoured. Talmy (2000b: 61) considers that the explanation might be sought in a concept of hierarchy:

[T]he different conflation types seem to be ranked in their prevalence among the world's languages, with conflation of Path as the most extensively represented, of Manner/Cause next, and of Figure least so. It may therefore be the case that Ground conflation is also a possibility, but one so unlikely that it has not yet been instantiated in any language.

Nonetheless, this does not really explain why the lexicalisation of Ground is dispreferred by languages[11]. The prevalence of the three lexicalisation patterns among the world's languages may be interpreted as if languages are much more concerned with expressing the trajectory of motion, the manner in which the Figure moves and even the entity that moves than with conveying the reference entity. It might be argued that Ground is the least prominent element of a motion scene, thus, it is disfavoured in lexicalisation; however, we have not come across any psycholinguistic research supporting this idea.

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[11] I am grateful to Michele Feist for pointing this out.

2.2.3.5. Split and parallel systems of conflation

Previously, it has been discussed that a language apparently has a characteristic conflation type. However, a given language can characteristically (a) use a different conflation system for different kinds of Motion, that is, a language may have a *split system of conflation*, or (b) use different conflation types with the same type of motion event, that is, a language may have a *parallel system of conflation*.

To illustrate split systems of conflation, Talmy focused on Spanish, Emai and Tzeltal. As documented by Aske (1989) and Slobin & Hoiting (1994), Spanish uses the pBath-conflating type for motion events whose paths are conceptualised as crossing a boundary, and the manner-conflating type when there is no boundary-crossing involved[12].

A different split pattern is found in Emai (a language spoken in Nigeria) (Schaefer, 1988). Emai has a great number of path verbs but generally uses them only for self-agentive motion. For non-agentive and agentive motion it uses verbs conflating the Co-event.

Tzeltal exhibits another split system. In fact, it uses each of the three lexicalisation types for separate types of motion events:

a.   Figure-conflating verbs when the Figure is or ends up supported at some location. Tzeltal verb roots 'largely distinguish Figure objects in terms of their disposition: their form, orientation, and arrangement relative to other objects' (Talmy, 2000b: 65)

b.   Path-conflating verbs for autonomous motion of the Figure, that is, '(for a Figure) to MOVE along X Path' and for controlled agentive motion, that is, '(for an Agent) to MOVE (the Figure) along X Path while holding (it)' (Talmy, 2000b: 65).

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[12] Slobin and Hoiting (1994) find that the boundary-crossing constraint (i.e., present in events in which the Figure crosses a boundary, such as *exit* and *enter*) is at work in French, Japanese, Korean and Turkish as well.

c.   Co-event-conflating verbs in constructions with the 'directional' form of the Path verbs (which, according to Talmy (2000b: 65), function like Path satellites).

Finally, for a parallel system of conflation, Talmy (2000b: 66) comments on modern Greek, which uses the path- and the co-event conflating types to represent most events of self-agentive motion 'with comparable colloquiality' :

(33)   Etreksa mesa (s-to spiti)

I-ran in (to-the house [ACC])

'I ran in (-to the house)

(34)   bika (trekhondas) (s-to spiti)

I-entered (running) (to-the house [ACC])
'I entered (the house) (running)'

2.2.4. The two-way typology: Path of motion

The two-way typology results from looking at the morphosyntactic constituents that characteristically encode the Path component of a motion event. Thus, Path appears in the verb root in *verb-framed* languages such as Spanish, in (34), and it is lexicalised in the satellite in *satellite-framed* languages such as English in (35):

(35)   La botella *salió* de la cueva

The bottle MOVED-out from the cave

(36)   The bottle floated *out* of the cave

As a remainder, a satellite is 'the grammatical category of any constituent that is in a sister relation to the verb root' (Talmy, 2000b: 102). Satellites, which can be either bound affixes or free words, encompass English verb particles, German separable and inseparable verb prefixes, Latin or Russian verb prefixes, Chinese verb complements, Lahu nonhead 'versatile verbs', Caddo incorporated nouns, and

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Atsugewi polysynthetic affixes around the verb root. Satellites[13] can encode not only Path of motion (e.g., English *out*, *into*, *away*, etc) but also Path + Ground (e.g., Atsugewi *–ict* 'into a liquid'), Manner (e.g., Nez Perce manner prefix *wis-* 'traveling with one's belongings') and Cause (e.g., Atsugewi *Ca-* 'from the wind blowing on P [Patient]').

Slobin (2004) provides a detailed list of verb- and satellite-framed languages:

- Satellite-framed languages:
    - Germanic: Danish, Dutch, English, German, Icelandic, Swedish, Yiddish
    - Slavic: Czech, Polish, Russian, Serbo-Croatian, Ukrainian
    - Finno-Ugric: Finnish, Hungarian
    - Chinese: Mandarin
    - Australian: Warlpiri

- Verb-framed languages:
    - Romance: Catalan, French, Galician, Italian, Portuguese, Spanish
    - Semitic: Moroccan Arabic, Hebrew
    - Turkic: Turkish
    - Basque
    - Japanese
    - Korean
    - Sign Languages: American Sign Language, Sign Language of the Netherlands

Talmy (1991, 2000b: Sections 2.5-2.8) suggests that the constituent where Path is characteristically expressed is to a great extent where aspect, change of state, action correlation, and realisation are characteristically encoded as well. In other words, the binary typology for motion events extends to at least other four types of events. Thus, verb-framed languages characteristically lexicalise the trajectory of motion, aspect, change of state, action correlation and realisation in the main verb,

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[13] See (Talmy, 2000b: Chapter 1, Section 3) for an in depth presentation of the grammatical category *satellite* and the sort of semantic notions it can lexicalise.

whereas it is expressed by verb particles or satellites in satellite-framed languages. Let us illustrate with a few examples of English and Spanish taken from Talmy (2000b):

(37)   Change of state

a.   I blew *out* the candle

b.   *Apagué* la vela de un soplido/ soplándola

c.   I burned him *to death*

d.   Lo *maté* con fuego/ quemándolo

(38)   Action correlation

a.   I played the melody *along* with him

b.   Yo lo *acompañé* tocando la melodía

c.   I *out*played him

d.   Yo lo *superé* tocando la melodía

In all of these examples, changes of state as well as action correlation are expressed in English with the particle or satellite, while the main verb encodes the Co-event (Manner or Cause). In contrast, in Spanish the main verb expresses the transition to a new state in (37), and coactivity in (38), while the adjunct, either a prepositional phrase (*de un soplido*, *con fuego*) or a gerund (*soplándola*, *quemándolo*, *tocando*), expresses the Co-event.

2.2.5. Typological shifts

The shift of a language from one preferred lexicalisation pattern to another, or its maintenance through the course of time is still an unexplored research area. The factors that may have tilted one language towards maintaining its typological pattern category and another language toward shifting to another must yet be discerned.

In a speculative fashion, Talmy (2000b: 118-119) comments that Latin, classical Greek, and Proto-Germanic all exhibited the presumably Indo-European pattern of using co-event-conflating verb roots together with path satellites that formed prefixes on the verb roots. Possibly because of phonological changes that

made the path prefixes less distinct from each other and from the verb roots, all three languages apparently became unable to maintain their inherited pattern. Both Germanic and Greek[14] proceeded to develop a new set of path satellites that largely supplanted the prior set. This permitted the maintenance of the inherited pattern for representing motion events with co-event verb conflation. On the other hand, the languages arising from Latin developed a new system of path-conflating verbs, rather than re-establishing the path satellite system. In this process, Talmy (2000b: 119) remarks that each of the daughter languages formed its set of path verbs in its own way by variously coining new verbs or shifting the semantics of inherited verbs so as to fill out the basic directional grid of the new path verb system. For example, the Latin verb *salio* ('jump') which combined with path prefixes such as *up* and *out* developed into Italian *salire* ('ascend') and Spanish *salir* ('go out') (cf. Wälchli, ms.). At the same time, these languages may have undergone the complementary change of advancing their gerundive construction for the expression of Manner and Cause.

Drawing on diachronic data, Anetta Kopecka (2004, 2006a, in press) deals with French's typological shift from a satellite-framed pattern to a verb-framed pattern. She provides diachronic evidence of this shift and concludes this shift can be mainly attributed to the weakening of productivity of verbal prefixes[15]. Although Old French prefixes lost their productivity, many remnants are found in modern French. On one hand, there are verbs with quite transparent prefixes, such as *s'en-voler* 'fly away' and *sur-voler* 'fly over' which conform to the satellite-framed pattern. On the other hand, there are more opaque verbs, whose composite nature is no longer discernable, such as *arriver* 'arrive' and *éloigner* 'move away', which is consistent with the verb-framed pattern.

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[14] Note that modern Greek is categorised as a verb-framed language by Papafragou et al. (2002, 2006).

[15] Other closely related factors contributed to this typological shift as well, namely, the loss of prefixed verbs and the substitution of prefixed verbs by other lexical items.

2.3. Typology revisited

2.3.1. Introduction

The typology of verb- and satellite-framed languages has engendered a good deal of research on motion event descriptions in a vast number of languages. On the basis of those numerous studies, this typology called for a reformulation. According to Ameka & Essegbey (in press), Slobin (2004) and Zlatev & Yangklang (2004), among other authors, there are some languages – as we will see in the following section – which do not seem to fit nicely into Talmy's two-way typology, as these languages encode both Manner and Path in morphosyntactic constituents of equal status. In the attempt to account for such linguistic diversity, the category of *equipollently-framed languages*, i.e., languages in which both Manner and Path are expressed by equivalent grammatical forms, has been proposed by Slobin (2004).

Moreover, Talmy's theory of lexicalisation patterns does not seem to take into account the fact that languages within the same typological group show a differing degree of manner and path elaborations. For example, Spanish and Basque are both verb-framed languages but their elaborations of Manner and Path are quite different, as has been shown by Ibarretxe-Antuñano (2004a, 2004b, 2004c, 2006a, 2006b). Basque describes Manner much more often than Spanish thanks to its sound symbolic expressions or movement imitatives, and thus Basque is closer to satellite-framed languages. On the other hand, in terms of Path, Basque generally offers more detailed paths or trajectories than Spanish. As a solution, it has been proposed that ranking languages on clines or continuums of manner (Slobin, 2004, 2006a, 2006b) and path salience (Ibarretxe-Antuñano, 2004a, 2004c, 2004d, 2008) would be more useful than placing them into typological categories. Slobin (2004, 2006a) and Ibarretxe-Antuñano (e.g., 2004a, 2008) identify a number of factors which contribute to a language's degree of path and manner salience respectively. Sections 2.3.3 and 2.3.4 will deal with this last proposal of *clines of semantic component saliency.*

2.3.1. Equipollently-framed languages

Slobin (2004: 249) proposed a tripartite typology of motion-event constructions: verb-framed, satellite-framed and equipollently-framed languages. Equipollently-framed languages are those languages in which both Path and Manner have roughly equal morphosyntactic status; in other words, Path and Manner are expressed by equivalent grammatical forms. There are at least three subtypes of equipollently-framed languages according to Slobin (2006a: 64):

(1) *Serial-verb languages*. In serial-verb languages it is not always evident which verb in a series, if any, is the main verb. The Niger-Congo, Hmong-Mien, Sino-Tibetan, Tai-Kadai, and Mon-Khmer families and some Austronesian languages belong to this group.

(2) *Bipartite verb languages*: the Hokan and Penutian languages described by Delancey (1989, 1996) are languages in which the verb consists of two morphemes of equal status, one expressing Manner and the other Path. Talmy (2000b: 113), drawing from Aoki (1970), provides a similar description of Nez Perce manner prefixes, such as *ququ. – láhsa* 'gallop-ascend'. Richard Rhodes (in a personal communication to Slobin in 2003) reports that such constructions are typical of Algonquian, Athabaskan, Hokan, and Klamath-Takelman. Huang & Tanangkingsing (2004) report that at least one Austronesian language, Tsou, has apparently developed bipartite manner-path verbs from serial-verb constructions.

(3) *Generic verb languages*: the Australian language Jaminjung (Schultze-Berndt, 2000) has a very small verb lexicon of about 24 function verbs. For encoding motion events, one of five verbs is used, expressing a deictic or aspectual function: *go*, *come*, *fall*, *hit*, *do*. These verbs are combined with satellite-like elements or coverbs, which encode both Path and Manner in the same fashion. Once more, neither path nor manner is unequivocally the main element in a clause.

In response to Slobin's proposal of a third group of languages, Talmy (in Ibarretxe-Antuñano, 2005: 331) agrees that the *equipollently-framed* category is a

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good way to view such linguistic variation, but he strongly argues that the criteria used for judging main verb status in those languages have been too few, and that authors need to apply an expanded set of criteria to elucidate which constituent is privileged with main verb status. These criteria or factors range from phonological to morphosyntactic to semantic factors.

2.3.3. Cline of Manner salience

Besides allocating languages into three typological categories, Slobin (2004, 2006a, 2006b) argues for a cline or continuum of manner salience. Independently from the lexicalisation pattern they belong to, languages differ significantly in the amount of manner information that is given, the frequency of mention of manner details, and the sort of fine grained manner distinctions that they encode. Thus, there are *high-manner-salient* languages and *low-manner-salient* languages. In Slobin's (2004: 250) own words:

In High-manner-salient languages, speakers regularly and easily provide information about manner when describing motion events, whereas in Low-manner-salient languages manner information is only provided when manner is foregrounded for some reason.

Furthermore, Slobin points out that high-manner-salient languages possess a rich expressive lexicon of manner verbs encoding fine-grained distinctions, and that their speakers are thought to pay attention to Manner. In contrast, low-manner-salient languages have a less extensive verb lexicon expressing Manner, and are thought to attend less to the Manner component of motion.

Slobin has observed that there are a number of factors that interact with lexicalisation patterns in influencing manner salience: lexical and morphemic availability, semantic constraints and processing load. One of the factors which plays a role in the amount of manner information given by a language is lexical and morphemic availability. The more accessible and codable the semantic component of Manner is in a language, the more manner information this language is likely to express. According to Slobin (2004), Manner of motion is more codable in a language when it is expressed (1) by a finite rather than non-finite verb, (2) by a single word rather than a phrase or clause, and (3) by a high frequency rather than

low frequency lexical item. In high-manner-salient languages, there is an accessible slot for manner made available in a number of ways:

a.   as main verb in satellite-framed languages

b.   as manner verb in serial-verb languages

c.   as manner morpheme in bipartite verbs

d.   as manner preverb in Jaminjungan languages

e.   as ideophones or expressive forms (e.g., Basque (e.g., Ibarretxe-Antuñano, 2006a), Japanese (e.g., Kita, 1997; Ohara, 1995, 2003; Sugiyama, 2000, 2005).

Apart from lexical availability and codability of manner, it is important to explore other factors, such as semantic constraints and processing load, which greatly influence the expression of manner of motion across languages. Lexical availability and ease of codability are not sufficient to understand why some languages possessing the means to express manner of motion fail to do so. One answer lies in what Slobin & Hoiting (1994) have called the *boundary-crossing constraint*, drawn from Aske's (1989) observations on the role of telicity in the expression of motion. It seems that verb-framed languages (such as Spanish) only license the use of manner verbs when the motion event depicted is *atelic*, that is, when the event is a motion activity with duration and no boundary-crossing is predicated. Consider the following example taken from Aske (1989: 3):

(39)   Juan bailó en círculos/de un lado para otro/hacia la puerta/hasta la puerta

John danced in circles/from one place to another/towards the door/to the door

For telic events where the end location of the Figure is stated, verb-frames languages cannot use a manner verb, as in (40), but necessarily mark this change of location with a path verb (*entrar* 'enter', *salir* 'exit', *cruzar* 'cross', etc) or neutral verb (*ir* 'go', *venir* 'come', etc). In order to add Manner some sort of subordinate construction is required (gerundive forms, prepositional phrases, etc) as in (41).

(40)   ? Nadaron adentro de la cueva

They-swam to-inside of the cave

(41)   Entraron a la cueva nadando

They-enter to the cave swimming

A further specification on the semantic constraints in the Spanish use of manner verbs is made by Naigles *et al* (1998). In their study, they found that Spanish speakers predominantly used path verbs for boundary-crossing events when the boundary traversed was horizontal. In contrast, for punctual vertical boundary crossing situations (e.g., *tirarse a la piscina* 'throw oneself/plunge into the pool'), Spanish licenses the use of manner verbs. It appears that a sudden boundary crossing allows the use of manner verbs in Spanish and maybe in other verb-framed languages.

Besides semantic constraints, another factor which comes into play in the low-manner salience in verb-framed languages is processing effort. Although verb-framed languages have the option of using adjuncts or subordinate constructions to express Manner of motion, this alternative is avoided most of the time. As Slobin (2006: 67) points out, the explanation for this general avoidance of Manner in verb-framed languages may be sought in the unnecessary foregrounding of Manner, which results in heavy processing of these constructions in terms of speaker's production and hearer's comprehension. When Manner of motion is expressed outside the verb root, it 'emerges into the foreground of attention'. In contrast, when expressed in the verb root, it 'forms part of the semantic background where it attracts little direct attention' (Talmy, 2000b: 128). According to Talmy, a semantic concept which is backgrounded is more readily expressed in a language, and 'its informational content can be included in a sentence with apparently low cognitive costs – specifically, without much additional speaker effort or hearer attention' (Talmy, 2000b: 129). Thus, in verb-framed languages, the expression of Manner outside the verb root is often neglected as it would direct one's attention to it causing an extra processing load.

In sum, languages differ considerably in the amount of manner information they express, even languages within the same typological group. The main factor is the preferred lexicalisation pattern (verb-, satellite-, or equipollently-framed

languages) though other factors come into play interacting with it and influencing the degree of manner salience in a given language.

2.3.4. Cline of Path salience

In line with Slobin's cline of Manner salience, Ibarretxe-Antuñano (2004a, 2004c, 2008) proposes a cline of Path salience. Languages vary in the degree of detailed description of Path of motion independently from the lexicalisation pattern they belong to. Her proposal classifies languages along a continuum between two ends: *high-path-salient* languages and *low-path-salient* languages. The former offer detailed and frequent descriptions of Path, whereas the latter, coarse descriptions usually limited to the use of path verbs with or without a Ground.

Although Path is an obligatory constituent of a motion event, languages differ in the degree to which they present Path and Grounds as well as complex trajectories. For example, Spanish favours the use of path verbs with no Ground over path verbs with explicit mention of the Ground, whereas Basque seems to favour the opposite. Moreover, when those two languages describe complex paths, Basque generally expresses complex paths with more than two Grounds, whereas Spanish typically uses one.

As we discussed in the previous section with respect to the expression of Manner, apart from typological factors, other factors have an effect on the elaboration of a semantic component. At this point, it is necessary to investigate what makes path of motion salient in a language. Ibarretxe-Antuñano (2004c, 2008) argues that some factors such as space and motion lexicon, word order, verb omission, dummy verbs, language orality and culture contribute to the degree of path and ground elaboration.

Regarding the first factor, the available linguistic devices for space and motion, high-path-salient languages often have rich lexical and morphological resources such as locational cases, locative nouns, sets of directionals, etc.

The factor of word order is related to the observation that languages whose verbs are in final positions tend to express details about Path and Ground before the verb. Thus, these complements have already provided all the information for path of

motion. This factor is crucial for languages such as Basque, Chantyal, Japanese and Turkish (Ibarretxe-Antuñano, 2008).

The third factor has to do with verb omissions. High-path-salient languages seem to be more likely to allow verb omissions than low-path-salient languages. The former readily omit the verb as the path complements present in the utterance are explicit enough, whereas the latter cannot omit the verb as it is one that conveys the necessary information for the description of the motion event.

The fourth factor is related to the existence of dummy verbs (i.e., verbs whose semantic content is poor) in high-path-salient languages. These verbs are accompanied by path complements for describing motion events. A typical example is the verb 'to be', such as in Swiss German and in Basque.

The fifth factor has to do with the concept of language orality (*Mündlichkeit*). Ibarretxe-Antuñano (2008) states that Koch & Oesterreicher (1985) and Oesterreicher (2001) consider that irrespective the mode of expression (written, oral) languages can be classified as conceptually written and conceptually oral. Conceptually oral languages are languages characterised by redundancy, elliptic constructions, hyperbolic expressions, self-corrections, etc. Ibarretxe-Antuñano (2008) notes that conceptually oral languages, such as Basque and Swiss dialect Muotathal, are more likely to be high-path-salient than conceptually written languages.

Last but not least, according to Ibarretxe Antuñano (2008), cultural factors have a say in Path salience. Wilkins (2004) and Bavin (2004) argue that aboriginal communities show a great concern for detailed attention to motion paths and for orientation in space. As a consequence, their linguistic descriptions reflect this concern.

2.4. The Linguistic-Relativity Hypothesis

2.4.1. Introduction

The question 'what is the relation between talking about reality and thinking about it?', in other words, 'what is the relation between language and thought?' has troubled many linguists and psychologists for many decades. Two general

approaches can be identified in the literature concerning the nature of the relation between language and conceptualisation: the *Universalist/Nativist* approach and the *Linguistic Determinism/Relativity* approach.

Before focussing on the Linguistic Relativity approach, which is the one that concerns us here, a brief presentation of the *Universalist/Nativist approach* is required. The *Universalist* or *Nativist approach* emphasizes cross-linguistic similarities due to our shared human nature. Noam Chomsky is the main figure of this universalist approach to language and reality. His reason to study language is:

Language is a mirror of mind in a deep and significant sense. It is a product of human intelligence…By studying the properties of natural languages, their structure, organization, and use, we may hope to learn something about human nature; something significant, if it is true that human cognitive capacity is the truly distinctive and most remarkable characteristic of the species. (Chomsky, 1975: 4)

Some basic tenets of this approach are (a) conceptual structures are universal, (b) syntax is also universal and innate, and (c) cross-linguistic variability does not reflect conceptual but merely linguistic differences. According to universalists, speaking a language consists of translating the *language of thought* (Fodor, 1975, 1983). As Li & Gleitman (2002: 266) put it 'humans invent words that label their concepts'; linguistic categories are a straightforward mapping from universal concepts. Universalists acknowledge that languages vary in the way they express reality, but claim that this cross-linguistic variability does not reflect any substantive differences in the way humans think about reality.

Conversely, cognitive linguistics/semantics adopts a different position. As we have already noted, one of the basic tenets of cognitive linguistics/semantics is that language is a window into conceptual structure. From there the claim follows that cross-linguistic variability reflects differences in conceptualisation. This is exactly the diverging point between universal approaches and the *Linguistic Determinism/Relativity approach*, with which cognitive linguistics is consonant and which we will present in the following section. However, there is also room for some sort of universalism in cognitive linguistics/semantics. Divergences in conceptualisation are 'thought to emerge from common **conceptualising capacity**, which derives from shared aspects of human cognition' (Evans & Green, 2006: 56).

In sum, the stance in cognitive linguistics/semantics on the relation between language and cognition is that in spite of the commonalities in the ways humans experience the world and in the ways humans think, different languages can give rise to distinct conceptual systems.

2.4.2. Sapir and Whorf's Linguistic Relativity Hypothesis

> Every student of language or society should be familiar with the essential idea of linguistic relativity, the idea that culture, through language, affects the way we think, especially perhaps our classification of the experienced world.
>
> (Gumperz & Levinson, 1996: 2)

Linguistic Determinism/Relativism is associated with the American scholars Edward Sapir and Benjamin Lee Whorf. They investigated the languages and cultural practices of several native American tribes in the first half of the 20th century. On the basis of his research, Sapir asserts:

Human beings do not live in the objective world alone […] The fact of the matter is that the "real world" is to a large extent unconsciously built up on the language habits of the group […] We see and hear and otherwise experience very largely as we do because the language habits of our community predispose certain choices of interpretation. (Sapir, 1929: 209)

Along the same lines, Whorf claims:

We dissect nature along lines laid down by our native language. The categories and types that we isolate from the world of phenomena we do not find there because they stare every observer in the face; on the contrary, the world is presented in a kaleidoscope flux of impressions which has to be organized by our minds—and this means largely by the linguistic systems of our minds. (Whorf, 1956: 213)

Their view is that languages have the power to create distinctive worldviews out of the same reality. This implies, therefore, that speakers of specific languages differ in the way they think and act. Despite much academic confusion in interpreting Sapir and Whorf as pointed out by Gumperz & Levinson (1996: 2, 22) and Pourcel (2005: 13-14), they did not claim that thought is completely determined by language. Their

position seems to have been that language (as a structured semantic system) influences habitual thought.

Sapir and Whorf were not the first to express the idea that language influenced thought, i.e., our understanding and perception of reality. In the 19th century, Wilhelm von Humboldt ([1836] 1988: 54) viewed language as the formative organ of thought. He held that thought is externalised in speech, and that '[t]hought and language are therefore one and inseparable from each other'. To his mind, every language has a characteristic *Weltanschauung* or world-view; language steps in between man and the world as language presents the world to man. Later on, the anthropologist Franz Boas, who took a less deterministic approach to linguistic diversity, observed that language 'determines those aspects of each experience that **must** be expressed' (1938: 127).

On the whole, according to Gentner & Goldin-Meadow (2003: 4), what has been coined as *The Sapir-Whorf hypothesis* states that (a) languages vary in how they carve up the world; (b) the structure of one's language influences how one perceives and understands the world; (c) therefore, speakers of different languages will perceive/conceptualise the world differently.

The Sapir-Whorf hypothesis[16] is generally considered as consisting of two versions: the strong version known as *linguistic determinism* and the weak version named *linguistic relativity*. Linguistic determinism defends the ideas that language entirely *determines* thought, our conceptualisation of reality, and that thinking would be impossible without language. To put it simply, according to this view, if a given language X does not have a linguistic category, speakers of language X cannot think about it. Thus, speakers of language X understand the world in a different way from speakers of language Y. Linguistic relativity claims language influences thought but not in such a deterministic way. According to this weak version, language plays a

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[16] See Pourcel (2005: Chapter 1) for a comprehensive and extensive discussion on Linguistic Relativity. In this chapter, she criticises the misunderstanding in the academic world of Sapir and Whorf's views. On the one hand, she remarks that these scholars did not claim that language entirely determines thought, though they appreciate its psychological scope. On the other hand, she observed that the principle of linguistic relativity is no longer considered an aim of anthropological linguistics; instead, there has been a shift from linguistic relativity as a research tradition to linguistic relativity as a questionable hypothesis.

part in non-linguistic cognition, for example, in how speakers remember, categorise, and reason about the world, but it does not rule out other alternatives.

The strong version of the Sapir-Whorf hypothesis was rejected by most linguists on the basis of negative evidence from the domain of colour (Heider & Olivier, 1972; Rosch, 1975, 1978), which showed that linguistic differences in labeling colours between English and Dani did not reflect any differences in the way speakers of both languages categorise and remember colours. In other words, language does not seem to determine thought.

After decades of neglect due to the dominance of universalist approaches to language (i.e., formal linguistics such as Generative Grammar) and of scepticism due to negative findings from research on colour, the language and thought question has again become an active research arena. According to Gentner & Goldin-Meadow (2003), work by Talmy (e.g., 2000a, 2000b), Langacker (e.g., 1987, 1999), Choi & Bowerman (e.g., Bowerman & Choi, 2001, 2003; Choi & Bowerman, 1991; Choi et al, 1999), and Levinson (e.g., Levinson, 1997; Levinson et al. 2002), among others, contributed to the renewed interest in linguistic relativity. These scholars analysed the semantic systems of different languages and demonstrated convincingly that important differences exist in how languages carve up the world. As evidence of this renewed interest, two volumes on the issue of Linguistic Relativity have been published: Gumperz & Levinson's *Rethinking Linguistic Relativity* (1996), and Gentner & Goldin-Meadow's *Language in Mind: Advances in the Study of Language and Thought* (2003), which cover a wide range of topics (space, gender, motion, objects vs. substances, etc).

Studies on linguistic relativity often adopt a domain-centred and comparative approach (cf. Lucy, 1992, 1997). This approach is the most efficient approach as contrasts among languages shed light on similarities and differences in a specific domain. When investigating linguistic relativity it is a prerequisite to identify an area of linguistic divergence which could lead to potential cognitive implications for their respective speakers in non-linguistic tasks (Pourcel, 2002: 126).

A prolific arena for research on linguistic relativity is space. For example, Levinson (1997) and Pederson et al. (1998) showed that speakers' linguistic frames of reference influenced their distinct behaviour in non-linguistic tasks (e.g., 'turning

the table' task). We postpone an overview of literature on motion exploring linguistic relativity to Chapter 3. In addition to space, linguistic relativity research on grammatical categories, such as number or gender, has been carried out. Lucy (1992) and Lucy & Gaskins (2003), considered the differences in the pluralization systems of Yucatec Maya and English, show that those differences have an impact on the way speakers of those languages behave in non-linguistic tasks. Boroditsky et al. (2003) suggests grammatical gender has pervasive effects on how people think about objects.

Overall, this research falls within the idea of *language as lens*, i.e., language influences how we see the world. According to Gentner & Goldin-Meadow (2003), language may be also seen as *tool kit* and as *category maker*. As such, language can be a strong force in facilitating representation and reasoning (e.g., Loewenstein & Gentner, 2005), and in the development of particular concepts (e.g., Choi & Bowerman, 1991; Bowerman & Choi, 2001, 2003; Casasola, 2005; Casasola et al., 2006). Under the theme language as tool kit, Loewenstein & Gentner (2005) suggest that the use of relational spatial language is instrumental for relational thought; when young children heard relational spatial language, their performance in a mapping task was enormously facilitated. Further research on language acquisition demonstrates the influence of language in the development of relational concepts or categories (i.e., language as category maker). Choi & Bowerman (1991) and Bowerman & Choi (2001, 2003) found that language-specific differences among the categories of containment and support in English versus tight and loose fit in Korean were in place as early as 17-20 months. Children construct spatial categories that tightly fit the adult system. Casasola (2005) and Casasola et al. (2006) also provided evidence in favour of the idea that language facilitates infants' formation of abstract spatial categories. In sum, current research suggests that language influences thought under specific circumstances.

2.4.3. Slobin's Thinking for Speaking

[R]esearch on linguistic relativity is incomplete without attention to the cognitive processes that are brought to bear, online, in the course of using language.

(Slobin, 2003: 158)

There is a special kind of thinking that is intimately tied to language – namely, the thinking that is carried out, on-line, in the process of speaking.

(Slobin, 1991: 75)

In 1991 the *Wenner-Gren Foundation Symposium* on the topic of rethinking linguistic relativity took place. One important outcome was Slobin's *Thinking for Speaking*: language influences thought when one is thinking with the purpose to use language. Despite the fact that Slobin was the first to develop an account of thinking-for-speaking, delineating its implications and making it palatable for empirical testing, similar observations had been voiced before by Pinker and by anthropologists:

Whorf was surely wrong when he said that one's language determines how one conceptualises reality in general. But he was probably correct in a much weaker sense: one's language does determine how one must conceptualise reality when one has to talk about it. (Pinker, 1989: 360)

Slobin (1991: 71) remarks that he is following a tradition in anthropological linguistics exemplified by the thinking of Franz Boas. As aforementioned, Boas observed that language plays a role in what aspects of reality must be expressed:

[I]n each language only a part of the complete concept that we have in mind is expressed, and […] each language has a peculiar tendency to select this or that aspect of the mental image which is conveyed by the expression of the thought. (Boas, [1911] 1966: 38-39)

Boas was probably wrong in supposing that all speakers have a common complete concept in their minds. However, he was right in suggesting that language selects what to communicate. In Slobin's (1991: 76) own formulation, 'the expression of experience in linguistic terms constitutes **thinking for speaking** – a special form of

thought that is mobilized for communication'. He argues that whatever effects language might have outside the act of speaking, the mental processes going on while formulating and interpreting utterances are not trivial and deserve special attention:

In the evanescent time frame of constructing utterances in discourse one fits one's thoughts into available linguistics frames. "Thinking for speaking" involves picking those characteristics of objects and events that (a) fit some conceptualization of the event, and (b) are readily encodable in the language. (Slobin, 1991: 76)

In the on-line process of thinking for speaking, speakers of a given language attend to the specific aspects of reality which are to be verbalised in language. In other words, language directs one's attention to particular aspects of experience.

Slobin (2003: 160) extends the label 'thinking for speaking' to all forms of linguistic production (speaking, writing, signing) and reception (listening, reading, viewing) as well as a range of mental processes (understanding, imaging, remembering) in the attempt to account for the far-reaching effects language use has on mental processes tied to language. To his mind, research concerned with thinking-for-speaking should have the following characteristics (Slobin, 2003: 161):

a. The research addresses a *selection of languages* and a *semantic domain* that is encoded with some frequency in all of the languages.
b. The semantic domain is encoded by *special grammatical constructions or obligatory lexical selections* in at least some of the languages under comparison.
c. The domain is relatively *more codable* in some of the languages to be compared.
d. The research addresses a selection of *discourse situations* in which the semantic domain is regularly accessed.

Slobin's research on thinking-for-speaking mainly concentrates on motion. The semantic domain of motion is important for all languages (a), and as we have seen in Section 2.2, it exhibits distinct lexicalisation patterns across languages (b). Furthermore, some dimensions of motion, such as manner of motion, are more codable in some languages than in others (c). And, finally, there are plenty of both

written and oral discourse situations in which this domain can be examined (d). Thus, the domain of motion is suitable for exploring how language-specific semantic patterns influence the way speakers of a language talk about motion. The next chapter will provide an in depth summary of thinking-for-speaking research on motion.

CHAPTER 3

BEYOND LINGUISTIC TYPOLOGIES: CROSSLINGUISTIC STUDIES ON MOTION EVENTS

3.1. Introduction

3.2. Thinking-for-speaking research

3.2.1. Introduction

3.2.2. Narrative style

3.2.3. Translation

3.2.4. Sign languages and co-speech gestures

      3.2.4.1. Sign languages

      3.2.4.2. Co-speech gestures

3.2.5. Language acquisition

3.2.6. Language processing

3.2.7. Extension to the domain of vision

3.3. Linguistic relativity research

3.3.1. Introduction

3.3.2. Positive evidence

3.3.3. Conflicting evidence

3.3.4. The role of telicity, type of Manner and type of Figure

3.4. Summary

3.1. Introduction

The domain of motion has received a good deal of research attention since Talmy's seminal work (e.g., 1985, 1991, 2000a, 2000b). This chapter provides a review of the whole gamut of research inspired or influenced by the Talmian theory of lexicalisation patterns for motion events. Such research could be divided into two parts: Slobin's thinking-for-speaking research (section 3.2) and linguistic relativity research (section 3.3).

Thinking-for-speaking research attempts to account for the far-reaching effects that language use has on mental processes tied to language. Sections 3.2.2 and 3.2.3 review the vast amount of research on the bearing that lexicalisation patterns have on the narrative styles of a large number of languages, as well as on the process of translating between typologically distinct languages. Next, sections 3.2.4 and 3.2.5 summarise research on both sign languages and gestures accompanying motion event descriptions. Such research also falls within the purview of thinking-for-speaking, namely thinking-for-signing/gesturing. In section 3.2.6 first language acquisition research is reviewed. This line of research addresses whether children are or are not influenced very early by their language-specific lexicalisation patterns, and the nature of the potential effect. After that, section 3.2.7 presents several experimental studies concerned with language-specific semantic biases in adults' language processing. Lastly, preliminary investigations into the relations between motion and vision are presented in section 3.2.8; it seems that habitual ways of speaking about motion also affect how we talk about vision.

Finally, in section 3.3, research on the everlasting question on the relation between language and cognition is assessed. Linguistic relativity research draws heavily on the crosslinguistic differences in the encoding of motion and asks whether these differences result in divergent conceptualisations of motion events by speakers of verb- and satellite-framed languages.

3.2. Thinking-for-speaking research

3.2.1. Introduction

To investigate thinking-for-speaking, Slobin concentrates on the domain of motion. His approach is comparative, initially investigating English and Spanish (e.g., Slobin, 1996a, 2000), but later broadening the scope to include other languages (e.g., Slobin, 2003, 2006).

As mentioned previously, Slobin (2003: 160) extends thinking-for-speaking to all forms of linguistic production (speaking, writing, translating, signing) and reception (listening, reading, viewing) as well as a range of mental processes (understanding, imaging, remembering) in the attempt to account for the far-reaching effects that language use has on mental processes tied to language. Throughout his work, he argues that serious study of language in use points to pervasive effects of language on selective attention for particular motion event characteristics. Path is the core of the motion event and, as such, it is always encoded in motion event descriptions, though by different linguistic elements (e.g., Talmy, 2000b). However, Manner of motion is an external component, optional in verb-framed languages but readily encoded in satellite-framed languages. This fact suggests that speakers of satellite-framed languages may pay more attention to Manner of motion than speakers of verb-framed languages. In brief, Slobin's proposal is that 'habitual, online attention to Manner has made it especially salient in S-language speaker's conceptualizations of motion events' (2003: 164). Thus, he hypothesises a number of cognitive consequences of this differential encoding of Manner of motion.

If a language provides fine-grained, habitual and economical expression of manner of motion:

(1) References to manner of motion will occur frequently, across genres and discourse contexts.

(2) Manner-of-motion verbs will be acquired early.

(3) The language will have continuing lexical innovation in this domain, including extended and metaphorical uses.

(4) Speakers will have rich mental imagery of manner of motion.

(5) Manner of motion will be salient in memory for events and in verbal accounts of events. (Slobin, 2003: 163-164)

Although these five consequences are called *cognitive*, it should be noted that the first three consequences refer to linguistic cognition, whereas the last two are cognitive hypotheses about speakers' conceptualisations of motion (i.e., non-linguistic cognition). Our review of thinking-for-speaking research in the following sections will thus focus on the first three, leaving the final two for Section 3.3.

3.2.2. Narrative style

A great bulk of research on motion events across a wide range of languages comes from elicited spoken narratives using a wordless picture book, *Frog, Where are you?* (Mayer, 1969). The book is about a boy who goes in search of his runaway frog. The book depicts several motion scenes, involving multiple types of Figures (humans and animals), Paths, and Manners of motion.

Native speakers of a large number of languages have been asked to orally describe what is happening in each of the pictorial scenes. In the majority of the cases, participants have been both adults and children. The main outcomes of this research have been two volumes under the same generic title *Relating Events in Narrative*: the first volume edited by Berman & Slobin[1] (1994) and the second by Strömqvist & Verhoeven[2] (2004).

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[1] Berman & Slobin's *Relating events in narrative: A crosslinguistic developmental study* is the result of collaborations with Ayhan A. Aksu-Koç, Michael Bamberg, Lisa Dasinger, Virginia Marchman, Yonni Neeman, Philip Rodkin, Eugenia Sebastián, Cecile Toupin, Tom Trabasso and Christiane von Stutterheim. Their original interest was in language development, though they also gathered adults' elicited narratives.

[2] Strömqvist & Verhoeven's *Relating events in narrative: Typological and contextual perspectives* examines American Sign Language (Galvan & Taub) and 13 spoken languages: Arrernte (Davis P. Wilkins), Greenlandic (Elisabeth Engberg-Pedersen and Frederikke Blytman Trondhjem), English, Spanish and Hebrew (Slobin and Judy Kupersmitt), Japanese (Aylin C. Küntay and Keiko Nakamura), Swedish and Icelandic (Hrafnhildur Ragnarsdottir and Sven Strömqvist), Thai (Jordan Zlatev and Peerapat Yangklang), Turkish (Ayhan Aksu-Koc and Göklem Tekdemir), Tzeltal (Penelope Brown) Basque (Iraide Ibarretxe-Antuñano), and Warlpiri (Edith L. Bavin).

In the first volume of the frog story studies, Berman & Slobin (1994: 198-199) summed up the typological contrasts found between the narratives of three verb-framed languages (Hebrew, Turkish and Spanish) and two satellite-framed languages (English and German):

Satellite-framed languages allow for detailed description of paths within a clause, because syntax makes it possible to accumulate path satellites to a single verb, along with prepositional phrases that add further specifications (e.g., the deer threw them off over the cliff into the water) […] The satellite-framed languages in our sample also tend towards greater specification of manner, probably because the lexicon provides a large collection of verbs that conflate manner with change of location (*crawl*, *swoop*, *tumble*, etc), often conflating cause as well (*dump*, *hurl*, *shove*, etc.). In verb-framed languages, such elaboration is more of a "luxury," since path and manner are elaborated in separate expressions, which are generally optional, and which are less compact in form. As a consequence of these differences, it seems—at least in our data—that English and German narrations are characterized by a great deal of dynamic path and manner description, while Spanish, Hebrew, and Turkish narrations are less elaborated in this regard, but are often more elaborated in description of locations of protagonists and objects and of endstates of motion. (Berman & Slobin, 1994: 118-119)

As stated in the quotation, narrative styles in verb- and satellite-framed languages are quite distinct in terms of dynamism of the events being depicted. Satellite-framed languages presented more dynamic and lively descriptions of motion events both with respect to manner of motion and paths, while verb-framed languages tended to focus on static descriptions of the setting and the protagonist's endpoint of location. Applying Ikegami's (1991) terminology of *become-language* (i.e., which focuses on the change from one state into another, such as Japanese) vs. *do-language* (i.e., which focuses on the activity of an individual, such as English), verb-framed languages might be described as become-languages since they devote more narrative attention to static descriptions of the setting and tend to express more often the Figure's endpoint of location, leaving the Figure's ways of moving through space and the trajectories it follows to be inferred. These ways of moving an trajectories, in contrast, are favoured by satellite-framed languages or do-languages. These differences in narrative style were unexpected consequences of the two lexicalisation

patterns posited by Talmy. Importantly, the differing ways of expressing Manner and Path in verb- and satellite-framed languages have an impact on narrative style which would not have been observed unless studying language in use.

For the purposes of this dissertation, we are concerned with crosslinguistic differences in the expression and elaboration of Path and Manner between English and Spanish. We briefly illustrate these differences with examples of English and Spanish taken from Berman & Slobin (1994) and Slobin (1996a, 2004). Regarding the expression of Manner, English elicited narratives displayed a greater token and type frequency of manner verbs than Spanish elicited narratives, which in turn contained a higher number of path verbs:

(1)   English motion verbs: *buck, bump, buzz, carry, chase, climb, come, crawl, creep, depart, drop, dump, escape, fall, float, fly, follow, get, go, head, hide, hop, jump, knock, land, leave, limp, make-fall, move, plummet, pop, push, race, rush, run, slip, splash, splat, sneak, swim, swoop, take, throw, tip, tumble, walk, wander.* (Berman & Slobin, 1994: 153)

(2)   Spanish motion verbs: *acercarse* 'approach', *alcanzar* 'reach', *arrojar* 'throw', *baja(se)* 'descend', *caer(se)* 'fall', *correr* 'run', *entrar* 'enter', *escapar(se)* 'escape', *huir* 'flee', *ir(se)*'go (away)', *llegar* 'arrive', *llevar(se)* 'carry (off)', *marchar(se)* 'go (away)', *meter(se)* 'insert (oneself)', *nadar* 'swim', *perseguir* 'chase', *poner(se)* 'put (oneself)', *regresar* 'return', *sacar(se)* 'remove (oneself)', *salir* 'exit', *saltar* 'jump', *subir* 'ascend', *tirar* 'throw', *traspasar* 'go over', *venir* 'come', *volar* 'fly', *volver(se)* 'return'. (Sebastián & Slobin, 1994: 261)

Furthermore, in Spanish narratives, Manner tended to be subordinated, i.e., expressed in optional constituents such as adverbs, gerundives, subordinated clauses, etc, since the Spanish main verb typically encoded Path of motion.

In terms of the expression of Path of motion, Spanish speakers tended to use bare motion verbs, i.e., 'verbs with no elaboration of path beyond the inherent directionality of the verb itself' (Slobin, 1996a: 200) more often than English speakers, who frequently added locatives and directionals to their motion verbs:

(3)   Se cayó

        Lit. S/he fell

(4)   They fell in/into the water.

Furthermore, in Spanish narratives just one piece of information about the ground was usually given, either the source (e.g., from X), the medium (e.g., along, through X) or goal (e.g., to, towards X). English speakers, in contrast, mentioned more ground elements per clause. In general, Spanish speakers tended not to express complex paths with a single verb; when a complex path was described together with one motion verb in Spanish, the trajectory usually involved the motion from a source to a goal as in (5). In contrast, in English it is morphosyntactically possible to attach several path segments to a single verb. Thus, English speakers readily compacted several trajectories (expressed by satellites) with a single verb as in (6):

(5)   Se cayó *de* la ventana *a* la calle

        Lit. S/he fell from the window to the street

(6)   He threw him *over* a cliff *into* a pond

Finally, when Spanish speakers described complex paths, they typically did so by using several verbs and breaking the event into several segments:

(7)   El ciervo le *llevó* hasta un sitio, donde debajo había un río. Entonces el ciervo *tiró* al perro y al niño al río. Y después *cayeron*.

        Lit. The deer took him to a place, where below there was a river. Then, the deer threw the dog and the boy to the river. And after that they fell.

        The same patterns observed in oral elicited narratives are widely attested in novels (e.g., Slobin, 1996a, 1996b, 1997; Özçalişkan & Slobin, 1999, 2003; Mora-Gutiérrez, 2001), and newspapers across a range of languages (e.g., Slobin, 2003; Slobin, 2006a). Writers of creative fiction and reporters, though free to make full and imaginative use of the language, conform to the same patterns found in the frog

stories. In terms of Manner, writers using satellite-framed languages devoted much more attention to Manner of motion than writers using verb-framed languages. Özçalişkan & Slobin (2003) provided interesting insights into the differing functions that manner expressions beyond the verb phrase seem to play in novels written in satellite-framed languages such as English and in verb-framed languages such as Turkish. Turkish writers tended to accompany their path verbs with adjuncts expressing Manner to compensate for the impossibility to encode Manner in the verb on many occasions (such as in boundary-crossing events, etc). Thus, the high rate of such manner expressions beyond the main verb in Turkish suggests a *compensatory function* of these expressions. In contrast, manner verbs in English were very often accompanied by manner adjuncts, which further contributed to and enriched the manner details of the motion scene expressed by the main manner verb. Thus, such manner expressions serve an *augmentative function* in English. In terms of Path, novels written using satellite-framed languages provided their readers with more elaborate descriptions of paths or trajectories of movement than novels written in verb-framed languages. In contrast, writers using verb-framed languages offered more information about the physical setting and the protagonist's psychological state, which allowed their readers to draw inferences about the manner in which the protagonist moves and the trajectories3 s/he follows.

The Frog stories considered in volume II (2004) offer a more complex picture of the crosslinguistic differences in the expression of motion. In the light of the data from a large number of languages, the rigid dichotomy of verb- and satellite-framed languages has been questioned (e.g., Ibarretxe-Antuñano, 2004a, 2004c; Slobin, 2004; Zlatev & Yangklang, 2004) as we saw in Chapter 2 (Section 2.3). On the one hand, a third typological group was proposed, *equipollently-framed languages,* for those languages whose morphosyntactic constituents expressing Path and Manner have equal status. On the other hand, it was argued that it could also be possible to rank languages in clines or continuums of manner and path salience, as languages

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[3] For research on the role of inferences in verb-framed languages versus satellite-framed languages, see Papafragou et al. (2006) for Greek vs. English, Pourcel (2005) and Pourcel & Kopecka (submitted) for French vs. English.

within the same typological group display different degrees of elaboration of manner and path.

Another important outcome from the 2004 volume has been the proposal or identification of a number of linguistic and non-linguistic factors which interact with lexicalisation patterns. Slobin (2004) pointed out that the Talmian typology alone cannot account for language use, and suggested that there are a number of additional linguistic factors playing a part in the expression of motion. A language provides its speakers with a range of lexical and morphological means for describing motion events. It has also been shown than sound symbolic expressions contribute as well to motion event descriptions in some languages, such as Basque (e.g., Ibarretxe-Antuñano, 2004b) and Japanese (e.g., Hamano, 1998; Kita, 1997):

(8)   Examples of sound symbolic expressions in Basque and Japanese   (taken from Slobin (2004: 233)

a.   Basque: *plisti-plasti* 'waddle'; *taka-taka* 'walk with small and short steps'

b.   Japanese: *doya-doya* 'noisy way of moving'

In addition, a variety of non-linguistic factors[4], including cognitive and cultural factors, have to be taken into consideration to fully account for patterns of narrative style.

Processing load is a cognitive factor that might account for the tendency to omit manner information in verb-framed languages. Although these languages have the option of using adjuncts or subordinate constructions to express Manner of motion, this alternative is avoided most of the time. The reason seems to lie in the unnecessary foregrounding of Manner when expressed in adjuncts, which results in heavy processing of these constructions in terms of speaker's production and hearer's comprehension (Talmy, 2000b: 128).

With regard to cultural factors, as Bavin (2004: 17) suggested: '[c]ultural values will influence what a speaker determines as important when telling a story'. Wilkins (2004) and Bavin (2004) pointed out that culture seems to play a role in the

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[4] See also Chapter 2 (Sections 2.3.3 and 2.3.4) for a review of the factors that play a role in a language's degree of elaboration of Manner and Path of movement.

great attention Arrernte and Warlpiri speakers give to path details. Australian aboriginal culture highlights the importance of journeys as well as locations, and this is without a doubt reflected in narrative style. Thus, in their frog stories, Arrernte and Warlpiri speakers overall described scenes with many more path fragments than speakers of other languages. Moreover, Bavin reported cultural preferences for repetition of old information together with new information:

Information is repeated with some new added […] telling the frog story, a speaker might give the information that someone fell, then someone fell to the water, then someone fell down to the water and then specify that the child and dog fell. (Bavin, 2004: 20)

In sum, Talmy's dichotomy of satellite- and verb-framed languages provides valuable insights into lexicalisation patterns for motion in language. It has been shown, however, that lexicalisation patterns alone cannot account for how language is used in narrative discourse. Verb- and satellite-framed rhetorical styles could not have been understood, except through a close examination of language in use. Furthermore, linguistic and non-linguistic factors should be taken into consideration so as to offer a more complete picture of how different languages talk about motion.

3.2.3. Translation

Slobin (2003) does not include any hypothesis on the consequences that differing attention to manner may have in the translation process. However, he opened this venue of research on translation of written narratives. This line of research addresses the process of translating between languages which belong to different typological groups, raising the question of how each language accommodates itself to the demands of the other. To explore this issue, Slobin and his collaborators used corpus data from 20th century novels and translations of *The Hobbit* by Tolkien (1937).

Slobin (1996a, 1997) initially focused on translations between English and Spanish novels. In general, it was observed that English texts lose more in the translation process than Spanish texts. With respect to manner information, when translating from English into Spanish, only 51% of the original English manner information was maintained in the Spanish target text, while in translations from Spanish to English, 77% of the original Spanish manner information was kept.

Moreover, English translators generally added manner descriptions not present in the original Spanish text. Consider the following examples taken from (Slobin, 1997: 460):

(9)   Spanish original: … luego de diez minutos de asfixia y empujones, *llegamos* al pasillo de la entrada …

        Lit. … after ten minutes of asphyxiation and pushes, (we) arrived at the entry-way …'

(10)   English translation: … after ten minutes of nearly being smothered or crushed to death, we finally *fought our way* to the exit …

In the original Spanish text, the verb *llegar* 'arrive' (a path verb) has been translated into English as *fight our way*. This expression encodes the difficulty of the motion toward the entry which is not expressed by the main verb in the original text. This manner information, however, could be inferred somehow by Spanish readers after reading *diez minutos de asfixia y empujones* Lit.'ten minutes of asphyxiation and pushes'. Furthermore, it is important to reflect on the fact that English and Spanish texts also differed in the type of manner information. As Slobin points out in the quotation below, English possesses a richer and more elaborated manner-of-motion verb lexicon than Spanish, whose manner verbs are quite general in meaning compared to those of English.

Languages seem to have a "two-tiered" lexicon of manner verbs: the neutral, everyday verbs – like *walk* and *fly* and *climb*, and the more expressive or exceptional verbs – like *dash* and *swoop* and *scramble*. In S-languages [satellite-framed languages, e.g., English], the second tier is extensive and elaborated, making distinctions that do not play a role in the considerably smaller second tiers in V-languages [verb-framed languages, e.g., Spanish]. (Slobin, 1997: 459).

The greater diversity of manner verbs in English poses additional problems for Spanish translators. When translating motion events without boundary crossing, they may or may not decide to express the manner information conveyed in the English original. If they opt to do so, Spanish translators tend to compensate lexical gaps by

including adjuncts. However, as has already been mentioned, Spanish translators sometimes decide not to include manner information at all. When the Manner of motion is the common, natural or default way of moving, Spanish uses more neutral verbs. For example, if we read *un pajaro entró a la habitación* Lit. 'a bird entered to the room', a Spanish speaker infers that the bird *flew* into the room. Thus, Spanish readers seem to rely more on context and draw inferences from the text than English readers, who are used to the overt expression (Sinha & Kuteva, 1995) of manner information (e.g., *The bird flew into the room*). Another closely related reason that might explain the avoidance of manner in adjunct expressions is that the pace of narration could be easily broken up if translators give too many unnecessary details to Spanish readers.

In terms of path details, English translations were faithful to the original Spanish in 92% of cases, and even occasionally added some more path information. In contrast, when translating from English to Spanish, the Spanish target text kept only 76% of path descriptions. In general, Slobin (1996a, 1997) concluded that it seems that Spanish translators resorted to omitting path and manner information when it was easily recoverable from context and it was not relevant enough to be included in the narrative. Thus, readers were left to rely on their inferences from context, which is to be understood as including both descriptions of the setting and information given earlier in the discourse. Consider the examples below taken from Slobin (1997: 443). In example (11), two trajectories are described (across X to Y), whereas in (12) the *across* trajectory is omitted as it can be easily inferred that, if the protagonist is in a room and s/he goes toward the door, the protagonist needs to walk across the room to reach the door.

(11)   English original: He strolled *across* the room *to* the door.

(12)   Spanish translation: Se dirigió a la puerta.

        Lit. (He) directed himself to the door

Furthermore, the impossibility of expressing several trajectories with a single motion verb in Spanish poses further problems to Spanish translators. As the examples below illustrate, English's smooth flow of the protagonist's trajectory is broken in

the Spanish translation by including a path verb for each one of the trajectories expressed by English satellites.

(13)   English original: Then I, too, went *down* the steep twisting path *through* the dark woods *to* the beach below

(14)   Spanish translation: También yo tomé entonces el pendiente y tortuoso sendero que, *atravesando* la arboleda oscura, *bajaba* a la playa.

Lit. Then I, too, took the steep and twisting path that, traversing the dark woods, descended to the beach.

On the whole, English translators seem to have an easier task than Spanish translators as in English it is syntactically possible to pack both manner information and elaborated trajectories (including several grounds) within a single clause. That might explain why English translators often even include manner and path information which is not present in the original Spanish text. For Spanish translators, in contrast, the task is harder as they have to decide what sort of ground, path and manner information to express in order not to slow down or break the pace of narration.

More recently, Slobin (2005) has widened his research scope to include translations from the English novel *The Hobbit* into nine languages: Dutch, German, Russian, Serbo-Croatian, French, Portuguese, Italian, Spanish, Hebrew and Turkish. His research further supports his previous findings regarding translations from English to Spanish, and generalises them to a larger number of languages. Verb-framed languages, as has been discussed, apparently are less concerned with manner of motion than satellite-framed languages, and they break complex paths into several segments. Overall, when translating from English into verb-framed languages, it appears that there is a greater loss of both path and manner information than in translations into satellite-framed languages.

Starting from Slobin's insights into translations from English to Spanish, Ibarretxe-Antuñano (2003) compared and analysed in detail the different strategies that Spanish and Basque translators follow when rendering fragments of Chapter 6 from *The Hobbit*. She started from the translation strategies described above (Slobin,

1996a, 1996b, 1997, 2004). However, in the light of her data, she provided a richer picture of translation strategies, as Table 3.1 illustrates:

MANNER INFORMATION	
Strategy M-1	Omission of any manner information
Strategy M-2	Translation of the same type of manner information (verb or separate expression)
Strategy M-3	Substitution of a manner of motion verb for a path verb
Strategy M-4	Substitution of a manner of motion verb for a motion verb
Strategy M-5	Substitution of a manner of motion verb for any verb
Strategy M-6	Translation of a portion of manner information
Strategy M-7	Translation of a different type of manner information
PATH INFORMATION	
Strategy P-1	Omission of some path element
Strategy P-2	Insertion of a new motion verb, usually a path verb
Strategy P-3	Translation of all path information

Table 3.1. Strategies for translating path and manner information in Spanish and Basque (taken from Ibarretxe-Antuñano, 2003: 165)

Her main contribution is the identification of more available strategies than those discussed in previous research. It is necessary to take into account the *quantity* and *type* of manner information translated into the target text: whether manner information is totally or partly rendered, whether translators choose to render manner verbs by other manner verbs which encode only part of the information (M-6) or even different types of manner information (M-7), and if totally omitted, which verbs are used instead (M-3, M-4, M-5).

3.2.4. Sign languages and co-speech gestures

Thinking-for-speaking research also extends to sign languages and to gestures accompanying verbal descriptions of motion events. Research on sign languages shows that sign languages encode much more conceptual information about the motion event than spoken languages, as we will see in Section 3.2.4.1. Research on co-speech gestures suggests that gestures are linked to what is being said, that is,

gestures fit the speaker's conceptualisation of the motion event for the purposes of speaking. Moreover, like sign languages, gesture also encodes spatial information which is not usually verbalised. We will consider co-speech gestures in Section 3.2.4.2.

3.2.4.1. Sign languages

Signed languages of course also have resources for describing motion events, some of which may be unique to the sign modality.

(Taub & Galvan, 2000: 177)

In a written interview conducted by Ibarretxe-Antuñano (2006c), Talmy[5] points out that there is accumulating evidence that spoken and sign languages are different; they differ in many respects in their structure and organisational principles (p. 261). One of the differences, as noted by Talmy, is that signed languages have a formally distinct subsystem that has no counterpart in spoken language. This subsystem is dedicated solely to the schematic representation of objects moving or located with respect to each other in space, and it has more spatial categories than the spatial portion of spoken language. Talmy counts thirty spatial parameters expressed by hand movements in signed language, whereas only six distinct parameters are found in spoken language. Sign language allows finer spatial distinctions, which are mostly iconic. Talmy (in Ibarretxe-Antuñano, 2006c: 262) illustrated these parameters in American Sign Language. A signer can move his dominant hand with respect to his nondominant hand in a certain complex pattern that simultaneously represents all the following parameters of a Motion event:

a.   The category identity of the Figure object

b.   The category identity of the Ground object

c.   The motive state of the Figure

d.   The Path of the Figure relative to the Ground

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[5] See also Talmy (2003) for a comprehensive account on the representation of spatial structure in sign languages.

e.   The elevation angle of the Path

f.   The curvature or contour of the Path (e.g., straight line, curve, circle)

g.   The distance between Figure and Ground (e.g., distal, proximal)

h.   The relative length of the Path before and after encounter with the Ground

i.   The Manner of motion

j.   The speed of motion

However, similarities between signed and spoken languages in terms of the expression of motion exist as well. For example, both modalities have basic conceptual elements, and in both, a spatial situation can often be conceptualised in more than one way.

Galvan & Taub[6] (2004) compared frog stories in English and in American Sign Language. Their results showed ASL signers consistently incorporated much more conceptual information into their descriptions of motion events than English speakers; the visual modality of the signer's hands, face and body allowed a richer description than spoken language alone or combined with gesture. Furthermore, their results supported the claim that motion events were conceptually separated into different pieces (Slobin & Hoiting, 1994; Supalla, 1982, 1990). Signers break up the details of Manner of motion, Paths, Figures and Grounds into different pieces which are presented sequentially (like in spoken languages) instead of simultaneously. Some of these elements are repeated to provide coherence to the separated presentation. Their findings, moreover, suggested that boundary-crossing events were, as in verb-framed languages, special for ASL signers: 'they would create forms with straight paths for non-impeded crossings and complex paths for impeded ones' (ibid: 212). Finally, Galvan & Taub maintained neutrality on the issue of whether or not sign languages are verb-framed languages. Although Slobin & Hoiting (1994) claimed that sign languages are *complex verb-framed languages* (i.e., verb-framed because they express Path; complex because of simultaneity of Figure, Manner and Path), they suggested that 'we need to expand Talmy's typology to accommodate languages which conflate Path, Manner, and Figure into a single verb form' (Galvan & Taub, 2004: 212).

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[6] See also Taub & Galvan (2000).

3.2.4.2. Co-speech gestures

David McNeill and his colleagues (e.g., McNeill, 1992; McNeill & Duncan, 2000; Taub, Piñar & Galvan, 2002; Özyürek & Kita, 1999; Kita & Özyürek, 2002; Özyürek et al, 2005) explore the area of nonverbal expression of motion in studies of co-speech gesturing, i.e., gestures accompanying speech. One of the methods they use is to show participants a cartoon movie (*Canary Row*, with Tweety and Sylvester) and ask for a subsequent narration, which is videotaped for later analysis. Their research addresses the question of whether gestural descriptions of motion events reflect cross-linguistic differences in lexicalisation patterns. On the whole, distinctly different patterns of gesture in speakers of English, Spanish, Turkish and Japanese were found.

McNeill (2000) and McNeill & Duncan (2000) reported distinctly different behaviour for English and Spanish speakers' co-speech gestures. Their studies suggested that speakers of Spanish commonly conflated Manner and Path in their gestures. Although Manner was often omitted in their verbal descriptions, Manner was abundant in their gestures and was distributed over path phrases given in speech. In other words, manner gestures were present throughout the utterance. Such distribution of manner gestures over verbalised path expressions was termed *manner fog*. Since Manner was not usually verbalised in speech but was frequently gestured, they concluded that gestural descriptions by Spanish speakers served a compensatory function.

Taub, Piñar & Galvan (2002) also focused on English and Spanish co-speech gestures. Though their results were still preliminary, it seemed that English speakers gave greater attention to Manner both lexically and gesturally than did Spanish speakers. In line with their verbal descriptions, gestures by English speakers expressed both manner and path information whereas gestures by Spanish speakers generally downplayed manner details. These results might be interpreted as if gestures only encode what is expressed in speech, and thus, gesture is tightly tied to language[7].

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[7] The interested reader can find a summary of competing theories of gesture production in Kita & Özyürek (2002).

Kita & Özyürek (2002) and Özyürek et al (2005) found that gestures that were used to express the same motion events in English, Japanese and Turkish were influenced simultaneously by (a) how conceptual elements were expressed in each language, and by (b) spatial information in the stimulus (i.e., in the Tweety and Sylvester cartoon movie) which was never verbalised. On the one hand, their results showed that linguistic differences in the expression of motion were reflected in gesture. Therefore, a semantic feature such as Manner of motion, which is difficult to verbalise in verb-framed language, is less likely to be gestured by Japanese and Turkish speakers than by English speakers. Furthermore, if a language can compact or package manner and path information as English does, then, it is more likely that a single gesture will be used instead of two separated gestures (as was the case for Japanese and Turkish speakers). Finally, it was also found that in cases where there were no cross-linguistic differences in speech, the gesture patterns looked alike. On the other hand, gestural representation was also found to be influenced by spatial information of the stimulus. Speakers of English, Japanese and Turkish regularly gestured certain spatial details which were not verbally expressed in the concurrent speech (e.g., movement from right to left, which was not considered as relevant for linguistic description). This sort of information is typically encoded in sign languages.

In light of the existing research on co-speech gesture, it might be concluded that data on gestures in Spanish is not yet conclusive. It might well be the case that manner gestures in Spanish could provide a sort of compensation for gaps in the lexicon, but quantitative data is needed before drawing such a conclusion. On the other hand, research on English, Japanese and Turkish, however, conclude that 'gestures do not merely encode imagistic representations of the events but those aspects that fit conceptualization of the event for the purposes of speaking' (Özyürek et al., 2005: 224).

3.2.5. First language acquisition[8]

> [C]hildren are sensitive to language-specific categorization principles from their earliest productive uses of spatial forms, and at least in some cases in comprehension even before production begins.
>
> (Bowerman & Choi, 2001: 505)

> [L]anguage properties influence how children select or organize spatial information during the course of development.
>
> (Hickman, 2006: 281)

Cross-linguistic research has unveiled variations in how children acquire spatial language (e.g., Bowerman, 1996; Bowerman & Choi, 2001, 2003; Casasola, 2005; Choi & Bowerman, 1991; Choi et al., 1999). Such variability across languages casts doubts on the existence of universals in the acquisition of spatial language[9], and suggests that language-specific patterns have an impact on linguistic and cognitive development. From early on, children are guided by their language and seem to construct a spatial language which closely fits the adult system.

Cross-linguistic differences can also be observed in how children talk about motion in elicited oral narratives (e.g., Berman & Slobin, 1994), verbal descriptions of video clips (e.g., Hickman, 2006; Oh, 2003) and spontaneous conversations (e.g., Semilis & Katis, 2003). Research using the frog story picturebook as an elicitation tool has shown that children acquiring their mother tongue are guided by the set of distinctions in their language to attend to specific features of events while speaking (Berman & Slobin, 1994; Özçalişkan & Slobin, 1999; Slobin, 1996a; Slobin, 2001). Generally speaking, children speaking satellite-framed languages use a higher

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[8] The reader interested in second language acquisition can see, for example, Hohenstein, J. Eisenberg, A. & Naigles, L. (2006) which concentrates on cross-influence of L1 and L2 in Spanish-English bilinguals in the linguistic expression of motion events.

[9] For universalist accounts of spatial language, see, for example, Landau & Jackendoff (1993). For experimental research suggesting general cognitive principles in language acquisition of spatial terms, see for example, Munnich & Landau (2003), Helpos & Spelke's (2004) replication of McDonough, Choi & Mandler (2003) and Landau & Hoffman (2005).

percentage of tokens and types of manner verbs than children speaking verb-framed languages, who tend to use path verbs instead. As Slobin (2003) hypothesised, manner-of-motion verbs are acquired very early by children learning satellite-framed languages. Furthermore, children speaking satellite-framed languages use motion verbs with some path elaboration, whereas such descriptions are hardly used by children speaking verb-framed languages. It is also noted that older children are closer to the adult system than younger children. As age increases, they are capable of providing more detailed descriptions of the motion event in line with the adult system. Verb-framed-language speaking children are more concerned with setting the scene and asserting changes of location (results) than satellite-framed-language speaking children, who assert trajectories and attend to Manner of motion (actions).

Kyung-ju Oh (2003) elicited verbal descriptions from 3-year-old Korean-speaking and English-speaking children using clips depicting everyday motion by humans. In line with previous findings, she also found that children are influenced very early by the typological properties of their native language. Korean-speaking children produced manner verbs less frequently and path verbs more frequently than English-speaking children. Furthermore, Korean children produced descriptions encoding Path but not Manner more frequently than English children, who produced verbal descriptions encoding both Manner and Path. On the other hand, some common characteristics were noted between Korean-speaking and English-speaking children. At an early age, both groups rarely expressed Path and Manner together in their descriptions, though English children did so more frequently. Oh speculated that at an early age children might be too limited cognitively to attend to various components of a motion event at the same time, though another possibility might be that they have not yet mastered the skill to pack both manner and path information into a single description. In addition, it was found that children from both language groups seemed to be more biased toward Manner than toward Path, and that they tended to produce coarse manner of motion verbs (such as *walk*, or *run*).

Maya Hickman (2003, 2006) used animated cartoons on a computer screen to elicit verbal descriptions. Her results showed that typological properties of English and French as satellite-framed and verb-framed languages strongly influenced how children (three- and five-year-olds) talked about motion. In line with previous

findings, she noted that English- and French-speaking children used more complex descriptions of both Path and Manner together with increasing age.

In terms of spontaneous or naturalistic conversations, Selimis & Katis (2003) showed that Greek- and English-speaking children followed the typological patterns of their mother tongue in preferring verbs which lexicalise either Path (for Greek) or Manner (for English). Moreover, it was found that these differences appeared even earlier than two years of age, but then diminished with age as the manner verb lexicon in Greek children got richer in later development.

All in all, these studies provide linguistic data suggesting that children adopt language-specific characteristics from a very early age. However, some characteristics seem to be mastered early, while others develop more slowly.

3.2.6. Language processing

There is abundant research which has asked whether there are psychologically real effects of language-specific semantic patterns on how we process language. Some studies suggest that language-specific verb semantics (i.e., whether languages typically code either Path or Manner in their motion verbs) seems to have a pervasive influence on how speakers interpret the meaning of novel verbs, as well as on speakers' performance on other linguistic tasks (such as verb generation, etc).

Naigles & Terrazas (1998) found that adult English and Spanish speakers differed in their expectations as to whether a novel verb encoded Manner or Path, the former favouring Manner and the latter Path. Furthermore, in their experiment, participants adjusted their assumptions about whether a novel verb expressed Manner or Path based on the syntactic frame in which the verb was presented. Naigles & Terrazas showed English and Spanish participants a video clip of a motion event— e.g., a woman skipping towards a tree—and gave them a single sentence containing a novel verb: e.g., *She's kradding the tree!* or *She's kradding towards the tree!*. They used two kinds of frames: *path frames* containing a verb plus a noun phrase, and *manner frames* containing a verb plus a preposition plus a noun phrase. Then, participants were shown two further videos on different screens, one preserving the Manner of the event but changing the Path (e.g., a woman skipping away from the tree) and one preserving the path of the event but changing the manner (e.g., a

woman marching towards the tree). Participants' task was to indicate which video depicted the novel verb. On the whole, it was found that adult speakers of English chose the video that preserved the Manner rather than the one that preserved Path, and the reverse was true for Spanish. Furthermore, they found effects of syntactic frame on the interpretation of the novel verbs; participants were more likely to choose the manner video if they had heard the novel verb in a manner frame, and more likely to choose the path video if they had heard the verb in a path frame.

Along the same lines, Cifuentes-Férez & Gentner (2006) tested whether English and Spanish speakers would show effects of their differing semantic systems when inferring the meanings of novel motion verbs in brief written narratives. They presented English and Spanish monolingual speakers with eight short passages containing either a novel noun or a novel verb. After each passage participants were asked 'What does X mean?' or 'What is an X?'. In order to prevent people from simply translating the novel words into existing words, the passages described unusual events – e.g., rolling a device designed to remove burrs over one's clothes; moving across a hall using cleaning-rags underneath one's shoes, etc. The descriptions of the events always included both a path and a manner, so that participants could lexicalise either or both. As predicted, Spanish speakers produced a significantly higher number of path verb interpretations than English speakers. Conversely, English speakers produced more manner verb interpretations than Spanish speakers. These results were obtained despite the use of syntactic frames that biased them against the predicted patterns. Spanish speakers were given frames that included a preposition, thus encouraging interpretation in terms of a manner verb. English speakers were given bare transitive frames—which would normally invoke a path interpretation—yet the English speakers still preferred manner verb interpretations. All in all, English and Spanish speakers were guided by their differing semantic systems in inferring the meanings of novel motion verbs from context. Their specific linguistic systems influenced which features they extracted from context as semantic components of the novel verbs.

Apart from cross-linguistic studies examining the pervasive influence of language-specific semantic patterns on language processing, we also find research addressing the nature of those effects within a single language. A good instance is

Billman & Krych (1998), which addressed how memory for motion events presented in video clips might be influenced by linguistic information (an accompanying verb). They presented English speaking participants with videotaped events accompanied by either manner or path verbs. Then, participants returned for a visual recognition test in which no verbs were presented. The task was to discriminate the old items from new items with changed Manner or Path of motion. Their results showed that the presence of either a path verb or a manner verb altered the participant's recognition of events. They found an effect of the type of verb initially given by the experimenter on the type of recognition errors. More concretely, hearing a path verb (as opposed to a manner verb) made participants more likely to correctly reject a changed Path, and hearing a manner verb helped participants to reject changed Manner.

In a later study, Billman, Swilley & Krych (2000) also looked for effects of the type of verbs present at encoding (path or manner verbs) on later recognition. However, the language manipulation was more indirect; in this experiment path and manner verbs were not given by the experimenter but produced by participants. Participants were asked to generate a verb to describe a set of video clips, and on the next day, their task was to discriminate old clips from new clips. In line with their previous research, they found that the type of verb generated by participants had an effect on later event recognition. On the whole, these studies suggest that when a person hears or produces a verb, distinctions in verb meaning (path and manner) bias recognition. Using a particular type of verb channels the speaker's attention to some properties of the event while downplaying others.

Finally, Havasi & Snedecker (2004) argued that even though language-specific semantic patterns are learned while acquiring one's native language, both adults and children could be trained to develop either a path or manner bias. They taught English-speaking adults twelve new motion verbs. For each motion verb, participants saw an ambiguous scene with a salient Path and Manner, and after obtaining their initial interpretation, they saw five further instances of the new verb which disambiguated its meaning. Half the participants saw video clips with the same Manner but varying paths (which favoured a manner interpretation), and the other half saw video clips with the same path but varying manner (which favoured a

path interpretation). Finally, participants were asked to extend the new verb. On the whole, it was found that English-speaking adults have an initial manner bias, as shown by their initial interpretations. However, in response to the input, they were highly like to extend the new verb according to the common semantic pattern they had experienced across the five exemplars. Moreover, there was preliminary evidence that five-year-olds were sensitive to this manipulation as well; they developed either a manner bias or a path bias in their novel word interpretations based on which series of videos they had received. This suggests that the semantic patterns of a language act as default biases, not as fixed rules; they can be overridden by experience.

3.2.7. Extensions to the domain of vision

Some scholars have pointed out that motion language is used metaphorically in a wide array of abstract domains. For example, Narayanan (1997) remarked that bodily movement serves as a metaphor for political and economic events: prices can *drift*, *soar*, *lurch* or *plunge*; Özçalişkan (2002, 2004) pointed out that manner-of-motion verbs are used for expressing basic emotional states: *run into frustration*, *his mind plunges in an awkward thought*. This section does not deal with those abstract domains but concentrates instead on the relation between motion and vision.

In a highly suggestive paper, Slobin (in press) explored the relations between paths of motion and paths of vision in English, Russian, Spanish and Turkish. In both English and Russian there are complex visual paths such as *look from X to Y*, *look past X into Y* and *look out into X*. In contrast, Spanish and Turkish generally express a single visual trajectory (e.g., *look into X*, *look through X*, etc), though sometimes the complex trajectory *from X to Y* is found. Even though visual path verbs are not available in most languages[10], Slobin concluded that the patterns for conceptualising

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[10] As Slobin (in press) noted, Toba is the only documented language that has a set of vision verbs which also encode path information (Klein, 1981). Toba is a Guaykuruan language spoken in Argentine Chaco whose vision verbs express the direction of vision in a similar fashion to motion verbs. For example, *wa* 'look inward', *la* 'look ahead', *sa:t* 'look up at something moving'. According to Klein (1981: 234), 'the notion of direction of the eyes appears to be equivalent in the mind of the native speaker to the notion of direction of a person's legs across space'.

and expressing physical paths carry over into the conceptualisation and expression of visual paths. Similar conclusions are reached in Chu (2003), who analysed visual path expressions in Mandarin Chinese and suggested that this serial verb language uses many physical path expressions with verbs of seeing.

Cifuentes-Férez (2006) contributed to this preliminary research on the relationship between motion and vision as well as to the research on narrative translations from satellite-framed into verb-framed languages. For her research, she chose the well-known English novel *Harry Potter and the Order of the Phoenix* and its translation into Spanish, *Harry Potter y la Orden del Fénix*. Her main aim was to investigate whether the crosslinguistic differences between English and Spanish which had been reported for the domain of motion also applied to the domain of vision. The basic assumption was that motion and vision are related domains at least in two respects: (a) seeing is a type of *fictive motion*[11] (e.g., Talmy, 2000a: Chapter 2), and (b) verbs of seeing appear in the same kind of constructions as verbs of motion (e.g., Gruber, 1967; Talmy, 2000a; Slobin, in press). Unlike Slobin (in press), who just focused on the relations between paths of motion and paths of vision, Cifuentes-Férez centred her research attention on both Path and Manner in both domains; she compared and contrasted the degree of manner and path elaboration per domain and language and she examined as well the translation strategies that the Spanish translator resorted to in order to adapt the English source text to the Spanish target text.

In terms of Manner of motion, her results were consistent with previous research, and went a step further in unveiling some crosslinguistic differences. English and Spanish differed in (a) which morphosyntactic constituents typically encoded manner information, (b) the semantic specificity of their manner verbs, and (c) the function that adjuncts encoding Manner had. As noted previously, the English manner-of-motion verb lexicon is richer and presents finer manner distinctions than does Spanish. It was found that Spanish motion verbs did not usually encode manner information about the Figure's physical or mental state (whether s/he is tired or

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[11] *Fictive motion* refers to those events which are linguistically expressed as if actual motion occurs. Other labels for the term *fictive motion* are Langacker's *abstract motion* (1987), and Matsumoto's *subjective motion* (1996).

angry, or s/he walks unsteadily, etc) and that the translator usually expressed this information in adjuncts to compensate for lexical gaps (i.e., a compensatory function). In the original English narrative text, in contrast, manner information outside the verb root had an augmentative function as it further enriched the manner information conveyed in manner verbs. With regard to manner of vision, it was concluded that the English text used manner-of-vision verbs that were more specific (i.e., richer semantically) than those of Spanish. As in the domain of motion, adjunct expressions seemed to make up for lexical gaps (e.g., *glare* was translated by a general vision verb plus an adverbial *mirar con hostilidad* 'look with hostility'). Furthermore, as Slobin (in press) had already pointed out, Spanish texts used nominals (e.g., *ojos* 'eyes', *mirada* 'look', etc as in *lanzar miradas desafiantes* 'throw challenging looks') to describe visual acts much more often than the English text. It seemed that the Spanish translator resorted to these linguistic means to compensate for the lack of Spanish manner-of-vision verbs encoding such fine-grained information. On the whole, it was observed that there was a substantial loss of manner information in the Spanish translation: 36.46% of cases for manner-of-motion verbs and 38.46% of cases for manner-of-vision verbs were lost in translation. Despite the available linguistic means, manner-of-motion and manner-of-vision in the original English text were not fully conveyed in the Spanish translation; on many occasions, manner information was not as specific as in the English original, and it was even translated by different manners of movement and of seeing.

When examining Path of motion, the crosslinguistic differences reported in previous research were further attested. In the Spanish texts, the use of path verbs was significantly higher, and Spanish descriptions of Path were less complex and contained fewer references to the Ground than those in the English original. English presented a greater flexibility in the sort of path and ground combinations than Spanish, which generally only expressed one trajectory plus a ground (e.g., *en X* 'in/into X'; *de X* 'from X'; *hacia X* 'towards X'). The most complex path segment found in the Spanish translation was *por X hacia Y* 'through X to Y', whereas the most complex trajectory in the English original was *down X, past Y, and down into Z* (four satellites plus 3 grounds). With regard to visual paths, no vision verbs in English and Spanish expressing Path or trajectory were found (Slobin, in press).

Visual trajectories were much less complex than physical ones and tended to mention only one ground (i.e., the observed entity); yet, English visual paths were more elaborated than Spanish visual paths. Regarding the translation strategies, it was found that the Spanish translation kept path information in 51.61% of cases for motion and in 50% of cases for vision, mostly by incorporating path verbs. However, some trajectories were frequently omitted in the translation, particularly, paths without grounds, such as deictic paths (e.g., *around*, *back*) and vertical paths (e.g., *up*, *down*).

Although examinations of original Spanish narrative texts would be needed before we could draw sound conclusions on how Spanish expresses visual acts, this preliminary exploration of the relations between motion and vision suggests that the crosslinguistic differences reported for motion descriptions in narratives apply also to the expression of visual acts. English, as a satellite-framed language, seems to have a rich manner lexicon of verbs of seeing, and can readily compact several paths with a single verb. In contrast, Spanish, as a verb-framed language, generally expresses a single visual path: to/towards the entity being perceived (or *Ground* in Talmy's terminology), and their vision verbs are less specific semantically than those of English. In sum, these differences reflect how language-specific ways of speaking about motion influence how we talk about vision, and suggest that vision may be conceptualised in terms of motion.

3.3. Linguistic relativity research

3.3.1. Introduction

The domain of motion has received special attention in linguistic relativity research. According to Pourcel (2002: 127), motion events are an ideal arena for investigating Whorfian effects for a number of reasons: first, languages differ in how they carve up the domain of motion. Second, motion events are referred to in language with a high level of frequency, and they are representative of actual language use. And third, unlike the domain of colour, in this domain there are no 'biologically-determined concepts waiting to be labelled' (Slobin, 2000: 122).

Research on linguistic relativity effects in the domain of motion addresses whether the differences in lexicalisation of Path and Manner result in divergent conceptualisations of motion events. More concretely, research focuses on whether the selective lexicalisation of Manner, optional in verb-framed languages but readily expressed in satellite-framed languages, 'entails differential levels of cognitive salience of that variable across verb- and satellite-framed language speakers, resulting in overall divergent conceptualisation of motion events' (Pourcel, 2005: 126).

This question has been investigated by a number of scholars who provided both positive and negative evidence for the bearing of motion language on cognition. Section 3.3.2 offers a summary of research which provides positive evidence for the claim that cross-linguistic differences in the encoding of motion have an impact on the way we think about motion, in particular on mental imagery, on memory for manner of motion and on how people form new concepts. Research on the negative side suggesting that language does not affect cognition is assessed in Section 3.3.3. Even though the same methods are approximately followed, studies in this arena have produced mixed results. In light of this conflicting evidence, section 3.3.4 reviews research by Pourcel (2004a, 2004b, 2005) and Kopecka & Pourcel (2005) which suggests that the intrinsic nature of the stimuli employed may be responsible for a significant portion of the divergent results.

3.3.2. Positive evidence

As we saw in the introduction, Slobin (2003) hypothesised two cognitive consequences concerning linguistic effects on imagery and memory: speakers of satellite-framed languages will have rich mental imagery of Manner of motion, and Manner of motion will be more salient in their memory.

Slobin (2000) reported richer mental imagery of manner of motion in English speakers than in Spanish speakers. In a suggestive experiment, he gave passages from novels to read to English and Spanish native speakers as well as English and Spanish bilinguals, asking them later to report mental imagery for the protagonist's Manner of movement. The examples were extracted from Isabel Allende's *La casa de los espíritus*, and did not contain manner verbs, but the author provided

information about the setting and the protagonist's inner state allowing inferences of manner of motion. His findings showed elaborated mental images for Manner in English reports and less vivid or poorly detailed mental images for manner in Spanish. Interestingly, bilinguals behaved according to the text's language: if the text was in English, and therefore, they were asked to provide reports in English, their mental images for manner were significantly richer than when the text and the task were in Spanish.

Kersten et al. (2003) showed that greater attention to Manner of motion by English speakers relative to Spanish speakers is revealed as well in learning tasks. English and Spanish monolingual participants viewed animated cartoons in which bug-like creatures moved along various non-nameable paths in various non-nameable manners. They were told that those creatures belonged to four different species and they had to guess which by pushing one of four buttons. After each choice they were told if they had guessed correctly or not. On the whole, no differences in how long they took to learn to distinguish the bug-like creatures in terms of Path was observed, but English speakers were significantly faster in learning to distinguish them in terms of Manner despite the fact none of these manners of motion could be lexicalised in English manner verbs. Furthermore, they also tested bilinguals in Spanish and in English, and their results were similar to those found with monolingual speakers. They concluded that the observed differences between the two groups regarding learning Manner of motion concepts were a result of the different languages they spoke. In sum, people learn to attend to the sorts of event details that are encoded in their language.

Kyung-ju Oh (2003) reported differences in recall of manner details between English and Korean monolingual speakers. She devised an experiment in which the initial task of the participants was to view and describe some video clips. The clips included several manners of motion (e.g., walking, striding, jogging, strolling, trudging, sprinting, etc) as well as several paths (e.g., out of, up, down, around, along, etc). Also, some filler clips which did not depict motion or displacement were included (cooking in a kitchen and working with a computer). As predicted for this task, English speakers provided more tokens and types of manner verbs and extended manner descriptions than Korean speakers. The two language groups differed

according to their language-specific lexicalisation patterns. The difference across languages was more pronounced in the descriptions of Walking-and-boundary-crossing video clips. After participants completed this task, they were presented with an unexpected task. In this surprise task, they were told to compare their memory of each clip with a standard clip of the same actor walking at a normal rate and then answer a questionnaire on details of the events. The results showed that English speakers were more accurate in identifying the length of stride and degree of arm swing in the original clips than Korean speakers, although those specific manner details were not present in their verbal descriptions from the initial task. Overall, English speakers performed better than Korean speakers on memory for manner information and answering manner questions about the videotapes.

Pourcel (2005) compared English and French speakers' performance on two recall tasks. English and French speakers were asked to view a short extract from a silent Charlie Chaplin film, *City Lights*, and then they had to recall the scene verbally (free prose recall). 24 hours later participants were presented with a questionnaire about the film in which they had to recall varying aspects of the film extract. Like Oh (2003), she used real-life motion, but her stimulus represented contextualised motion events whereas Oh's stimuli were not fully contextualised. Error rates in immediate recall (after watching the short film) indicated significant crosslinguistic differences in line with the semantic dimensions highlighted in French and English; French showed better recall of agent details and path types (i.e., telic and atelic paths), but worse recall of manner types (i.e., default manners, forced or instrumental manner of motion, etc). In the late recognition task (24 hours later), significant differences were also found. English speakers showed worse recall of telic paths, but better recall of fine-grained manners, whilst default manners (e.g., run, walk) were equally recalled by both groups. These findings suggest that English speakers pay closer attention to fine-grained manners than do French speakers. Pourcel (2005: 285) concluded that differences in memory across the two languages 'appear to be in line with the conceptual dimensions highlighted in French and English prototypical linguistic encodings of motion, suggesting the possibility of relativistic effects of habitual language patterns on memory'.

3.3.2. Conflicting evidence

Before reviewing those studies yielding contradictory results, it is necessary to provide a brief summary of the experimental paradigms adopted in order to better understand the findings and conclusions. Most of this research usually combines three tasks: naming, similarity judgments and memory tasks (recall and recognition). In naming tasks, speakers are told to either fully describe or just label with one word what is happening in visual motion video clips (e.g., Oh, 2003; Pourcel, 2005). In similarity judgments, the triad paradigm is preferred. Triads consist of three video clips: one is the target which displays both a Path and a Manner, and the other two video clips are the path- and manner-alternates. That is, one of the video clips shares the same Manner as the target, and the other shares the same Path. The three videos in a triad usually display the same Figure (human or any other entity that moves) and Ground, so as not to bias participants' responses. Other tasks examine participants' memory, either through recall (i.e., memory for details of what they saw) or recognition tasks (i.e., just asks participants if the video clip they are watching is 'new' or 'old').

Gennari et al. (2002) were interested in investigating whether different lexicalisation patterns of motion events in English and Spanish had any effect on speakers' performance in two non-linguistic tasks: recognition memory and similarity judgments. They also investigated Slobin's thinking-for-speaking by asking some participants to verbally describe the motion events but not asking others. The stimuli consisted of 36 triads of videotaped human motion. Overall, no significant difference between English and Spanish speakers was obtained in their memory for Manner of motion. However, they did find a linguistic effect in the similarity task after verbal encoding. Spanish speakers in the verbal description condition were more likely than English speakers to select the clip with same path. Thus, the verbal encoding task had an effect on Spanish speakers' later performance in the similarity task. In contrast, English participants behaved in the same way whether they linguistically described the stimuli before or after the similarity judgments. Finally, when no linguistic encoding was required, performance across languages did not show any preference for one dimension of motion over the other. Their research suggests that linguistic and non-linguistic performances are

dissociable, but language made available in the experimental context may mediate the speaker's performance in other tasks.

Papafragou et al. (2002) conducted a similar study to Gennari et al., using English and Greek (a verb-framed language). Their participants were both children and adults. The tasks included (a) verbal descriptions and recognition memory of static pictures adapted from the frog story, and (b) similarity judgments using triads of static human motion pictures. They found that the two language groups differed in terms of their linguistic descriptions, but their performance in the two non-linguistic tasks was similar. Unlike Gennari et al. (2002), they did not find a facilitating effect of verbal encoding in later non-linguistic tasks. Taken together, however, these two studies are consistent with the Universalist approach to language and cognition: cross-linguistic variability in the expression of motion does not reflect any substantive differences in the ways humans think about motion.

Zlatev & David (2004, 2005) focussed on French and Swedish (a satellite-framed language). They used sets of triads showing a smiling tomato man[12] performing the motion scenes, which varied in terms of Manner (rolling, spinning, sliding and jumping) and Path (e.g., from left to right, from right to left). As in previous studies, participants saw triads and were asked to choose which alternate is most similar to the target. Their results showed an overall preference for Manner across languages. Unlike the research we have just reviewed, which concluded that there was no a preference for either motion dimension over the other, Zlatev & David's results showed a significant preference for the dimension of Manner.

3.3.3. The role of telicity, type of Manner and type of Figure

Pourcel (2004a, 2004b) neither supports nor disproves linguistic relativity for the domain of motion. However, her results are noteworthy as they show a correlation between participants' responses and the nature of the stimuli rather than between responses and linguistic motion typologies.

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[12] Tomato man is a virtual elicitation tool developed at the Max Planck Institute for Psycholinguistics (Nijmegen, NL).

In her research on non-linguistic cognition, Pourcel dealt with English and French speakers. Two separate experiments were carried out with unrelated samples of participants. In Experiment 1, participants were asked to judge 15 triads of silent video clips (a target plus a clip differing in manner and the other differing in path) in terms of similarity. In Experiment 2, participants provided linguistic descriptions of the clips prior to performing the similarity judgement task. Generally, the clips depicted telic and atelic paths as well as different kinds of manner of motion: (a) default or expected, (b) forced (i.e., level of difficulty in performance, such as *skip*, *kick*, *limp*, *zigzag*) and (c) instrumental (i.e., *cycle*, *skate*, *drive*). Irrespective of whether participants were asked to verbally describe the clips before performing the task, her results showed that the stimuli manifested differential salience of the Path and Manner dimensions of motion. Specifically, telic paths triggered path responses whereas atelic paths triggered manner responses. Thus, as she remarked, directionality seems to override the dimension of Manner as a general rule. When directionality is unclear, Manner is given higher salience. Her results also showed that default manner types (i.e., expected manners) were more likely to prompt path choices than forced and instrumentality types of manner, which triggered manner responses instead.

Pourcel (2005) further confirmed previous findings in another task assessing conceptualisation through drawing, in which subjects had to draw five videotaped motion scenes onto a static 2-D format. She found that Manner is more consistently drawn when involving a higher degree of force dynamics, and Path when involving telicity.

Moreover, these findings were further supported and extended by Kopecka & Pourcel (2005), who adopted the same methodology. They found that Path salience seems to be triggered not only by telic paths and default manners of motion, but also by the animacy of the Figure. That is to say, when the Figure in the clip is human or animate, Path is more salient to speakers across langauges than when non-human Figures (such as tomato man) and inanimate objects are used in the video clips.

On the whole, linguistic relativity research starts from the assumption that the main diverging point across languages is the greater attention to Manner by satellite-framed languages than by verb-framed languages —as Slobin has repeatedly claimed

throughout his thinking-for-speaking enterprise. However, conflicting findings have been reported. Research by Pourcel (2004a, 2004b, 2005) and Kopecka & Pourcel (2005) suggests those contradictory results may be due to the intrinsic properties of the stimuli used, more concretely, to the types of Path, types of Manner and types of Figures depicted in the video clips. As Pourcel (2004b: 90) concluded '[m]otion itself is in fact exceedingly complex and cannot afford to be experimented on in so naïve a light. A lot more understanding is yet to be acquired'.

3.5. Summary

Talmy's binary typology has engendered a good deal of research and debate in the literature on motion event descriptions over the last two decades. Slobin's hypotheses of thinking-for-speaking encompasses several lines of research in the attempt to account for the pervasive effects that language use has on mental processes tied to language.

Talmy's typology provides valuable insights into lexicalisation patterns for motion in language, but lexicalisation patterns alone cannot account for how language is used in discourse. It has been shown that those lexicalisation patterns have an impact on narrative or rhetorical style: English speakers seem to devote more narrative attention to the dynamics of movement, in line with the availability of manner verbs, which can be followed by satellites and locative prepositional phrases to describe elaborated trajectories. Spanish speakers, in contrast, seem to be constrained by their language to devote less narrative attention to actions and more attention to static scenes instead. Moreover, in addition to these typological factors, a number of non-linguistic factors, including cognitive and cultural factors have been shown to play a part in the linguistic expression of motion.

Research on translation, reviewed in Section 3.2.3, has shown that differences in lexicalisation patterns pose a great number of problems in terms of the expression of both trajectories and manners of motion to translators.

Research on sign languages and co-speech gestures has also been reviewed. Though sign languages provide richer conceptual information in their descriptions of

motion events than spoken languages, similarities between them exist as well. Both modalities share some basic conceptual elements (Figure, Ground, Path, Manner, etc), which are presented sequentially rather than simultaneously. In addition, in both types of languages, a spatial situation can often be conceptualised in more than one way. Moreover, like verb-framed languages, sign languages seem to be sensitive to boundary-crossings. Relatedly, research on co-speech gestures concludes that gestures, which are used to express the same motion events in different languages, are influenced simultaneously by (a) how conceptual elements are expressed in each language, and by (b) spatial information in the stimulus. In other words, gestures reflect cross-linguistic differences but, irrespective of language, speakers also include in their gestural descriptions other spatial properties of the motion event which are not verbally encoded. In sum, due to the intrinsic iconic nature of signing and gesturing some spatial details tend to be expressed which are normally ignored in the verbal descriptions of motion events.

Taken as a whole, linguistic research inspired by the Talmian typology documents habitual ways of speaking and writing about motion which have served as foundations for investigating (a) how children learn language-specific patterns, (b) the effects of those patterns on language processing, and (c) whether the effects go beyond thinking for the purposes to use language.

Section 3.2.5 has concentrated on child language acquisition research. A number of studies have concluded that children are influenced very early by the typological properties of their languages. Verb-framed-language speaking children are more concerned with setting the scene and asserting changes of location (results) than satellite-framed-language speaking children, who assert trajectories and attend to manners of motion (actions). Irrespective of language, it has also been shown that older children are closer to the adult system than younger children. At an early age, children rarely express Path and Manner together in their descriptions, though English children do so more frequently than verb-framed-language speaking children. With increased age, children are capable of providing more detailed descriptions of motion events in line with the adult system. On the whole, it might be concluded children are trained to think-for-speaking in terms of their mother tongue acquiring some language-specific properties earlier than others.

Section 3.2.6 focused on language processing. It has been argued that language-specific verb semantics seem to bias speakers' interpretations of novel verbs as well as their performance on other linguistic tasks. It has been found that English and Spanish speakers are guided by their semantic systems when inferring the meanings of novel motion verbs from context. In addition, it has also been shown that adults could be trained to think with a path or a manner bias and to interpret novel verbs in agreement with such training. These findings suggest that, in response to linguistic input, adults may show similar flexibility to that seen in children's learning and interpreting the meaning of motion verbs.

In section 3.2.7, the similarities that motion and vision share with regard to the expression of Path and Manner were discussed. Research suggests that (a) the patterns for conceptualising and expressing physical paths carry over into the conceptualisation and expression of visual paths, and (b) satellite-framed languages which possess rich manner-of-motion verb lexicons also have an extensive manner-of-vision verb lexicon. In general, it has been shown that the crosslinguistic differences reported for motion descriptions in narratives apply as well to the expression of visual acts. As a consequence of those linguistic differences, translators face similar problems to those reported for motion when translating visual acts between typologically distinct languages.

Finally, research addressing the linguistic relativity hypothesis was reviewed in section 3.3. This line of research addresses whether differences in the lexicalisation of Path and Manner in verb- and satellite-framed languages has an influence on speakers' conceptualisation of motion. This question has been extensively investigated, yielding mixed results for the influence of language on cognition. On the one hand, several studies suggest that speakers of satellite-framed languages seem to have richer mental imagery of Manner of motion, and that the Manner dimension of motion appears to be more salient in their memory for events than for speakers of verb-framed languages. On the other hand, a number of studies which suggest that language does not influence non-linguistic cognition have been reported. Although both sets of studies use similar methodologies, their results are contradictory. Research by Pourcel (2004a, 2004b, 20005) and Kopecka & Pourcel (2005) shed some light on this conflicting evidence by demonstrating that the stimuli

employed in linguistic relativity research may be responsible for such divergent findings. These scholars show that the intrinsic nature of the stimuli, specifically, the types of Path, Manner and Figures, appear to have a significant effect on the salience of Manner and Math across typologically distinct languages.

CHAPTER 4

CLASSIFICATIONS AND ANALYSES OF MOTION VERBS

4.1. Introduction

4.2. The Syntax-Semantics interface

4.2.1. Introduction

4.2.2. Motion verb classes

4.3. The Functional-Lexematic model

4.3.1. Introduction

4.2.2. Lexical subdomains of motion

4.4. Online verb databases

4.4.1. Introduction

4.4.2. Adesse

4.4.3. FrameNet and Spanish FrameNet

4.4.4. WordNet and MultiWordNet

4.4.5. VerbNet

4.5. The semantics of motion verbs

4.5.1. Introduction

4.5.2. Manner verbs

4.5.3. Path verbs

4.6. Summary

4.1. Introduction

The first aim of this chapter is to briefly review classifications and analyses of motion verbs from different theoretical backgrounds. Although this dissertation is not based on any of these theories or approaches, their insights into motion verbs are of valuable interest to better understand the complex syntactic and semantic nature of motion verbs.

Section 4.2 begins with an overview of the Syntax-Semantics Interface approach to the analysis of motion verbs, which explores how a verb's semantics can determine the syntactic realisation of its arguments. Scholars within this approach seek to both identify the semantic notions which are relevant for syntactic structure (i.e., which semantic properties of verbs are syntactically reflected) and to put forward motion verb classes in English and Spanish in terms of their semantic and syntactic properties. In section 4.3, two classifications of English motion verbs within the Functional-Lexematic model are presented. Though also concerned with the syntactic properties of motion verbs, scholars working within this model adopt a more semantically-oriented approach to the organisation of the motion verb lexicon. Section 4.4 offers a brief overview of some of the existing online databases for English and Spanish verb lexicons. In these databases, various classifications of motion verbs can be found, ranging from more syntactically-oriented to more semantically-oriented classifications.

The second aim of this chapter is to offer a list of fine-grained semantic notions which have proven useful for exploring crosslinguistic differences and similarities in the motion verb lexicon. As we presented in Chapter 2 (Section 2.2.3), Talmy's three-way typology proposed a classification of languages based on the sort of semantic information which their verb roots characteristically encode; thus, he identified three major types of motion verbs: Path-conflating verbs, Manner-conflating verbs, and Figure-conflating verbs. However, motion verbs might be further analysed in terms of more specific manner details (e.g., rate or speed of motion, means of conveyance or vehicle, etc) and path details (e.g., horizontal axis, vertical axis, motion away from/towards, etc). Section 4.5 presents the semantics of motion in a more fine-grained fashion than Talmy's general components. In addition, crosslinguistic research on manner and path verbs is briefly reviewed; this research

suggests that verb-framed and satellite-framed languages possess a similar number of path verbs, whereas they significantly differ in the number of manner verbs as well as in the sort of fine-grained manner information that they encode.

4.2. The Syntax-Semantics interface

4.2.1. Introduction

Many theories have been built on the assumption that the syntactic realisation of arguments is largely predictable from the meanings of verbs. The fact that verbs with similar meanings show characteristic argument realisation patterns suggests that these patterns can be attributed to the semantic properties of each class. The main goal of theories concerned with the close relation between syntax and semantics is to identify the relevant components of meaning as well as to explicate their connection to the range of argument realisation options (Levin & Rappaport Hovav, 2005: 3). In the present work, these theories or approaches are grouped under the rubric/label *The Syntax-Semantics Interface*.

Motion verbs are a problematic verb class for research on the relation between syntax and semantics since they do not seem to behave syntactically as a coherent semantic class. Across languages, it is observed that syntactic subjects of some motion verbs share some properties with the direct objects of transitive verbs (i.e., they act as Patients or Themes), whereas subjects of other motion verbs act as Agents.

Perlmutter (1978) formulated *The Unaccusative Hypothesis*, by which two types of intransitive verbs associated with two different syntactic configurations were proposed: *unacussative* and *unergative* verbs. The former are intransitive verbs whose syntactic subjects are not semantic Agents; whereas the latter are intransitive verbs whose syntactic subjects act as Agents. Accordingly, intransitive motion verbs can be further divided into unaccusative and unergative verbs.

Levin & Rappaport Hovav (1992: 252) suggested that motion verbs would be better characterised in terms of which components of meaning are lexicalised in the verb itself, rather than in terms of the thematic roles of the verb's arguments —as the

Unaccusative Hypothesis claims. In other words, they argued for a closer look at what components of verb meaning are relevant for the unaccusative-unergative distinction. Overall, these authors concluded that the meaning components of *direction* (Talmy's Path), *manner* (Talmy's Manner) and *direct external cause* (Talmy's Cause) have proven to be useful for the lexical semantic representation of motion verbs, as they seem to account for the different syntactic realisations of motion verbs.

4.2.2. Motion verb classes

Among the different classifications of motion verbs from the point of view of the Unaccusative Hypothesis and/or the Syntax-Semantics Interface, we are especially interested in the contributions of Levin & Rappaport-Hovav (1992) and Levin (1993), for English motion verbs, and Cifuentes-Honrubia (1999), De Miguel (1999) and Morimoto (2001) for Spanish motion verbs.

Levin & Rappaport-Hovav (1992: 252-253) proposed three main groups of intransitive motion verbs:

a. Arrive class: *arrive*, *come*, *go*, *depart*, *fall*, *return*, etc. These verbs are unaccusative and express inherent direction, as their meaning includes a specified direction of motion.

b. Roll class: *roll*, *slide*, *move*, *swing*, *spin*, *rotate*, etc. These are unaccusative verbs encoding Manner of motion as well as direct external cause, that is, the action denoted by the verb is directly caused by some external agent or force. As pointed out by the authors, one interesting property of manner verbs with direct external cause is that they allow transitive (i.e., causative, agentive) and intransitive uses. For example, *Andrew rolled Bill down the hill / Bill rolled down the hill*. This alternation seems to be found in many languages (Hale & Keyser, 1987, 1992).

c. Run class: *run*, *walk*, *gallop*, *jump*, *hop*, *skip*, *swim*, etc. These verbs express Manner of motion but lack of direct external cause (i.e., the action denoted happens

spontaneously). This group displays unergative behaviour; the syntactic subjects have direct control over their actions.

Beth Levin, in her 1993 book *English Verb Classes and Alternations: A preliminary investigation*, dealt with transitive motion as well. Her study was also driven by the hypothesis that a verb's meaning influences its syntactic behaviour. She showed how identifying verbs with similar syntactic alternations provides an effective way for distinguishing semantically coherent verb classes. With regard to transitive and intransitive motion verbs, Levin (1993: 263-270) proposed the following nine verb classes:

a. Inherently directed motion*: advance, arrive, ascend, come, depart, descend, enter, escape, exit, fall, flee, go, leave, plunge, recede, return, rise, tumble.* The meanings of these verb include a specification of the direction of motion (i.e., Path), even in the absence of a directional complement. According to Levin, none of these verbs specifies the Manner of motion. However, the members of this class do not behave uniformly in all respects. Verbs differ as to how they can express the goal, source, or trajectory of motion; depending on the verb, these may be expressed in a prepositional phrase, as a direct object, or both ways as shown in (1).

(1)   a. The convict escaped from the police.

        b. The convict escaped the police.

b. Leave verbs: *abandon, desert, leave,* etc. These verbs do not specify Manner of motion; they just indicate that motion away from a location has taken place. The direct object of these verbs is understood to be the location that has been left. The location cannot be expressed in a prepositional phrase.

(2)   We abandoned the area.

c. Roll verbs*: bounce, drift, drop, float, glide, move, roll, slide, swing,* etc, plus verbs describing motion around an axis: *coil, revolve, rotate, spin, turn, twirl, twist, whirl, wind,* etc. This verb class specifies manners of motion characteristic of inanimate

entities, that is, the Figure does not necessarily control its motion. In the absence of a prepositional phrase, none of these verbs indicates the Path of motion. Levin noted that many of the roll verbs that describe motion around an axis take a rather restricted range of prepositions heading the prepositional phrase that describes the path of motion, as in (3). Most verbs in this class show the Causative/inchoative alternation only if the motion is externally controllable as in (4).

(3)   a. The ball rolled down the hill/over the hill/into the gutter.

(4)   a. Bill rolled the ball down the hill.

        b. The ball rolled down the hill.

d. Run verbs: *amble, backpack, bolt, bounce, bound, bowl, canter, cavort, charge, climb, crawl, dart, dash, float, fly, gallop, goosestep, hike, hop, jump, march, mosey, promenade, race, run, shuffle, sleepwalk, somersault, stroll swim, tiptoe, vault, waddle, walk*, etc. Most of these verbs describe manners in which animate entities can move, although some of them may also be used to describe the movement of inanimate entities. Further, no specific direction of motion is implied unless they occur with an explicit directional phrase. Levin (1993: 267) pointed out that Run verbs would probably need to be further subdivided as their syntactic behaviour is not uniform. For example, as can be seen in (5), some Run verbs are found in resultative constructions whereas others are not.

(5)   a. Tom ran the soles off his shoes.

        b. ?We walked ourselves into a state of exhaustion.

e. Verbs that are Vehicle names[1]: *balloon, bicycle, bike, boat, bobsled, bus, cab, canoe, caravan, chariot, coach, cycle, dogsled, ferry, gondola, helicopter, jeep, jet, motorbike, parachute, raft, rocket, skate, ski, tram, yacht*, etc. These verbs mean roughly 'go using the vehicle named by the noun'. In principle, it should be possible

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[1] For a detailed discussion see Clark & Clark (1979). In their paper titled *When nouns surface as verbs*, they explore different groups of English nouns which have come to be used as verbs over the course of time.

for any vehicle name to be used as a verb of this type. Finally, this verb class does not imply direction of motion unless there is an explicit directional phrase present.

(6)   They skated along the canal/across the lake.

f. Verbs that are not vehicle names: *cruise*, *drive*, *fly*, *oar*, *paddle*, *pedal*, *ride*, *row*, *sail*, *tack*, etc. This group of verbs denotes motion using a vehicle but the vehicle name does not coincide with the verb. For instance, *fly* implies an aircraft, *pedal* a bike; *cruise*, *row*, *sail* and *tack* a ship or boat, etc. Similarly to the previous verb class, no specific direction of motion is implied unless an explicit directional phrase is present.

(7)   They rowed along the canal/across the lake.

g. Waltz verbs: *boogie*, *bop*, *cancan*, *clog*, *conga*, *dance*, *foxtrot*, *tango*, *tapdance*, *waltz,* etc. These verbs mean roughly 'perform the dance'. No specific direction of motion is implied unless there is an explicit directional phrase present. Like vehicle nouns, it appears that any dance noun can be used as motion verb.

(8)   They waltzed across/into/through the room.

h. Accompany verbs: *accompany*, *conduct*, *escort*, *guide*, *lead*, *shepherd*, etc. These verbs relate to one person taking another from one place to another. According to Levin, these verbs are differentiated semantically by the nature of the relationship between the two participants.

(9)   Jackie accompanied Rose to the store.

i. Chase verbs: *chase*, *follow*, *pursue*, *shadow*, *tail*, *track*, *trail*, etc. These verbs are typically transitive, with the chaser as subject and the person being chased as object. Some of them allow an intransitive use, with the chaser as subject and a prepositional phrase headed by *after* expressing what is being chased.

(10)   a. Jackie chased the thief.

        b. Jackie chased after the thief.

Cifuentes-Honrubia (1999)[2] and Morimoto (2001) split Spanish intransitive motion verbs into two main groups: *displacement verbs* and *manner verbs*. These authors observed some restrictions on the use of trajectories by these two groups of verbs; to be precise, displacement verbs can combine with telic trajectories (i.e., implying a resultative change of location or endpoint), whereas manner verbs can only combine with atelic trajectories which do not imply an endpoint (Aske, 1989; Slobin & Hoiting, 1994).

Unlike Levin & Rappaport-Hovav (1992) and Levin (1993), Cifuentes-Honrubia and Morimoto did not separate manner verbs with external cause (i.e., *Roll class*) from those without external cause (i.e., *Run class*). However, Morimoto (2001: 47) further subdivided Spanish manner verbs into two groups:

a. *Caminar* 'walk' class, which includes verbs such as *correr* 'run', *gatear* 'crawl', *nadar* 'swim' and *volar* 'fly'. This group refers to ways of moving which imply, but do not specify, a change of location. To put it differently, the Figure (in Talmy's terminology) necessarily goes somewhere when performing these activities. Thus, this group of verbs denotes translational motion[3].

b. *Tambalearse* 'totter, stagger' class, which includes verbs such as *agitarse* 'sway onself', *balancearse* 'swing oneself' and *temblar* 'shiver, tremble'. This group refers to motion which is internal to the Figure; in other words, change of location is absent. This group of verbs denotes self-contained motion.

With respect to displacement verbs or verbs of inherent direction (Levin & Rappaport Hovav's *Arrive* verbs), De Miguel (1999: 74-78) pointed out that Spanish

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[2] Cifuentes-Honrubia (1999) is not interested in the division of intransitive verbs into unaccusative and unergative verbs; he argues that all Spanish intransitive motion verbs are agentive, and thus, such a division is irrelevant. However, in much the same way as in the research on the Syntax-Semantics Interface, Cifuentes-Honrubia is concerned with identifying all the relevant semantic distinctions among motion verbs which are reflected in syntax.

[3] See Chapter 2, Section 2.2.2 for a definition of translational and self-contained motion.

verbs of inherent direction can be further subdivided into two groups, since these verbs display syntactic differences[4]:

a. Inherently achieved location verbs: *caer* 'fall', *bajar* 'go down', *subir* 'ascend', *entrar* 'enter', *salir* 'exit', *llegar* 'arrive', etc. This group of verbs denotes inherent direction with an endpoint; the Figure reaches its final destination or goal.

b. Inherent path verbs: *dirigirse* 'go towards', *acercarse, arrimarse* 'go closer to', *irse* 'go', *moverse* 'move oneself', *regresar* 'come back', etc. This group denotes inherent direction without an endpoint; thus, though the goal or final destination is usually expressed by complements (e.g., *irse a casa* 'Lit. go home'), it has not been reached yet.

Much along the same lines as De Miguel, Cifuentes-Honrubia (1999) and Morimoto (2001: 82) stated that inherent direction verbs – displacement verbs in their terminology – might also be categorised in terms of the sorts of trajectories that the verbs describe:

a. Trajectory *HACIA* 'to, towards': *subir* 'ascend', *bajar*, *descender* 'descend', *aproximarse* 'go closer to', etc.

b. Trajectory *DE* and/or *A*:
  - without boundary crossing: *venir* 'come', *llegar* 'arrive', *partir* 'leave', etc.
  - with boundary crossing: *entrar* 'enter', *penetrar* 'penetrate', *salir* 'exit', etc.

c. Trajectory of traversal: *pasar* 'pass, go through', *cruzar* 'cross', etc.

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[4] According to De Miguel, verbs of inherently achieved location (i.e., verbs denoting the endpoint or conclusion of motion) are unaccusative verbs whereas verbs of inherent path are unergative. The former can be found in resultative constructions: *Una vez caído el Muro de Berlín, la izquierda se ha acabado* (Lit. Once fallen the Wall of Berlin, the left has finished) whereas the latter cannot: ?*Regresado* Miguel, nos fuimos al restaurante (Lit. Come back [past participle] Miguel, we went to the restaurant).

To sum up, the heterogeneous syntactic nature of the motion verb lexicon has posed problems to scholars concerned with the close relation between syntax and semantics, leading them to propose different motion verb classes. Even though some of the classifications are much more granular than others, all scholars agree that each motion verb class is defined by both syntactic and semantic properties.

4.3. The Functional-Lexematic model

4.3.1. Introduction

The Functional-Lexematic Model was proposed by Leocadio Martín Mingorance (1998), drawing heavily on Simon Dik's Functional Grammar (1980, 1997). The Functional-Lexematic model integrates semantic and syntactic aspects of verb lexemes within a framework in which both paradigmatic relations (i.e., relations to other verbs) and syntagmatic relations (i.e., relations to other elements in the sentence) find their place. According to this model, the interaction of the paradigmatic and the syntagmatic axes creates a third axis called *the cognitive*, which consists of a hierarchy of conceptual categories which are linguistically motivated (Rodríguez-García, 1997: 21).

Faber & Mairal-Usón (1999) and Rodríguez-García (1997) followed the Functional-Lexematic model. Their main objective was to offer an account of the English verbal lexicon which shows not only the semantics of verbs in a hierarchical fashion (i.e., domains and subdomains), but also the relations between verb meanings and syntactic argument realisations, on the one hand, and their close connection with conceptualisation in the human mind on the other. These authors claim that argument structure is motivated semantically (Faber & Mairal-Usón, 1999: 143), and thus do not take syntax as starting point for the classification of the lexicon—in contrast with approaches working on the syntax-semantics interface. In the Functional-Lexematic model, the organisation of the verb lexicon is primarily guided by semantics, though it also reflects syntactic properties. Furthermore, it is argued that such organisation of the verb lexicon is 'consonant with what is known of the organisation of the mental

lexicon' (Faber & Mairal-Usón, 1999: viii). On the whole, Faber & Mairal-Usón and Rodríguez-García suggest that the hierarchical organisation of the verb lexicon they propose may well correspond to our mental lexicon.

4.3.2. Lexical subdomains of motion

Faber & Mairal-Usón (1999: 55) considered a given lexical domain to include a group of lexical units that share the same meaning (conceptual structure) and also show a similar syntactical behaviour. They divided the verb lexicon into thirteen major *lexical domains*[5]: Existence, Movement, Position, Contact, Change, Perception, Cognition, Feeling, Speech, Sound, Light, Possession, and Action. For the purposes of the present work, we are mainly concerned with their proposed hierarchical organisation of the motion verb lexicon. They partitioned the lexical domain of Movement into 4 major categories which were further subdivided as follows:

1. General Movement (move, go, come)

    a. To move in a particular way: *speed, race, lumber, glide, leap*

    b. To move off/away: *separate*, *leave*

    c. To move towards a place: *go, travel, advance*

    d. To move across: *cross*

    e. To move over/through: *pass, clear*

    f. To move about in no particular direction: *wander, drift*

    g. To move in relation to somebody/something: *accompany*, *herd*, *take*, *bring*, *follow*

    h. To move back and forth between places: *sway, swing*

    i. To move into a place: *enter, burgle*

    j. To move out of a place: *emerge, exit*

    k. To move to a different place/position: *change, switch, transfer*

    l. To not move anymore, after having moved: *stop*, *halt*

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[5] For a detailed list of the lexical domains and subdomains, see Appendix 1 in Faber & Mairal-Usón (1999).

2. Liquid

    a. To move as liquid in a particular way: *flow, ripple*

    b. To move in/downward below the surface of a liquid: *sink, plunge*

    c. To move over liquid: *sail, cruise*

    d. To move upwards to the surface of a liquid: *surface*

3. Atmosphere

    a. To move as air: *blow*

    b. To move through the air: *fly, flutter, float*

    c. To move upwards in the air: *rise, soar*

    d. To move downwards in the air: *swoop, dive*

4. Land

    a. To move in a particular way: *skulk, creep, scamper*

    b. To cause somebody/something to move downwards to the ground: *trip, tumble*

    c. To move one's body: *gesture, exercise*

Faber & Mairal-Usón's semantic classification of motions verbs mainly included intransitive motion verbs in which the Figure moves or goes somewhere by itself/himself/herself. In addition, they also take into account of some transitive motion verbs in which the Figure is moved or displaced by an Agent (e.g., *change, switch, transfer, pull, drag, push, shove*, meaning to cause somebody/something to move to a different place/position). In other words, both self-agentive motion verbs and agentive motion verbs were dealt with within their work.

Rodríguez-García (1997: 75-79) focused only on English transitive motion verbs (i.e., agentive motion), though intransitive uses of these motion verbs were also considered in his analysis. He distinguished three subdomains for Motion: (1) Positional (Existence and Change), (2) Positional and Directional Motion, and (3) Directional Motion, which were further subdivided. For the purposes of this dissertation, we are mainly concerned with subdomains (2) and (3), subdivided as follows:

2. Positional and Directional Motion[6]

    a. Causing to alter a fixed course or position: *flip, reverse, diverge, deviate*

    b. Emphasis on movement manners:

        b1. causing to move around, in a circular manner: *turn, spin, twirl, revolve, wind*

        b2. causing to move from side to side: *swing, sway, nod, bob*

        b3. causing to move up and down: *bounce, spring, leap, throb*

        b4. causing to move in all directions: *spread, cast, sprinkle, distribute*

        b5. causing to move in a liquid medium: *drip, spray, drain, pour, spill*

    c. Emphasis on the movement degree:

        c1. causing somebody/something to move quickly: *propel, race, rush, gallop*

        c2. causing somebody/something to move slowly: *decelerate, brake*

        c3. causing somebody/something to move suddenly: *dart, dash, shoot,*

        c4. causing somebody/something to move briskly: *shake, throb, flutter*

        c5. causing somebody/something to move slightly: *stir, totter, shudder*

3. Directional Motion

    a. Moving/Taking somebody/something away from (horizontal axis): *separate, leave, flee, remove, withdraw*

    b. Moving somebody/something forwards and towards (horizontal axis)

        b1. by advancing: *advance, approach*

        b2. by gathering things: *gather, join, glue, tie*

        b3. by gathering people: *crowd, meet*

    c. Moving somebody/something upwards to a higher position (vertical axis): *raise, elevate, climb, ascend*

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[6] This lexical subdomain includes motion verbs that can express both positional or locative motion (i.e., no change of location) and directional motion.

d. Moving somebody/something downwards to a lower position (vertical axis): *lower*, *descend*, *plunge*, *sink*

Now that we have listed Faber & Mairal-Usón's and Rodríguez-García's semantic classifications of motion verbs into domains and subdomains, we will briefly comment on which semantic notions seem to be relevant for these organisations of the domain of motion. On the whole, Faber & Mairal-Usón's and Rodríguez-García's analyses of motion verbs took into consideration the semantic notions of Path and Manner of motion. Faber & Mairal-Usón's classification mixed both path and manner verbs within the same domain; particularly, the domain of general movement merges verbs denoting various paths (e.g., *off/away*, *towards*, *across*, *over*, *through*, *into*, *out of*) together with verbs expressing particular manners of motion (e.g., *race*, *lumber*, *glide*). Furthermore, their analysis took into account Grounds, that is, whether the Figure is moving in relation to land, air, or water, and thus, they proposed three distinct domains. On the other hand, Rodríguez-García's analysis of motion verbs separated path verbs from manner verbs. In the domain of Positional and Directional Motion, he included manner verbs denoting two distinct groups of manners: verbs referring to self-contained motion (i.e., with no change of location of the Figure) and verbs denoting translational motion (i.e., the Figure moves to an unspecified location by moving in a certain way). The former, i.e., self-contained motion, included verbs denoting that the Figure moves in a circular manner (b1), from side to side (b2), and up and down (b3). The latter, i.e., translational motion, grouped manner verbs that imply that the Figure displaces, such as those in (c1), (c2) and (c3). Finally, with regard to path verbs, Rodríguez-García classified verbs within the domain of Directional Motion in terms of both the horizontal and vertical axes, and in terms of motion away from – to/towards a place.

4.4. Online verb databases

4.4.1. Introduction

Nowadays, there are some online databases on the syntax and the semantics of verbs embodying a variety of theoretical backgrounds. Most of these databases can be navigated with their own browser and a few of them are freely available for download. In this section, we provide a brief overview of some databases for English and Spanish, in which different classifications of motion verbs can be found, ranging from semantically-oriented classifications, such as those in ADESSE, FrameNet and WordNet, to more syntactically-oriented classifications, such as those in VerbNet.

4.4.2. Adesse[7]

The Project Adesse (*Alternancias de Diátesis y Esquemas Sintáctico- Semánticos del Español*) is being developed at the University of Vigo, Spain. The goal of the project is to achieve a database with syntactic and semantic information about verbs and clauses from a corpus of Spanish (160,000 clauses from a corpus of 1.5 million words). The main final outcome of ADESSE is a corpus-based syntactic-semantic database including, for each verb and each clausal construction in the corpus, a pattern of arguments characterised in terms of syntactic function, phrase type, and semantic role. Adesse proposes verb classes which are the result of a purely semantic classification independent from syntactic differences among verbs. However, syntactic structures have been considered *a posteriori*.

On the whole, general verb classes have been identified (e.g., FEELING, PERCEPTION, COGNITION, SPACE, etc), which have been further divided into 51 subclasses, associated with more concrete conceptual frames, each of which providing a specific set of semantic roles for labelling verb arguments. Thus, the most basic and useful category in ADESSE is *subclass*. For example, the verb *venir*[8] (meaning 'to move toward the speaker') belongs to the general semantic class of

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SPACE and to the subclass of Displacement. When we navigate with the browser, we learn that *venir* 'come' has been found in 1169 clauses with 53 different syntactic-semantic realisations. Furthermore, a rich picture of the verb's arguments, their syntactic function and the semantic roles[9] that they play in each one of those 53 syntactic-semantic realisations emerges on the screen.

Within the domain SPACE, over 400 Spanish verbs were classified into five sub-classes (Martínez-Fuentes, 2004):

a. Displacement: 228 verbs, such as *ir* 'go', *andar* 'walk'

b. Location: 216 verbs, such as *poner* 'put'

c. Posture: 47 verbs, such as *sentar* 'sit', *agachar* 'crouch'

d. Orientation: 11 verbs, such as *señalar* 'point', *apuntar* 'aim'

e. Manner of motion: 40 verbs, such as *chapotear* 'to splash', *aletear* 'flutter', *mecer* 'rock, swing'

More recently, a sixth sub-class has been added, namely *Unión* 'Joint', which includes verbs such as *juntar* 'join, put together, assemble'.

In Adesse, Displacement verbs (subclass a) include two groups of verbs: (1) those expressing the manner of motion and (2) those of inherent direction (Martínez-Fuentes, 2004: 889). However, in most analyses of motion verbs, these two groups of verbs are usually differentiated and grouped into two separate verb classes (e.g., Cifuentes-Honrubia, 1999; Morimoto, 2001)

4.4.3. FrameNet and Spanish FrameNet[10]

The FrameNet project is creating an online lexical resource for English, based on Fillmore's Frame Semantics[11] and supported by corpus evidence (British National

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[9] The specific set of semantic roles for labelling verb arguments are: *Móvil* 'Figure', *Origen* 'Source', *Dirección* 'Direction', *Trayecto* 'Trajectory', *Beneficiario* 'Beneficiary', *Finalidad* 'Aim', *Medio de Transporte* 'Means of transport', *Manera* 'Manner', and *Lugar* 'Location'.

[10] http://framenet.icsi.berkeley.edu; http://gemini.uab.es:9080/SFNsite/

[11] For a brief overview of Frame Semantics see Chapter 2 (Section 2.1.3) and Evans & Green (2006: Section 7.2).

Corpus, 100 million words). The aim is to document the range of semantic and syntactic combinatory possibilities (valences) of each word in each of its senses. The major product of this work, the FrameNet lexical database, currently contains more than 10,000 lexical units, more than 6,100 of which are fully annotated in more than 825 semantic frames and exemplified in more than 135,000 annotated sentences.

According to Baker & Ruppenhofer (2002: 29), in FrameNet, verbs and other lexical units are grouped according to conceptual structures or frames instead of in terms of their syntactic behaviour. The main implication is that verbs grouped together in FrameNet might be semantically similar but have different argument realisations, and verbs which share the same syntactic behaviour might be represented in two different semantic frames. The same applies to Spanish verbs in Adesse. Thus, both FrameNet and Adesse adopted a semantically-oriented approach to the classification of verbs. However, as García-Miguel, Costas & Martínez-Fuentes (2005) remark, a major difference exists between the two databases; semantic classes in Adesse are much more general than frames in FrameNet.

In FrameNet, a lexical unit is a pairing of a word with a meaning. Typically, each sense of a polysemous word belongs to a different semantic frame, a script-like conceptual structure that describes a particular type of situation, object, or event and the participants and props involved in it. For instance, the verbs *drift*, *float*, *fly*, *glide*, and *go* evoke the Motion frame. This frame describes the situation in which an entity (Theme) starts out in one place (Source) and ends up in some other place (Goal), having covered some space between the two (Path). Theme, Source, Goal and Path are the frame elements.

FrameNet can be considered as dictionary and thesaurus. The lexical units come with definitions (e.g., *walk* is defined as an excursion or act of travelling on foot) and with a set of examples which are meant to illustrate the combinatorial possibilities of the lexical units. As each lexical unit is linked to a semantic frame, and thus to the other words that evoke that particular frame, this makes the FrameNet similar to a thesaurus. By way of illustration, the verb *walk* belongs to the Self-motion frame, which also contains verbs such as *amble*, *back*, *bound*, *dash*, *hop*, *march*, *meander*, *promenade*, *scurry*, *sneak*, *tiptoe*, *trip*, *wade*, *waltz*, etc. Furthermore, FrameNet provides a network of relations between frames (e.g.,

Inheritance relation, Subframe relation, Using relation, etc). For example, Self-motion inherits from the Motion frame, which in turn does not inherit from a parent frame. The Motion frame is the parent frame of the following frames:

- The Mass-motion frame, e.g., *crowd*, *flock*, *troop*

- The Motion-directional frame, e.g., *descend*, *drop*, *fall*, *plummet*, *plunge*, *rise*

- The Self-motion frame, e.g., *amble*, *back*, *bound*, *dash*, *hop*

- The Traversing frame, e.g., *circle*, *crisscross*, *cross*, *pass*, *traverse*

- The Motion-noise frame, e.g., *bang*, *buzz*, *crash*, *hiss*, *roar*, *rumble*, *splash*, *thunder*

- The Fluidic-motion frame, e.g., *bubble*, *cascade*, *course*, *drip*, *leak*, *splash*

Moreover, the Motion frame is used (i.e., some of its frame elements are used), among many others, by the following frames:

- The Body-movement frame, e.g., *bend*, *blink*, *bob*, *cross*, *shrug*, *wink*

- The Bringing frame, e.g., *bring*, *carry*, *cart*, *convey*, *drive*, *fly*, *take*, *transport*

- The Change-direction frame, e.g., *swing*, *turn*, *veer*

- The Departing frame, e.g., *abandon*, *depart*, *desert*, *disappear*, *escape*, *exit*, *leave*, *vanish*, *withdraw*

- The Operated-vehicle frame, e.g., *balloon*, *bicycle*, *bike*, *cruise*, *drive*, *fly*, *motor*, *parachute*, *pedal*, *skate*, *taxi*

Active research projects are creating comparable frame-semantic lexicons for other languages. One instance is Spanish FrameNet which is being developed at the Autonomous University of Barcelona (Spain) and the International Computer Science Institute (Berkeley, CA) in cooperation with the FrameNet Project. The starter lexicon is expected to be available to the public in July 2008 and will contain at least 1,000 lexical items (including verbs, nouns, adjectives, adverbs, and prepositions) representative of a wide range of semantic domains. Like FrameNet, Spanish FrameNet database will act both as a dictionary and a thesaurus. Like a dictionary, it will include definitions, tables showing how frame elements are

syntactically expressed in sentences containing each word, and annotated examples from a corpus. Like a thesaurus, Spanish FrameNet will link words to the semantic frames in which they participate, and frames, in turn, to wordlists and to related frames.

4.4.4. WordNet and MultiWordNet[12]

WordNet is a large lexical database of English, developed under the direction of the psychologist George Miller. English nouns, verbs, adjectives and adverbs are grouped into sets of 'cognitive synonyms' called *synsets*, each expressing a distinct lexicalised concept. Thus, synsets are the most important units; they are interlinked by means of semantic and lexical relations, such as troponymy (i.e., Y is a way of X), hyperonymy (i.e., X is a kind/type of Y), synonymy (i.e., X is similar to Y), antonymy (i.e, X is not Y), meronymy (i.e., an X is a part of a Y), etc. Miller & Fellbaum (1991: 216-220) state that troponymy (from Greek *tropos*, i.e., manner or fashion), also called verb hyponymy, is the most common semantic relation among verbs. Many verbs indicate more precisely the manner of doing something, for example, *march, strut, traipse, amble*, and *mosey* are troponyms of *to walk*. To put it differently, they are ways of walking, mutually inclusive or temporally co-extensive with walking; thus, when someone marches or struts, s/he is walking.

To illustrate how WordNet works, let us consider the motion verb *walk*. In our search with the browser, it was found that *walk* as a verb has 10 synsets or distinct meanings, among them 'to use one's feet to advance', 'to accompany or escort', 'traverse or cover by walking', 'make walk', 'walk at a pace', 'take a walk or walk for pleasure'. If we consider the synset 'to use one's feet to advance', a full list of troponyms (e.g., *march, strut, promenade, stride, march, amble, mosey*), hyperonyms (e.g., *travel, move, go, locomote)* and antonyms (e.g., *ride* 'be carried or travel on or in a vehicle') are displayed on the screen.

Generally speaking, WordNet acts as a dictionary and a thesaurus in much the same way as FrameNet. However, a major difference between the two lexical databases is that FrameNet is founded on corpus attestations, and thus includes examples taken from the BNC corpus. Also, FrameNet offers syntactic information.

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[12] http://wordnet.princeton.edu/; http://multiwordnet.itc.it/english/home.php

FrameNet, however, does not take into consideration semantic relations (e.g., synonymy, antonymy, hyponymy, etc) between words within frames in the way WordNet does.

MultiWordNet is a lexical database for Italian which has been modelled after English WordNet. The Italian synsets are created in correspondence with the WordNet synsets, whenever possible, and the semantic relations are imported from the corresponding English synsets. The information contained in the database can be navigated through the MultiWordNet browser, which facilitates the comparison of the lexicons of English and Italian. Furthermore, the MultiWordNet browser allows for access to the Spanish, Hebrew and Romanian WordNets. MultiWordNet stresses the usefulness of an alignment between WordNets of different languages, as it is able to represent true lexical idiosyncrasies between languages, such as lexical gaps. For instance, English *amble*, meaning 'to walk leisurely' has as Spanish counterpart *deambular* or *pasear*, whereas Italian, Hebrew and Romanian do not seem to have a semantically equivalent verb.

4.4.5. VerbNet[13]

VerbNet is an online database for English verbs developed at the University of Colorado by Martha Palmer. VerbNet extends Levin's (1993) classes through refinement and addition of further subclasses to achieve syntactic and semantic coherence among members of the same verb class. Each verb class contains a set of syntactic descriptions depicting the possible surface realisations of the argument structure. Moreover, for each verb, VerbNet adds links to other lexical resources, among them, WordNet and FrameNet. By way of illustration, the verb *walk* belongs to the Run verb class (as in Levin's classification) which includes 127 verbs (e.g., *amble*, *hop*, *rush*, *stride*). This group of verbs is characterised by the semantic roles of an Agent, a Theme and a Location, and by a number of syntactic descriptions.

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[13] http://verbs.colorado.edu/~mpalmer/projects/verbnet.html

4.5. The semantics of motion verbs

4.5.1. Introduction

In Chapter 3, we reviewed a vast amount of literature on motion events, especially from a crosslinguistic perspective. In order to compare the encoding of motion events across languages (e.g., in written and oral narratives), scholars found it necessary to identify a number of conceptual categories as well as a range of linguistic devices available in various languages. Thus, Slobin and his collaborators created a coding system, which has not been published yet, though an outline can be found in Slobin (2005). He offered a list of the semantic categories and linguistic elements which were included in their coding system.

Here, our main concern is the semantic categories which were put forward. Slobin and his collaborators took into consideration Talmy's general semantic components but further broke them into more fine-grained categories:

- Figure: the moving object.
    - o Individual or group
    - o Type: human, animal, bird, etc
    - o Posture: change of posture at beginning or end of path

- Ground: entity or entities that the Figure is moving in relation to.
    - o Source: initial location
    - o Goal: final location
    - o Milestone: location passed along path
    - o Linear substrate: bridge, etc
    - o Medium, terrain: field, river, etc
    - o Non-solid environment: air, fog, storm, darkness, etc

- Path: the trajectory of the Figure.
    - o Direction of movement: forward, up, north, etc
    - o Deixis: direction with regard to viewpoint of narrator
    - o Contour: curved path, zigzag, etc

- Manner: the way in which motion is performed.

  o Motor pattern required to execute movement

  o Force dynamics

  o Rate

  o Means of conveyance: by animal, car, airplane, etc

- Cause: what originates the motion itself.

By way of illustration, the motion event depicted in the sentence *Dori climbed out of the tree* may be analysed as consisting of a human-like creature directed in a descending path, in a grasping manner, from a source defined as the tree to an unspecified goal.

These categories are useful for exploring the semantics of motion verbs in addition to motion events. However, as we will see in the next two sections, crosslinguistic research on motion events has proposed even more specific manner and path categories in order to capture semantic differences among verbs across languages. Section 4.5.2 concentrates on manner verbs and provides a summary list of fine-grained manner distinctions proposed by a number of scholars. Finally, in Section 4.5.3, we offer a review of some studies which direct their research attention to the semantics of path verbs, which have been often ignored in crosslinguistic research on motion events. As with the manner component, fine-grained path categories are proposed as well.

4.5.2. Manner verbs

Within the voluminous literature on motion events, there is an interesting crosslinguistic study exploring manner of motion verbs as well as verbs from other domains. Snell-Hornby (1983) compared and contrasted the semantics of English and German motion verbs by grouping them into subclasses and then focusing on subtle differences of meaning among verbs within each subclass. She summarises her research as follows:

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[L]exemes are examined in their semantic function as against that of their neighbours in the same language, and at the same time as they compare with semantically similar lexemes in the other language. (Snell-Hornby, 1983: 17)

In her analysis of 483 German and 617 English verbs, she proposed 4 major fields: Human Behaviour, Movement and Position, Sounds, and Facial Expression and Light. Each field comprises a range of structured subfields. Thus, the major field of Movement and Position was subdivided into 3 subfields: (1) Walking and Running, (2) Movement in air and water, and (3) Static and Negative; these subfields, in turn, were further subdivided (Snell-Hornby, 1983: 80, 133, 142). Here, we provide the divisions of (1) and (2), with examples of English verbs, as these fall within the purview of this dissertation.

1. Walking and Running

      a. Leisurely, aimless: *wander, ramble, roam, rove, stray, hike, meander, stroll*

      b. Laborious: *trudge, plod, tramp, stump*

      c. Clumsily, unsteadily: *waddle, toddle, totter, dodder, stagger*

      d. Nimble, with energy: *trot, trip, skip, frisk, caper, frolic, romp, hop, jump*

2. Air and Water

      a. Speed: *race, rush, dash, whiz, zoom, sweep, hurtle*

      b. Flying, smoothness: *soar, hover, float, drift, waft*

      c. Water: *ripple, splash, flow, trickle, drip*

      d. Diving, falling: *tumble, topple, pitch, plummet, plunge, dive*

      e. Throwing: *hurl, fling, toss, dump*

      f. Turning: *twiddle, twirl, spin, whirl, swirl*

      g. To and Fro: *swing, wave, sway, shake, shiver, tremble*

      h. Sudden movement: *jump, bounce, jolt*

To illustrate her crosslinguistic semantic comparison of English and German motion verbs, we summarise a small part of her analysis of the field Walking and Running and subfield (a) *Leisurely, aimless motion* (Snell-Hornby, 1983: 133-134). In this group of motion verbs, English *amble*, *saunter* and *stroll* along with German

bummeln, *schlendern* and *spazieren* focus on the leisurely attitude of the agent. *Amble* focuses on easy pace and even movement; *saunter* emphasizes the agent's self-confident attitude, and *stroll* emphasizes unhurried, but not necessarily even movements as it includes starts and stops. German *schlendern* can render all three English verbs; *bummeln* focuses on slow tempo, pleasure and relaxed mood, with the likehood of pauses, thus resembling *stroll*. Within this group, English *wander* and German *wandern* are also included; these verbs indicate movement over a larger area without a destination or route. However, German *wandern* also denotes walking lengthy distances on foot as a healthy form of recreation, which is covered by English *ramble*, which focuses on the pleasurable aspect, and *hike,* focussing on walking as healthy but strenuous exercise.

Snell-Hornby compared manner verbs from two languages which belong to the satellite-framed group. Her analysis dwells on subtleties of meaning which are useful for understanding and discriminating the meaning of motion verbs within and between the two languages. However, Snell-Hornby does not provide any list of manner details which might serve as a basis for the comparison of motion verbs from other languages.

As we saw in Chapter 3, Slobin (e.g., 2004, 2006) has observed that the availability of an open verb slot in satellite-framed languages has led these languages to develop a richer and more expressive manner verb lexicon than verb-framed languages. In order to investigate this claim, the general tendency in crosslinguistic research on motion events has been to use data from novels, oral elicited narratives, and translations. Though a definitive count has not been undertaken, Slobin (2006a: 71) has recently estimated around several hundred manner verbs for languages within the satellite-framed group and less than one hundred for verb-framed languages. Accordingly, English is expected to have several hundred manner verbs whereas Spanish less than one hundred.

Among the studies that compare and contrast manner verbs from both satellite- and verb-framed languages, we offer a brief review of Slobin (2005) on English, Serbo-Croatian, French and Turkish, Özçalişkan (2004) on English and Turkish, and Cifuentes-Férez (2006) on English and Spanish. Slobin (2005) compared translations of a chapter of Tolkien's *The Hobbit* into some verb- and

satellite-framed languages. He found that the rich manner verb diversity of the English text is matched by Serbo-Croatian (satellite-framed language), surpassed by Russian (satellite-framed language), but reduced to a few manner verbs in French and Turkish (verb-framed languages). Özçalişkan (2004: 81) compared manner verbs taken from English and Turkish novels. She provided a summary table illustrating the distribution of some English and Turkish verbs using the following specific manner categories: rapid motion, forced motion, leisurely motion, smooth motion, obstructed motion, furtive motion, manners of walking, manners of running, and manners of jumping. She concluded that, for each manner category, English novelists used a greater variety of manner verbs than Turkish ones. Much in the same vein, Cifuentes-Férez (2006) compared manner verbs taken from an English novel and its Spanish translation. She concluded that English carves up manner in a more fine-grained fashion than Spanish; for example, she pointed out that Spanish does not seem to have as many verbs encoding information about the Figure's physical and psychological state as English has, e.g., whether the Figure is tired as in *traipse*, relaxed as in *amble* or *stroll* (Spanish 'pasear'), injured as in *limp* (Spanish 'cojear') or *hobble*.

Within the satellite-framed group of languages, Jovanovic & Martinovic-Zic (2004) compared English and Serbo-Croatian[14] manner verbs elicited using the frog stories, Kopecka (2006) examined English and Polish manner verbs, and Dimitrova-Vulchanova & Martínez (ms.) focused on English, Bulgarian and Norwegian manner verbs.

Jovanovic & Martinovic-Zic (2004) found that Serbo-Croatian speakers produced a greater variety of manner verbs than English speakers. Instead of analysing manner details (e.g., rate, state of the Figure, etc) encoded in verbs, they centred their analysis on the role that aspect (i.e., temporal contouring), which is incorporated via morphology to the verb root, plays in the meaning of manner verbs. For example, a set of manner verbs whose basic meaning is that of jumping or hopping is full of aspectual nuances as (11) illustrates. Thus, the greater variety of manner verbs in Serbo-Croatian than in English seemed to be due to aspectual notions expressed in manner verbs. On the whole, they concluded that aspect has

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[14] See Filipović (2007) for a detailed account on the lexicalization of motion in Serbo-Croatian.

implications for manner of movement in Serbo-Croatian whereas its role is not prominent in English.

(11)   Serbo-Croatian set of manner verbs (taken from Jovanovic & Martinovic-Zic (2004: 222)

a. skakati 'jump'

b. poskoĉiti 'hop, do a quick, short jump upward'

c. skakutati 'hop energically and repeatedly'

d. pre-skakati 'jump over'

Kopecka (2006) explored the expression of motion in English and Polish. Unlike the research we have just reviewed, she used monolingual and bilingual dictionaries as the source for her data. Overall, she found three main diverging points in the linguistic expression of motion events between English and Polish. Firstly, her data suggested that English makes more fine-grained semantic distinctions in verbs than does Polish; for example, English has three different manner verbs lexicalising contact[15] (*glide*, *slide*, *slither*) whereas Polish has only one (*ślizgać sie*). Furthermore, she observed that English conflates more manner details in the verb than Polish; English verbs like *amble* are translated into Polish by periphrastic expressions such as *iść spokojnym krokiem* 'to walk with a slow step'. Secondly, she noticed that English seems to have conventionalised the use of some nouns as motion verbs, more precisely, verbs lexicalising vehicles such as *bicycle* and *skate*, whereas Polish has not. Thirdly, in English, different types of verbs including sound emission verbs can combine with path satellites to express motion events, as in (12), whereas in Polish this type of motion construction[16] is much more restricted.

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[15] Narasimham (2003: 135) considers contact, i.e., friction between the Figure and the Ground, as a manner component relevant for exploring crosslinguistic differences in the manner verb lexicon.

[16] Unlike other satellite-framed languages, English allows a great flexibility as to the types of verbs which can combine with path satellites to express motion events. See Narasimham (2003) and Narasimhan et al (2006) for a discussion of motion constructions and their productivity across two

(12)   Sound emission verbs (taken from Goldberg & Jackendoff, 2004)

a. The wagon creaked down the road.

b. The bullets whistled past the house.

Dimitrova-Vulchanova & Martínez (ms.) aimed at unveiling the sort of manner details which are lexicalised in English, Bulgarian and Norwegian (three satellite-framed languages). In their study, they asked English, Bulgarian and Norwegian speakers to name, using only verbs, a range of motion events which differed in a number of ways: whether the Figure was or was not human, direction of motion, speed, path-shape, etc. For example, they found that for crawling events, English and Norwegian manner verbs are sensitive to the species characterisation of the Figure, while Bulgarian crawling verbs refers to both human and non-human Figures. Thus, English possesses *crawl* for humans and more specialised verbs which are used for snakes, snails and insects (e.g., *wind*, *slither*, *slide*, *creep*), and Norwegian uses *krabbe* for human crawling, *kryppe* for insects, and *aale seg* for snakes. Word-Allbritton (2004) also reported this manner verb sensitivity to the Figure's characteristics in Turkmen, a verb-framed language spoken in Turkmenistan. In Turkmen, birds, insects and planes *ug* 'fly' but people do not, while in English, the verb *fly* applies to a wide range of Figures (human, animal, objects, etc.) Thus, it seems that Manner in Turkmen is closely connected to the physical characteristics of the Figure; specific manners of motion may be uniquely associated with certain Figures. Word-Allbritton concluded that verb-framed languages do not seem to generalise the use of manner verbs with Figures other than those for whom they express the main or unique Manner of motion.

One of the problems that arises from research on motion events is that the category of Manner is too general; as we have seen above, it includes a wide range of information: speed of motion, psychological states (anger, tiredness), basic locomotive abilities (walk, run, jump, etc), means of conveyance or vehicle, contact, etc. In an attempt to shed light on the sort of specific manner details which are

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satellite-framed languages (English, Polish), and three verb-framed languages (Hindi, Turkish and French).

encoded in verbs and/or in other lexical items, Ibarretxe-Antuñano (2004b, 2006a), Özçalişkan (2004), Slobin (2000, 2005), and many others, have subdivided Manner into different semantic categories. Ibarretxe-Antuñano (2006a) provided a summary list of fine-grained manner categories which have been proposed for the analysis of motion verbs[17]:

- Motor pattern: basic locomotive abilities
    - Ways of walking
    - Ways of running
    - Ways of jumping
    - Ways of swimming
    - Ways of flying
- Energy: stamina required for performing motion; e.g. *throw*, *fling*, *churn*
- Forced motion: motion requires an effort to be performed; e.g. *drag*, *trudge*
- Furtive motion: hidden purpose or secretive motion; e.g. *crawl*, *creep*, *sneak*
- Obstructed motion: there is some impediment or obstacle for motion; e.g. *stumble*, *trip*
- Smooth motion: motion flows, there is no obstacle; e.g., *glide*, *slide*
- Leisurely motion: motion for pleasure; e.g., *hike*, *trek*
- No aim in motion: no special purpose; e.g., *roam*, *saunter*
- Violent motion: e.g., *charge*, *dash*
- Unsteady motion: unbalanced motion; e.g., *totter*, *stagger*
- Rate: speed of motion (fast or slow rate; increasing or decreasing speed); e.g., *hurry*, *dash*, *zoom*
- State of Figure: physical or psychological state; e.g., *limp*, *traipse*, *stroll*, *swagger*

In addition, Nikanne & van der Zee (2004) and Dimitrova-Vulchanova & Martínez (ms.) identified a further manner parameter, namely, global or local path-shape as expressed in the verbs *curve* and *zig-zag*. In contrast, path-shape is regarded as a path

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[17] She uses these manner categories in her analysis of Basque sound symbolic expressions for motion.

parameter by other scholars (e.g., Ibarretxe-Antuñano, 2006a; Slobin, 2005; Talmy, 2000b).

The manner categories or parameters are not mutually exclusive, that is, a verb can encode more than one fine-grained manner detail. For example, the English verb *jog* could be analysed as motor pattern-run and slow rate of motion; *stagger* as motor pattern-walk and unsteady motion, etc. Furthermore, it is important to remark that Manner might be conflated together with Path in the verb root, as in the verb *soar*, which could be analysed as motor pattern-fly, fast rate of motion and upwards path of motion.

When exploring the semantics of motion verbs, more often than not scholars have found it hard to decide whether Manner alone or Manner plus Path are encoded in motion verbs. Authors frequently differed in their semantic analyses of motion verbs and in what they count as manner and path verbs. By way of illustration, let us consider how Wälchli (ms.) and Özçalişkan (2004) classified some motion verbs. On the one hand, Wälchli (ms.) considered that there are intermediate verbs which conflate both Manner and Path. These intermediate cases are manner verbs with a preferred direction, such as *fall* and *sink* (usually with downwards motion), *flee* (usually with motion away from a location), *climb*[18] and *soar* (usually with upwards motion). On the other, Özçalişkan (2004) categorised verbs conflating Manner and Path (that is, Wälchli's intermediate verbs) as manner verbs. Within the manner group, she also included verbs conflating Manner and Ground, such as *fly* (Ground: air), *swim* and *sink* (Ground: water). Unlike Wälchli's analysis, Özçalişkan analyses *sink* as a verb conflating Manner and Ground, but not Path (downwards motion).

At least two explanations might be put forward in order to account for the different positions taken up by scholars' analyses of motion verbs. On the one hand,

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[18] According to Fillmore (1982: 32-33) and Jackendoff (1985: 279, 2002), English *climb* is a cluster concept, that is, there are two conditions relevant for a situation to count as an instance of climbing: (1) effortful clambering movement (with use of limbs), and (2) upwards direction. However, these two factors do not need to be simultaneous, and neither is necessary, but either is sufficient. For example, in English a human can climb up and down, but a snake can climb up (upward direction condition is met), but not down (because the limbs supporting condition and the upward direction conditions are not being met).

since manner verbs with a preferred direction (e.g., *soar*, *climb*, upwards motion) can combine with different path satellites (e.g., *soar up and down*, *climb to*, *climb across*, *climb down*), it seems that path information, rather than residing in the verb, is relegated to satellites. Therefore, it might be argued that these manner verbs are devoid of the Path component. On the other, the fact that some manner verbs are frequently associated with certain paths suggests that the meaning of those manner verbs imply those paths; in other words, both Manner and Path are thought to be conflated in the verb. Thus, *soar* could be said to denote a quick or fast rate in the motion (Manner) plus an upwards trajectory (Path); *climb* as encoding the use of one's legs and/or hands (Manner) in order to go up or onto something (Path).

All in all, crosslinguistic research exploring manner verbs has zoomed into the features which make up Manner in order to capture fine-grained semantic differences lexicalised in verbs across languages. As has been shown, the Manner component can be decomposed into a number of independent categories pertaining to various aspects of the motion scene.

4.5.3. Path verbs

Despite of the importance of Path in the motion event, the emphasis of the analysis of motion verbs has usually been on the Manner of motion (cf. Ibarretxe-Antuñano, 2003b; Sivonen, 2005). So, it is no exaggeration to state that both the semantic component of Path and path verbs themselves demand an investigation.

In order to better understand the differences among path verbs, both within and between languages, it is useful to start by pointing out the distinct components which constitute this element. According to Talmy (2000b: 53-56), the three main components of Path are the Vector, the Conformation, and the Deictic[19]:

1. The Vector refers to the direction of motion of the Figure with respect to the Ground, which can be a source, a milestone or a goal; thus, Vector can denote

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[19] According to Talmy (2000b: 53), Path in spoken languages consists of three components (Vector, Conformation and Deixis), whereas in sign languages two other components are added: Contour and Direction.

motion from a source (e.g., *move from*), past or along a milestone (e.g., *move along*, *via*), and to or towards a goal (e.g., *move to*, *towards*).

2. The Conformation is related to the geometry of Grounds, which can be conceptualised as containers (e.g., *move into*, *out of*), surfaces (e.g., *on*), points (e.g., *past*), etc.

3. The Deictic component is clearly defined by Talmy (2000b: 56) as follows: '[t]he Deictic component of Path typically has only the two member notions *toward the speaker* and *in direction other than toward the speaker*'.

The three Path components can cooccur. If we consider example (13), the English satellite into combines both Vector and Conformation; the Figure reached its goal or endpoint of motion, which is a container. In (14), the Spanish verb *salir* denotes motion from a point inside a container, and thus, it conflates Vector and Conformation. The Spanish preposition *de* 'from' just encodes the Vector (i.e., from a source)

(13)   The ball rolled *into* the box

(14)   Pedro *salió de* casa

         Lit. Peter exited from home

Talmy pointed out than in Spanish path verbs, Conformation and Deixis cannot be conflated together. Thus, there are Deictic verbs (e.g., *venir* 'come', *ir* 'go') on the one hand, and Conformation plus Vector verbs (e.g., *entrar* 'enter', *salir* 'exit') on the other.

Slobin (in press) proposed a fourth component, *Earth-grid Displacement.* This component relates direction of motion to earth-based geometry: north-south-east-west, up-down, and other absolute coordinates (upstream, downstream). For example, the Spanish verbs *ascender* 'ascend' and *descender* 'descend' denote motion along the vertical axis; Vietnamese and other languages have verbs for 'go upstream' and 'go downstream'.

Narasimhan (2003: 136) explored the English and Hindi path verb lexicon taking as a starting point Talmy's Path components. She identified the following Path components in Hindi and English verbs of motion:

a. Complex endpoint: e.g., *enter*. It encodes features of the endpoint, e.g., whether it is an enclosure.

b. Complex source-point: e.g., *emerge, exit*.

c. Simple endpoint: e.g., *reach*, *arrive*.

d. Simple potential endpoint: e.g., *approach*, *near*, *advance*.

e. Simple source-point: e.g., *leave*, *depart*.

f. Midpoint: e.g., *pass*.

g. Direction: e.g., *climb*, *ascend*, *rise*, *descend*.

h. Deixis: e.g., *come*, *go.*

Narasimham's components (a) - (f) are specific formulations of Talmy's Vector and Conformation. For example, complex endpoint is the same as Vector (towards a goal, which is the endpoint of motion) and Conformation (the Ground is an enclosure or volume). Components (g) and (h) pertain to Earth-grid Displacement and to the Deictic component respectively.

In general, Vector, Conformation, Deixis and Earth-grid Displacement should be seen as Path components which are useful for exploring crosslinguistic differences in the type of path information expressed in path verbs. Besides these, scholars have proposed other ways to further analyse path verbs, which may equally serve the same purposes.

Wälchli (2001) offered a more fine-grained typology of path verbs; more precisely, he proposed 6 types of paths or *cardinal kinds of displacement* (in his terminology), which he labelled with the help of Latin prepositions:

a. AD = the Figure goes to the Ground

b. IN = the Figure goes into the Ground

c. SUPER = the Figure goes onto the Ground

d. AB = the Figure comes away from the Ground

e.   EX = the Figure comes out of the Ground

f.   DE = the Figure comes down from the Ground

Berthele (2004) used Wälchli's types of paths with some modifications. In particular, in (c) and (f), Wälchli seemed to mix displacement along the vertical axis and a specified movement towards (*onto*) or away (*down from*) a Ground. According to Berthele (2004: 99), this association is avoidable since a motion verb coding a downward path can be followed by a complement denoting either the source, as in (15), or the goal of motion, as in (16).

(15)   The boy falls *from the tree*

(16)   The boy falls *onto the ground*

Thus, Berthele proposed that paths be categorised without specifying the source or goal in the vertical dimension (see his classification below). Moreover, unlike Wälchli's list which used the deictic verbs *go* and *come*, Berthele decided to use the verb *displace* in order to avoid reference to an unnecessary deictic centre. Here is his reformulation:

a.   AD = the Figure displaces to the Ground

b.   IN = the Figure displaces into the Ground

c.   SUPER = the Figure displaces up

d.   AB = the Figure displaces away from the Ground

e.   EX = the Figure displaces out of the Ground

f.   DE = the Figure displaces down

In a recent unpublished manuscript, Wälchli (ms.) proposed 5 basic domains for Path: ENTER, EXIT, ASCEND, DESCEND, and PASS/CROSS. His new proposal leaves out the AD type of path (i.e., the Figure goes to the Ground), but incorporates the notion of a Figure going past or crossing the Ground. Moreover, he overcomes the limitations of his earlier classification (Wälchli, 2001).

On the whole, to categorise path verbs in terms of types of paths or domains seems to be a useful tool for crosslinguistic analyses as well. The types of paths

which have been proposed encompass Talmy's Vector, Conformation and Deixis, and Slobin's Earth-grid Displacement (vertical and horizontal axis). For instance, *ascend* might be categorised as a SUPER verb (i.e., the Figure displaces up) or as a verb encoding Earth-grid Displacement (i.e., vertical axis: up); *leave* as an AB verb (i.e., the Figure displaces away from the Ground) or as a verb encoding Deixis (i.e., motion away from the deictic center). In contrast, the domains of Path later proposed by Wälchli, i.e., ENTER, EXIT, ASCEND, DESCEND, and PASS/CROSS, exclude the deictic component of Path.

Finally, it has also been suggested that the path verb lexicon may be closed-ended (i.e., limited in the sorts of notions it can convey) and that languages, regardless of typological status, may have comparable path verb lexicons. Özçalişkan (2004) found that English and Turkish present a similar number of path verbs, more concretely, 20 types for English and 24 types for Turkish. She claimed that the manner verb lexicon is open ended (i.e., open to new additions, cf. Slobin, 2003, 2006), but the path verb lexicon 'forms a closed lexical category that does not provide many options for elaboration' (Özçalişkan, 2004: 85). Though motion research data points in that direction, the claim of comparable size of path verb lexicons across languages has not yet been addressed.

4.6. Summary

Motion verbs have been the subject of a great deal of research from different theoretical frameworks because they present interesting semantic and syntactic characteristics. Even though motion verbs are considered to be a coherent semantic class, this chapter shows how motion verbs encode different types of semantic information, and also display different syntactic behaviours.

Sections 4.2 and 4.3 reviewed a number of approaches to grammar centred on the verb lexicon: the Syntax-Semantics Interface and the Functional-Lexematic model. The general label 'the Syntax-Semantic Interface' was given to those theories which assume that argument structure is largely predictable from the meanings of verbs, and that verbs with similar meanings display similar syntactic

behaviour. Scholars working within the Functional-Lexematic model adopted a more semantically-oriented approach to the study of motion verb lexicons. Both frameworks have provided interesting insights into the semantic and syntactic nature of motion verbs, and different classes of motion verbs are proposed in terms of these characteristics. Unlike scholars concerned with the syntax-semantics interface, who identify motion verb classes based on their syntactic behaviour, scholars within the Functional-Lexematic paradigm do take semantics rather than syntax as starting point for their classifications of motion verbs. Nevertheless, they also claim that motion verbs within the same class not only share semantic content but also exhibit similar syntactic behaviour. Overall, the general tendency for analysing motion verbs has been to separate path verbs from manner verbs. On the one hand, path verbs are often divided into classes in terms of (1) the trajectories they describe and (2) whether or not they denote an achieved location/endpoint. Manner verbs, on the other hand, are normally sorted into two groups: manner verbs implying translational motion (e.g., *walk*, *run*) and manner verbs denoting self-contained motion (e.g., *shiver*, *tremble*, *spin*, *twirl*).

Section 4.4 offered a summary of some online lexical databases available for English and Spanish; they provide different analyses of motion verbs, which range from more syntactically-oriented approaches to more semantically-oriented ones. These online databases are valuable tools for exploring the semantics and syntax of motion for at least four reasons: (1) they all allow for unlimited searches with their browsers; (2) semantic and syntactic information is retrieved in a few seconds and fully displayed on the screen; (3) Adesse and FrameNet are based on corpora and thus, use real language, and (4) Adesse, FrameNet and WordNet act as both dictionaries and thesauri and, thus, a particular motion verb is both defined and presented in relation to other verbs within the same class, frame, or synset.

Section 4.5 delved into the semantics of motion verbs, leaving syntactic considerations aside. In this section, research on motion events, with particular attention to the Manner and Path components, has been reviewed. Manner as a general semantic category is useful in the description of lexicalisation patterns for motion; specifically when Manner is contrasted with Path. Furthermore, as has been shown in section 4.5.2, crosslinguistic research exploring manner verbs have

concentrated on zooming into the features which make up Manner in order to capture fine-grained semantic differences lexicalised in verbs. Thus, it has been found that the Manner component can be decomposed into a number of independent parameters which pertain to various aspects of the motion scene: forced motion, smooth motion, rate of motion, state of the Figure, etc. In contrast, Path of motion has not received as much research attention. Section 4.5.3 showed that Path may also be subdivided into four basic components (Vector, Conformation, Deixis and Earth-grid Displacement) which serve the purpose of exploring what sorts of path notions are encoded in path verbs. Crosslinguistic research, moreover, suggests that path verbs may be categorised in terms of basic types of paths or domains. Last but not least, it has been suggested that unlike the manner verb lexicon, which seems to be open to new additions, the path verb lexicon might be closed-ended, and that languages from both typological groups might have path verb lexicons which are comparable in size.

CHAPTER 5

THE SEMANTICS OF THE ENGLISH AND THE SPANISH MOTION VERB LEXICONS

5.1. Introduction

5.2. Aims and methodology

5.2.1. Aims

5.2.2. Corpus of motion verbs

5.2.3. Methodology

5.2.4. Some problems and limitations

5.3. General distribution: verb conflations

5.3.1. English verbs

5.3.2. Spanish verbs

5.3.3. Discussion and conclusions

5.4. Path verbs

5.4.1. English path verbs

5.4.2. Spanish path verbs

5.4.3. Discussion and conclusions

5.5. Manner verbs

5.5.1. English manner verbs

5.5.2. Spanish manner verbs

5.5.3. Discussion and conclusions

5.6. Conclusions

5.1. Introduction

This chapter sets out to explore the semantic nature of the English and the Spanish motion verb lexicons and to offer a contrastive account with special attention to the Path and Manner dimensions of motion. Despite the bulk of research on the linguistic expression of motion events in English and in Spanish, and the resulting claims about the semantics of their verbs, hardly any research has been devoted to an in-depth analysis of their motion verb lexicons, and a comparative study is, to our knowledge, nonexistent. As has been stated in previous chapters, Slobin (1997: 459) pointed out that languages seem to have a 'two-tiered' lexicon of manner-of-motion verbs[1]: (1) a general one, or superordinate level, represented by everyday verbs such as *walk*, *run*, *jump*, *fly*, etc.; and (2) a more specific and expressive level consisting of different ways of walking, such as *stroll*, *wander*, or *shuffle*; different ways of running such as *sprint* or *jog*, etc. English possesses a very extensive and elaborated second level. In contrast, in Spanish the manner-of-motion verb lexicon is not as rich and mainly consists of general manner-of-motion verbs. Though a definitive count has not been undertaken, Slobin (2006: 71) estimated around several hundred manner-of-motion verbs for English and less than one hundred for Spanish. Moreover, in an attempt to shed light on the sort of specific manner details which are encoded in verbs and/or in other lexical items, scholars have subdivided Manner into different semantic categories. In terms of path verbs, it was pointed out in Chapter 4 that Özçalişkan (2004: 85) claimed that path verb lexicon of both satellite- and verb-framed languages 'form a closed lexical category that does not provide many options for elaboration'. Thus, she hypothesised that both satellite-framed and verb-framed languages seem to possess approximately the same number of path verbs. However, her claim has not been fully addressed by research yet.

The present chapter aims at bridging the gap in the existing literature by examining a substantial set of motion verbs in English and Spanish: specifically, we

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[1] This does not seem to be only specific to motion verbs but also to verbs from other semantic fields, such as verbs of seeing (with *see* and *look* at the superordinate level and *stare, gaze, glance, gape*, etc. at the specific level); verbs of laughing or smiling (with *guffaw, smirk, grin*, etc at the second level), verbs of saying, verbs of hearing, etc. However, research is needed to test whether languages have these two levels for most semantic fields or just for some of them.

will be focussing on self-agentive and non-agentive motion verbs (Talmy, 2000b: 28), that is, intransitive motion verbs normally found in the construction 'Figure + Motion Verb'. Our research consists of three parts: first, we concentrate on the sort of general semantic components which are encoded in these motion verbs; second, we delve into the sorts of path notions expressed in verbs, and third, we zoom in to the type of fine-grained manner details which are lexicalised in verbs. Moreover, our investigation intends to compare and contraste English and Spanish motion verb lexicons and to address two general research questions: (1) the question of whether English and Spanish have path verb lexicons which are comparable quantitatively (i.e., a similar number of verbs) as well as qualitatively (i.e., both path verb lexicons display similar sorts of path information) and (2) the question of whether English and Spanish manner verbs encode comparable manner details despite the fact that English manner-of-motion verbs outnumber those of Spanish.

In section 5.2, our aims, research questions, corpus and methodology are fully described. Sections 5.3, 5.4 and 5.5 delve into the analysis of English and Spanish motion verbs. In section 5.3, the general distribution of verbs in terms of the general semantic components that they encode is presented. Section 5.4 focuses on path verbs and zooms in to the sorts of path notions which seem to be typically expressed in these languages. Next, section 5.5 considers the semantic nature of manner verbs in each language and the sort of manner information which seems to be characteristically lexicalised in these languages. Within each section, we first deal with English motion verbs, then with Spanish motion verbs, and finally, we compare and contrast the two languages. Section 5.6 answers each one of the research questions addressed throughout the chapter and sums up the main conclusions drawn from our analysis.

5.2. Aims and methodology

5.2.1. Aims

The primary goal of this chapter is to provide a systematic and detailed account of the semantics of both the English and the Spanish motion verb lexicons, and to

compare and contrast them. Our starting point is Talmy's general semantic components for motion, but our analysis looks into the broad categories of Path and Manner so as to search for more subtle differences in the motion lexicon, which would enable us to (a) better understand how the lexicon for motion is organised/distributed in these two languages, and (b) formulate hypotheses for further psycholinguistic research (some of which will be addressed in Chapter 6).

The research questions that guide our semantic analysis are the following ones:

1. Which semantic notions are conflated in English and Spanish motion verbs?

This research question aims at exploring which sorts of conflations are generally found in English and Spanish motion verbs and which are not. Beyond the path-conflating and the manner-conflating verb types, other lexicalisation patterns are expected to be found: Motion + Figure in Co-Motion (e.g., *acompañar* and *accompany*, in which several figures go together), Motion + Ground (e.g., *atajar* 'to go somewhere by taking a shortcut', *costear* 'to sail or move along the coast'), Motion + Path + Ground (e.g., *embarcar* 'to go on board', *embark* 'to go on board', *emigrate* 'to leave one's country', *land* 'down onto the ground'), Motion + Path + Ground + Manner (e.g., *ford* 'to cross a river by wading, walking); etc.

2. Do the two languages have comparable path verb lexicons?
    2.1. Are the two path lexicons comparable in size?
    2.2. Are the two path lexicons comparable in their semantic nature?
        2.2.1. What sorts of path notions are typically lexicalised in English?
        2.2.2. What sorts of path notions are typically lexicalised in Spanish?

We intend to test Özçalişcan's claim that path verb lexicons of satellite- and verb-framed languages are comparable in size. Our research attention is directed to the semantics of English and Spanish path verbs to unveil both crosslinguistic similarities and differences. It might be the case that English path verbs of Latin origin (e.g., *enter*, *ascend*, *descend*, *arrive*, etc) look like Spanish path verbs sharing

the same etymology (e.g., *entrar*, *ascender*, *descender*, *arrivar*, etc) and, thus, express the same sorts of path information. It could be expected, however, that there exist path verbs of a different semantic nature in the Spanish lexicon; for instance, verbs whose etymological origin is that of a preposition (encoding Path) plus an adverb: *adentrarse* 'to go into' = *a + dentro* ('inside'), from Latin *deintro*; *acercarse* 'to bring nearer to'= *a + cerca* ('near'), from Latin, *circa* 'around'. In general, by contrasting the English and the Spanish path verb lexicons both quantitatively and qualitatively we mean to give path verbs the research attention they deserve.

3. Do both languages lexicalise similar manner-of-motion information in verbs?

   3.1. What sorts of manner details are typically lexicalised in English?

   3.2. What sorts of manner details are typically lexicalised in Spanish?

   3.3. Does English exhibit a greater degree of manner granularity in all subdomains of motion? If not, in which suddomain(s) does Spanish exhibit a greater degree of manner granularity?

Crosslinguistic research has suggested that English manner verbs outnumber those of Spanish and that they encode much finer manner information. Thus, our endeavour is also to investigate which types of fine-grained manner information are lexicalised in both lexicons. Furthermore, we intend to find out which types of manner information are more productively expressed in verbs. Research has shown that English allows a great flexibility as to the types of verbs which can combine with path satellites to express motion events, such as sound emission verbs. In addition, English can use vehicle names and dance names as motion verbs. Finally, our research seeks to find out (a) whether the English manner verb lexicon is equally rich and varied for all subdomains of motion with which we have dealt (i.e., human and animal locomotion, motion of objects or inanimates, motion in/on vehicles, etc), and if not, (b) whether the Spanish manner verb lexicon might be richer than the English for some particular subdomains.

5.2.2. Corpus of motion verbs

Our corpus consists of 376 English motion verbs and 257 Spanish motion verbs. The motion verbs under the scope of the present investigation include general motion verbs (i.e., no specific semantic information apart from the Motion component, such as, the Spanish verbs *moverse* and *menearse* 'to move oneself', and English *move*), accompany verbs (e.g., *escoltar* 'to escort', *guiar* 'to guide', *escort, guide, lead*), and path verbs (e.g., *entrar* 'enter', *salir* 'exit', *arrive, come, depart, enter, exit, go*) as well as manner verbs. Manner verbs pertain to (a) human and animal locomotion (e.g., *andar* 'walk', *correr* 'run', *saltar* 'jump', *walk, run, fly, hop, pronk, slither*), (b) motion using a vehicle (e.g., *conducir* 'to drive', *navegar* 'to navigate', *bike, canoe, ferry, ship*), (c) motion while dancing (e.g., *bailotear* 'a careless way of dancing', *waltz, foxtrot, twist*), (d) motion of physical objects or inanimate entities (e.g., *rodar* 'roll', *oscilar* 'oscillate', *revolve, roll, spin, shake, swing*) and (e) change of posture (*acostarse* 'to lay oneself down', *levantarse* 'to stand up', *arquearse* 'to bend oneself', *kneel, lean, recline, twist*).

Berthele (2004: 108-109) states that posture verbs are 'manner of position' verbs as they encode 'configurational information about the dimensions and the vertical and the horizontal orientation of the Figure'. However, we decided to count posture verbs in our corpus as they express motion which is internal to the Figure (i.e., self-contained motion). In other words, the Figure moves its body by changing its posture or orientation though it does not move to a different location (i.e., translational motion). Talmy (2000b) widens the category Posture to include 'postures or orientations that are assumed by the human body or **by objects** treated as comparable to the body' [emphasis ours]. Thus, inanimate objects can be Figures of posture verbs as well. However, the semantic natures of posture verbs in English and in Spanish are different. As Talmy (2000b: 80) remarks, English posture verbs (*lie, sit, stand, lean, kneel, squat, crouch*, etc) refer to 'being in a state'. These verbs must be augmented by a satellite to denote getting into a posture (e.g., *lie down, kneel down*). In the case of *lie*, it must be further augmented by an agentive derivation (*lay down*) to refer to putting things into the lying posture. In contrast, Spanish lexicalises posture notions in the agentive 'putting into a state' type (i.e., transitive or caused motion, such as *acostar, levantar*). To express the other types,

grammatical elements are used, for example, *estar acostado* 'be in lying posture' for the stative; *acostarse* includes the reflexive morpheme 'se' to get the meaning of getting into a posture ('to lie down'). On the whole, the reflexive pronoun 'se' makes an agentive posture motion verb a self-agentive one.

Manner of motion verbs mostly depict *self-agentive motion* and *non-agentive motion* (Talmy, 2000b). Self-agentive verbs are mainly intransitive verbs which typically denote that the Figure has control over its motion, that is to say, there is no external agent causing its motion:

(1)   a. He walked/ran/limped down the hall

        b. Andó/corrió/cojeó por el pasillo

On the other hand, non-agentive verbs are also intransitive verbs, but their Figures are inanimate entities, as in (2). Non-agentive motion typically refers to motion where the Figure does not necessarily have direct control over its motion (Levin, 1993: 264-265; Morimoto, 2001: 46-47).

(2)   a. The ball slid/rolled/bounced

        b. La pelota se deslizó/rodó/botó

Generally speaking, the motion verbs which fall within the scope of this dissertation are those which can be found in the intransitive construction 'Figure (subject) + Motion Verb' and in the transitive constructions 'Figure (subject) + Motion Verb + Ground (direct object)', as in (3), and 'Figure + Motion Verb + Figures in Co-Motion' (especially for accompany verbs), as in (4). Transitive motion verbs denoting caused motion do not fall within the purview of the present work.

(3)   a. We left home

        b. Abandonamos la casa

(4)   a. He accompanied/guided Mary

        b. Acompañó/guió a María

In order to compile our corpus of motion verbs, we made use of available verb lists in the existing literature, monolingual and bilingual dictionaries, and thesauri. Within the literature on English motion verbs, we consulted Levin & Rappaport-Hovav (1992), Levin (1993) and Snell-Hornby (1983). Also, the following English dictionaries and thesauri were employed:

- *Oxford English Dictionary* (OED)

- *Cambridge Advanced Learner's Dictionary*, CD-Rom version 1.1. Cambridge University Press. 2003 (CALD)

- *Cambridge Klett Compact*, CD-Rom version 1.0b. Cambridge University Press. 2002 (CKC)

- *Merriam-Webster Online*, available at http://www.merriam-webster.com/ (MW)

- *The Free Dictionary*, (http://www.thefreedictionary.com/dictionary.htm) (TFD)

- *Longman Language Activator*. Pearson Education. 2002 (LLA)

- *Roget's thesaurus of English words and phrases* (RTE), available at http://poets.notredame.ac.jp/Roget/

To gather our corpus of Spanish motion verbs, Cifuentes Honrubia[2] (1999) and Morimoto (2001) were the sources within the literature on Spanish motion verbs. In addition, Spanish motion verbs were taken from the following monolingual dictionaries:

- *Diccionario de uso del Español*. María Moliner, CD-Rom version 2.0, Gredos. 2001. (DUE)

- *Diccionario de la lengua española*. Real Academia Española, 21st edition. Espasa Calpe. 1992. (DRAE)

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[2] I am grateful to José Luis Cifuentes Honrubia for sending me the full manuscript of his 1999 book, *Sintáxis y Semántica del Movimiento*, as it is currently out of print.

5.2.3. Methodology

Motion verbs in English and Spanish were included in two separate Excel sheets (see Appendices 1 and 2). Ten columns were created. The first listed the motion verbs in alphabetical order, and English translations were provided for each Spanish motion verb. The second column showed whether the verb expresses translational motion or self-contained motion (Talmy, 2000b: 35). As has been stated in previous chapters, translational motion (i.e., change of the Figure's overall location) is conveyed primarily by path verbs but also by some manner verbs. More specifically, manner verbs such as *walk*, *tiptoe*, *jog* and *run* (e.g., Morimoto, 2001) imply the Figure's change of location though the path of motion remains unspecified. In contrast, self-contained motion is, in most cases, linked to non-agentive manner verbs (i.e., motion of inanimate entities), which generally express oscillation, rotation, wiggling, trembling, etc, such as *revolve*, *roll*, *rotate*, *swing*, *sway*, and *shake.* In addition, self-contained motion is linked to posture verbs, which denote motion of a Figure which remains in its overall location.

The third column coded whether each motion verb can also denote agentive motion (henceforth AM), that is, an agent that causes the Figure to move:

(5)   He plunged his son into the swimming pool

(6)   He slid/rolled/bounced the ball into the house

By way of illustration, the self-agentive verb *plunge* is an intransitive verb which denotes 'to move or fall suddenly and often a long way forward, down or into something' (CALD); however, it can be used transitively meaning 'to cause someone or something to do so' (CALD)[3]. Thus, in the third column, we coded whether verbs in our corpus can display agentive motion (caused motion).

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[3] These definitions are drawn from *Cambridge Advanced Learner's Dictionary* (henceforth, CALD).

The fourth column coded the general semantic components that were conflated in each verb. A motion verb can encode one or more of the following semantic elements[4]:

- Figure: the moving object
- Ground: the entity or entities that the Figure is moving in relation to
- Motion: the presence of motion per se
- Path: the trajectory of the Figure
- Manner: the way in which motion is performed
- Cause: what originates the motion itself

For example, *arrive* conflates Motion and Path, *walk* conflates Motion and Manner, and *blow* conflates Motion and Cause (i.e., current of air or wind). Besides the Co-event relations of Manner and Cause, we took into account whether the verbs under the scope of this dissertation encoded any other co-event relation (Talmy, 2000b: 42-47). As motion verbs inherently encode the Motion component, we deliberately avoided its constant repetition throughout the analysis of verbs in the spreadsheet.

Next, in the fifth column, we counted the number of conflated elements in each motion verb. For example, if a verb encodes Path besides Motion, then we coded '1'; if a verb conflates Path and Manner besides Motion, then we coded '2', and so on. The sixth and seventh columns exhibit the sorts of path notions and types of paths, if any, conveyed by motion verbs and the manner details.

In terms of the Path component of motion, the following notions were taken into account:

- **'Vector'**: refers to the departure (from), traversal (via, along) or arrival (toward) of a Figure in relation to the Ground.
- **'Conformation'**: is linked to the geometry of the Ground, whether it is a container (into, out of), a surface (onto), etc.

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[4] See Chapter 2, Section 2.2.2, for a comprehensive account on the basic semantic components of a motion event and the types of relations between the main event and the co-event, and Section 2.2.3 for the different lexicalisation patterns which have been identified across languages.

- **'Deixis'**: direction toward or away from the speaker; e.g., *ir* 'to go', *venir* 'to come', *come*, *go*.

- **'Earth-based orientation'**[5]: up-down orientation, north-south-east-west, etc.

All these path notions may be expressed by the types of path which are listed next. The reader should note that G stands for Ground:

- **Types of Path**[6]:
    - To/towards G (arrival, endpoint): *alcanzar* 'to reach', *reach*, *arrive*
    - Away from G (departure, source): *abandonar* 'to abandon', *abandon*, *depart*
    - Into G (container): *entrar* 'to enter', *inmigrar* 'to immigrate', *enter*, *immigrate*
    - Out of G (container): *salir* 'to exit', *exit*
    - Up/onto G - Upwards: *ascender*, *subir* 'to ascend', *embark*, *mount*, *scale*
    - Down /down from G - Downwards: *descender* 'to descend', *caerse* 'to fall down', *descend*, *sink*, *fall*
    - Pass/cross G (traversal, milestone): *cruzar* 'to cross', *pasar* 'to pass', *traverse*, *pass*, *cross*
    - Closer to G: *acercarse*, *arrimarse* 'to move closer to G'
    - Forwards: *avanzar* 'to advance', *advance*
    - Back to G/ Backwards: *desandar*, *retroceder* 'to walk/go backwards', *back*
    - Change direction: *desviar (se)* 'to divert', *virar* 'to tack', *swerve*
    - Multiple directions from a unique start: *esparcir*, *dispersarse* 'to scatter'

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[5] Slobin (in press) adds this fourth distinction to Talmy's subcomponents of Path (Vector, Conformation and Deixis). The notion 'Earth-based orientation' has also proven useful for manner verbs depicting self-contained motion with a specific orientation, such as posture verbs.

[6] The first seven path types (i.e., from To/toward G to Pass/cross G) are drawn from Wälchli (ms.) and Berthele (2004), whereas the last six are our own additions to account for all the verbs in our corpus. The reader might note that 'Closer to G' could also have been considered as a subtype of the path 'To/towards G' instead of as a separate type of path. However, we opted for such granular types of path in order to better account for the semantic nature of path verbs.

- After G: *perseguir* 'to chase', *seguir* 'to follow', *follow*

In terms of Manner, on the other hand, we have proposed the following fine-grained manner categories which are relevant for our analysis:

- **'Posture':**
  - Vertical orientation (upwards or downwards): *tenderse* 'to lie onself down', *agacharse* 'to crouch', *accurrucarse* 'to crouch', *empinar(se)* 'to (cause to) stand up'
  - Horizontal orientation: *acostarse*, *tenderse*, *echarse* 'to lie down'
  - Unspecified orientation: *extenderse*, *estirarse* 'to stretch oneself', *stretch*
  - Bend, Twist, Curve: *arquear* 'to bend oneself', *slouch*, *twist*
  - Roll – Unroll: *enroscarse* ' to roll oneself'
  - To one side: *ladear(se)* 'to slant, to lean', *careen*, *dodge*
- **'Shake, swing, vibrate'**[7] : *temblar*, *tiritar* 'to tremble, shiver', *tremble*, *sway*
- **'Revolve, rotate, spin'**[8]**:** *rodar*, *girar* 'to roll, to turn', *roll*, *spin*, *twirl*, *turn*
- **'Bounce':** *botar* 'to bounce', *rebotar* 'to rebound'
- **'Upside down'**: *capsize*, *flip*
- '**Iterative motion':** *apisonar* 'to tread repeatedly on something', *bob*, *rebound* (iterative up-down motion)

These manner categories are mainly related to manner verbs describing self-contained motion, whereas the following categories are linked to verbs implying translational Motion (i.e., such manners of motion appear to exist only in the course of the Figure's translational motion):

- **'Path-shape'**[9]**:**

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[7] 'Short, sudden movements' are also included under this category.

[8] As pointed out by Levin & Rappaport-Hovav (1992), Levin (1993) and Morimoto (2001), verbs within this category might also be found in translational motion.

[9] As we pointed out in Chapter 4, 'Path shape' has been usually regarded as a manner parameter (e.g., Nikanne & van der Zee, 2004).

- o Zigzag or curved path: *culebrear*, *serpentear* 'to follow a curved path, to zigzag', *zigzag*

- **'Motor pattern' (mp)**: basic locomotive abilities for human and animals. Different body positions are adopted when performing each motion:
    - o Ways of walking (mp-walk)
    - o Ways of running (mp-run)
    - o Ways of jumping (mp-jump)
    - o Ways of flying (mp-fly)
    - o Ways of swimming (mp-swim)

- **'Rate'**: speed of motion; e.g., *hurry*, *dash*, *sprint*, *zoom*
    - o Rate-fast; Rate-slow; Rate-increase; Rate-decrease

- **'Forced motion'**[10]: motion requires an effort to be performed:
    - o 'Energy-high': *abalanzarse* 'to dash over in a violent way', *lanzarse* 'to throw oneself', *lunge*, *plunge*, *thrust*
    - o 'Energy-low': *plod*, *trudge*, *wade*

- **'Furtive motion'**: hidden purpose or secretive motion, as in to avoid being seen or heard; e.g. *crawl*, *creep*, *sneak*

- **'Obstructed motion'**: there is some impediment or obstacle; e.g., *tropezar* 'to trip', *stumble*

- **'Smooth motion'**: motion flows, no obstacle; e.g., *glide*, *slide*

- **'Leisurely motion'**: motion for pleasure; e.g., *pasear* 'to stroll', *hike*, *trek*

- **'No aim in motion'**: no special purpose; e.g., *vagar* 'to wander', *roam*, *saunter*

- **'Unsteady motion'**[11]: unbalanced motion; e.g., *totter*, *stagger.*

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[10] The manner category of 'Violent Motion' (e.g., *abalanzarse* 'to dash over in a violent way', *charge, plunge*) was included within 'Forced Motion' as it seems that all verbs denoting violent motion do encode forced motion as well. Moreover, two subcategories within 'Forced Motion' were created: (a) Energy-high, in order to account for verbs denoting violent motion, and (b) Energy-low, to account for other verbs denoting an effortful motion which is not violent (e.g., *trudge, plod*). We are grateful to Michele Feist for suggesting these two possible subcategories.

[11] In the light of our data, this manner category seems to pertain to both self-contained and translational motion.

- **'State of Figure'**: physical (e.g., injured) or psychological state (e.g., proud, careless, angry); e.g., *cojear* 'to limp, hobble', *contonearse* 'to walk swaying one's hips in a proud way', *traipse*, *stroll*, *swagger*

- **'Dance':** different ways of dancing, e.g., *bailotear* 'to dance in a careless way', *foxtrot*, *waltz*

- **'Vehicle/Instrument':** conveyance by means of an animal (e.g., *trot*, *gallop*) or of a vehicle (e.g., car (e.g., *drive*), boat, plane, skates, bike, etc)

- **'Contact between the Figure and the Ground':**
  o 'Body close to ground': *gatear* 'to crawl', *arrastrarse* 'to drag oneself on the ground', *grovel*, *creep*
  o 'Smooth Motion': *deslizarse*, *resbalarse* 'to glide, slide', *glide*, *slide*
  o 'Slight contact': *skim*, *skitter*

- **'Characteristic use of lower body'**
  o 'Length of Steps': information about the steps/jumps the Figure takes; e.g. *stride* (long steps), *scurry* (small short steps)
  o 'Shape of Legs': information about the Figure's legs; e.g. *goosestep* (legs lifted high and straight)
  o 'Gradual stages/steps': *edge*, *inch*

- **'Use of one's Hands/Legs'**: whether the Figure's hands are also involved in the motion; e.g., *trepar* 'to climb', *crawl*, *climb*, *vault*

- **'Motion in file'**: *desfilar* 'to parade, to march', *parade*

- **'Motion in sports'**: *regatear* 'to dribble', *dribble*

- **'Joyful, playful motion'**: e.g., *scamper*, *frolic*

- **'Uncontrolled motion'**: motion without control; e.g., *career*, *careen*, *skid*

- **'Awkward motion'**: *shamble*

- **'Noisy motion'**: noisy way of moving; e.g., *zapatear*, *taconear* 'to walk/to dance tapping shoes', *roar*, *shuffle*, *stamp*

As we saw in Chapter 4, the manner categories listed from 'Path-shape' to 'State of the Figure' are drawn from Ibarretxe-Antuñano (2006a), Özçaliskan (2004) and Slobin (2000). The remaining categories, from 'Dance' to 'Noisy motion', are

our own additions in order to account for the semantic specificity of the manner verbs in our corpus.

When looking at the sorts of semantic components conflated in verbs, we first and foremost based our decisions on definitions taken from the dictionaries cited above, though my own introspection as a native speaker of Spanish and introspections of some English informants were also taken into account. Only dictionary definitions of physical or actual motion were of interest for our research purposes, leaving fictive motion (e.g., Talmy, 2000a: 90; Langacker, 1987; Matsumoto, 1996; Rojo & Valenzuela, 2003) and metaphorical senses (e.g., Özçalişkan, 2002, 2004) aside. When the majority of the dictionaries did not agree[12] about the semantic information that the verb denotes, such information was not included in our semantic encoding; for example, the verb *tear* is defined as violent motion (Manner) only in two out of five sources (i.e., Oxford English Dictionary and Merriam-Webster Online), with the result that this semantic information was not coded for this verb. Moreover, we often took into consideration a verb's etymology in order to better understand its semantics and, quite often, its composite nature. For instance, the Spanish verb *adentrarse* 'to go into/inside' comes from *a* ('to') + *dentro* ('inside'), and has thus been analysed as conflating Motion + Path; *despeñar(se)* 'to (cause to) fall down from a rock' comes from *des* ('from') + *peña* ('rock'), and has been analysed as conflating Motion + Path + Ground. With regard to the etymology of English motion verbs, both the *Oxford English Dictionary* and *Merriam-Webster Online* provided us with such information. In the case of Spanish motion verbs, we resorted to Cifuentes-Honrubia (1999), who draws from Corominas & Pascual's (1984) *Diccionario crítico-etimológico castellano e hispánico*, and to the two Spanish monolingual dictionaries, *Diccionario de uso del Español* and *Diccionario de la lengua española*, which also offer the etymologies of words.

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[12] By agreement across dictionaries, we generally mean 3 of 5 sources for English (4 dictionaries: CALD, TFD, MW, OED, and 1 thesaurus: LLA) and 2 of 2 dictionaries for Spanish (DUE, DRAE). The reader should note that LLA is a thesaurus which was just used for human locomotion verbs; it fails to include many other motion verbs. Moreover, some of the dictionaries do also often fail to incorporate definitions for some of the English motion verbs. When that was the case, we based our analysis on the available dictionary definitions.

For verbs that have multiple dissimilar meanings (i.e., they conflate different semantic information) separate numbered entries are created. For example, *stalk* has two separate meanings: *stalk*1 'to go stealthily to, towards (an animal) for the purpose of killing or capturing it' (OED) and *stalk*2 'to march proudly' (OED). For ease of analysis, each numbered verb entry counts as a verb; *stalk*1 is counted in the group of furtive motion verbs, whereas *stalk*2 in the group of verbs encoding the Figure's mental state.

The eighth and ninth columns include definitions taken from monolingual dictionaries and a thesaurus for English which were used when compiling our corpus of motion verbs. Moreover, syntactic behaviour provided by the dictionaries was included in those columns, namely, whether the verbs were intransitive, transitive or pronominal verbs. Pronominal motion verbs are abundant in the Spanish motion verb lexicon. They are intransitive verbs accompanied by the reflexive pronoun 'se'. The reflexive pronoun can either (a) denote that the Figure is acting on itself (e.g., *acercarse* 'to move oneself closer to', *zambullirse* 'to dive oneself into'; posture verbs such as *acostarse* 'to lay oneself down' and *levantarse* 'to get (oneself) up') or (b) just add emphasis to their meanings (e.g., *irse* 'to go away', *caerse* 'to fall down'). All motion verbs (a) which can be both pronominal (i.e., self-agentive) and transitive (i.e., agentive, caused motion), and (b) whose reflexive pronoun 'se' is used for emphatic purposes were listed with the 'se' in brackets (e.g., *levantar (se)* 'to raise, to rise', *agitar (se)* 'to shake, to shake oneself'). Those verbs that are strictly pronominal verbs, are shown with the reflexive pronoun 'se' adjoined to the verb root (e.g., *adentrarse* 'to go into the deepest part of', *apresurarse* 'to hurry up').

Finally, the tenth column in our corpus spreadsheet displays the motor patterns with which, according to native speakers, human locomotion verbs are associated. For example, the English verbs *dash* and *dart* seem to be related to the motor pattern *run*, that is, the Figure seems to be running while dashing or darting. The data shown in this column come from a study on categorisation. This information, which constitutes a separate study, will be left out of the discussion of the corpus and will be taken up in detail in Chapter 6, Section 6.4.

5.2.4. Some problems and limitations

The research methodology faces some problems which need to be tackled before undertaking our enterprise. As we pointed out in the previous section, dictionaries do not always agree on their motion verb definitions; sometimes there is high variability in the sort of fine-grained details they are ready to include (as we saw above with the verb *tear*), whereas, on other occasions, some dictionaries include a verb sense which might not be found in any other dictionary. For example, the OED includes a sense for *traipse,* to walk in a trailing or untidy way, which is not found in any of our other sources. In general, our undertaking faces the impossibility of accounting for all the possible contexts of use that a verb might have—some of which are included in dictionary definitions. Consequently, we decided to take into account in our analysis those fine-grained details and those verb senses that were present in the majority of the dictionaries in order to more closely account for the semantic contribution of the verb itself.

Another related problem we dealt with is the difficulty telling apart (a) what a motion verb *encodes* or *lexicalises* and (b) what it is just *implied*, which is connected to our linguistic knowledge about how a given motion verb is used and to our semantic interpretation[13]. More often than not, dictionary definitions incorporate information about the types of Figures (animates, inanimates), Grounds (air, water, etc), manners of motion (rate, motor pattern) and trajectories (up, down, etc) which are usually associated with motion verbs, but this information does not necessarily amount to what is encoded or lexicalised in the verbs. By way of illustration, *dodder* and *toddle* are manner verbs which encode unsteady ways of walking; the former seems to imply that the Figure is normally an elder person, whereas the latter implies that the Figure is usually a toddler. However, these verbs may be used with Figures which are neither elderly people nor toddlers. Another good example is the verb *dive*; this verb seems to encode a headfirst downwards motion, which normally takes place

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[13] Talmy (1985: 59) notes that a meaning can be associated with a linguistic unit mainly by different processes; among them, lexicalisation and interpretation. In his own words, 'lexicalization is involved where a particular meaning component is found to be in regular association with a particular morpheme', whereas by interpretation he meant the process of interpreting the meaning of a lexical unit by drawing from 'present context and general knowledge'.

into water, but not necessarily. To solve this problem, we have attempted to code and capture that semantic information pertaining to motion which is kept constant throughout senses regardless of preferred Figures, Grounds, Manners and Paths. Thus, *dodder* and *toddle* are analysed as conflating Motion and Manner but not figural information; in the case of *dive*, the Ground (water) is not taken as being conflated in the verb.

Finally, as the reader might argue, our methodology has a main limitation: our semantic coding does not equal what might or might not be in speakers' mental representations of these verbs. We do not intend, by any means, to argue otherwise. The results from our analysis call for experimental research to test their psycholinguistic reality. On the whole, the semantic analysis of the English and Spanish motion verb lexicons offers a solid linguistic ground for further experimental research; our results raise some questions regarding what might or might not be in the speaker's mind. Obviously, a complete psycholinguistic validation of our findings falls outside the limits of this dissertation, which just explores the subdomain of human locomotion by using experimental methods.

5.3. General distribution: verb conflations

This section provides the answer to our first research question, specifically, *which semantic notions are conflated in English and Spanish motion verbs?* In this section, the different sorts of conflations found in our corpus are outlined and fully described. As we will see, in addition to path-conflating verbs and manner-conflating verbs, other lexicalisation patterns are found, though they seem to constitute minor patterns in both languages.

Motion verbs are grouped by taking into account (a) the number of semantic components lexicalised in each verb, and (b) the semantic information they encode. In terms of the number of semantic elements, motion verbs fall mainly into 4 groups: (1) Motion, (2) Motion + 1 semantic component, (3) Motion + 2 semantic components, and (4) Motion + 3 semantic components. In terms of the semantic

information motion verbs encode, the following verb conflations are found in our corpus of English and Spanish motion verbs:

a.   Motion

b.   Motion + Ground

c.   Motion + Figure

d.   Motion + Path

e.   Motion + Manner

f.   Motion + Cause

g.   Motion + Concurrent Result

h.   Motion + Path + Ground

i.   Motion + Manner + Ground

j.   Motion + Path + Manner

k.   Motion + Figure + Manner

l.   Motion + Cause + Manner

m.   Motion + Cause + Path

n.   Motion + Figure + Co-Motion

o.   Motion + Manner + Co-Motion

p.   Motion + Manner + Concurrent Result

q.   Motion + Path + Ground + Manner

r.   Motion + Cause + Path + Manner

5.3.1. English verbs

Table 5.1 summarises the general conflations found in the English motion verbs in our corpus. Verb conflations or lexicalisation patterns are grouped with regard to the number of semantic elements. Then, within each group, they are organised by their overall frequency, from most frequent types of lexicalisation patterns to the less frequent or non-existent patterns.

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NUMBER OF ELEMENTS	SEMANTIC ELEMENTS	VERBS	PERCENTAGE
1	Motion	1	0.27%
	TOTAL	**1**	**0.27%**
2	Motion + Manner	*276*	73.40%
	Motion + Path	*44*	11.70%
	Motion + Ground	4	1.06%
	Motion + Figure	2	0.53%
	Motion + Cause	2	0.53%
	Motion + Concurrent Result	1	0.27%
	TOTAL	**329**	**87.50%**
3	Motion + Path + Manner	20	5.32%
	Motion + Figure + Co-Motion	6	1.60%
	Motion + Manner + Ground	5	1.33%
	Motion + Path + Ground	5	1.33%
	Motion + Figure + Manner	4	1.06%
	Motion + Manner + Co-Motion	1	0.27%
	Motion + Cause + Path	1	0.27%
	Motion + Cause + Manner		
	Motion + Manner + Concurrent Result		
	TOTAL	**42**	**11.17%**
4	Motion + Path + Ground + Manner	3	0.80%
	Motion + Cause + Path + Manner	1	0.27%
	TOTAL	**4**	**1.06%**
	TOTAL	**376**	**100.00%**

Table 5.1. Semantic distribution of English motion verbs

Only one verb encoding the Motion component alone is found in our corpus: *move. Move* is a general motion verb that is defined in dictionaries (CALD, TFD, MW, OED) both as involving a change of posture (i.e., self-contained motion) and as involving a change of location (i.e., translational motion).

With regard to verbs that encode Motion plus a single additional semantic component (pertaining either to the main Motion event or to the Co-event), it is observed that two lexicalisation patterns are the most frequent in our corpus, namely path-conflating verbs (11.23% of verbs in the English corpus) and manner-conflating verbs (73.80% of verbs in the English corpus). We postpone an exhaustive analysis of these verbs until Sections 5.4 and 5.5 respectively, where we will delve into their

semantics by analysing them in terms of more fine-grained components. Besides these two types of verb conflations, the following minor patterns are also noted:

a.   Motion + Ground: *circuit, circulate, fly, hover.*

The verb *circuit* and *circulate* denote motion in/through/around a circuit (TFD, MW, OED). Merriam-Webster Online and the Oxford English Dictionary state that *circuit* and *circulate* come from Latin *circuitus* and *circulatus* (meaning to move in a circle). Thus, it seems that these verbs might be also analysed as coding information about the shape of the path followed during the motion. On the other hand, the verbs *fly* and *hover* indicate motion in the air (CALD, TFD, MW, OED); however, those verbs differ with respect to the type of motion they refer to. More concretely, *fly* implies translational motion whereas *hover* means to be suspended in the air and, thus, no translational motion is implied.

b.   Motion + Figure: *kick, nod.*

These verbs denote that a given body part is moving, in particular, the Figure's foot, feet or legs for *kick*, and the Figure's head for *nod.*

c.   Motion + Cause: *blow, drift.*

These verbs denote that a Figure is moved by external forces, either by a current of air or wind for both *blow* and *drift,* or by a stream of water as in the case of *drift* (CALD, TFD, MW, OED).

d.   Motion + Concurrent result[14]: *crash.*

This verb denotes motion whose result is the Figure's collision against/into the Ground (CALD, TFD, MW, OED).

In terms of verbs conflating two semantic components besides Motion, we found the following patterns:

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[14] As a reminder, Concurrent result is one of the types of relations which can hold between the main Motion event and the Co-event. According to Talmy, 'the Co-event results from – that is, is caused by – the main Motion event, and would not otherwise occur' (2000b: 49).

a.   Motion + Path + Manner: *charge, chase, climb, dive, lunge, plummet, plunge, pounce, rocket2, scram, skedaddle, slink, soar, stalk1, stampede, tail, thrust, track, trail, tumble.*

Overall, this group of verbs denotes information about the trajectory or direction of motion as well as about the ways in which the Figure moves[15]. *Charge, lunge, plunge* and *pounce* denote sudden motion towards the Ground, usually in a forceful, violent way and at a fast speed (CALD, TFD, MW, OED). *Plunge* and *lunge* can also exhibit agentive behaviour. *Thrust* denotes an effortful forward motion. *Chase, stalk1, tail, track* and *trail* denotes that the Figure is moving after another; *chase* denotes that the motion is fast, usually running (CALD, TFD, MW, OED), whereas *stalk1, tail* and *track* mean that the Figure follows the other Figure furtively, in a secretive fashion (CALD, TFD, MW, OED). Finally, *trail* denotes that the Figure is moving slowly behind or after the other Figure, usually in contact with the Ground (CALD, TFD, MW, OED). *Scram, slink, skedaddle* and *stampede* mean that the Figure is moving away from the Ground; *scram* and *skedaddle* denote that the Figure does it so at high speed, whereas *slink* denotes that the Figure moves in a furtive manner so as not to be noticed (CALD, TFD, MW, OED). In *stampede*, the Figure goes away quickly because it is frightened (MW, OED).

With regard to the vertical axis, that is, upward and downward motion, *dive* means to move down headfirst into water or on other Ground in a precipitous way (CALD, TFD, MW, OED). *Plummet* and *tumble* denote downwards motion; the former being performed at a high speed (CALD, TFD, MW, OED), and the latter characterised by falling down quickly without control (CALD, MW, OED). *Rocket2* and *soar* depict quick upwards motion (TFD, MW, OED), whereas *climb* denotes that the Figure moves up, onto the Ground in a clambering fashion, i.e., use of one's

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[15] This group of verbs is one of the most interesting for future experimental research. In Chapter 4, we argued that it is not clear for many verbs whether they encode both Path and Manner or whether they just encode Manner, with Path merely implied, as these verbs typically occur with certain trajectories. Naming and typicality judgment tasks using visual dynamic stimuli with changed paths and changed manners might help to unveil the semantic nature of this set of verbs. For example, would an event be labelled by *dive* or judged as typical of *diving* if (a) the Figure does not move in a rapid, high energetic way and (b) if the Figure does not follow a downwards path?.

hands and legs (CALD, TFD, MW, OED). As Jackendoff (1985: 279) noted, *climb* encodes both Path (upward motion, to the top of, onto) and Manner (clambering), but 'any of them may be missing in any particular case'. Thus, either of the two semantic features is sufficient to label an event as climbing.

b.   Motion + Figure + Co-Motion[16]: *accompany*, *conduct*, *convoy*, *escort*, *guide*, *lead*.

These verbs belong to Levin's (1993) accompany verbs. They depict Co-Motion as one person (Figure) is taking a second from one place to another, thus implying translational motion. The verb *convoy* was included in Levin's Vehicle verbs; however, according to CALD, TFD, MW and OED, this verb does not encode a specific vehicle but a group of vehicles or of people travelling together.

c.   Motion + Manner + Ground: *moonwalk1*, *paddle1*, *swim*, *wade*, *waft*.

Moonwalk, in one of the two senses provided in our corpus, means to walk on the moon [Ground] (TFD, OED). *Paddle1*, *swim* and *wade* encode particular ways of moving in water [Ground]. *Swim* is the most general in meaning as it just denotes that the Figure adopts a given body position to perform such action; such body position is dependent on the somatic characteristics of the Figure (CALD, TFD, MW, OED). *Paddle1* is the American word for British *wade*, but they are not defined in the same way. *Wade* denotes to walk in water with some difficulty (CALD, TFD, MW, OED), whereas dictionaries state that *paddle1* denotes playful motion in water (CALD, TFD, MW, OED). *Waft* denotes smooth motion through air [Ground], which can be both non-agentive and agentive motion (CALD, TFD, MW, OED).

d.   Motion + Path + Ground: *disembark*, *embark*, *emigrate*, *immigrate*, *land.*

According to Merriam-Webster Online and the Oxford English Dictionary, all these verbs but *land*, which comes from Old English, seems to have come to the English language through Middle French verbs, which in turn come from Latin verbs (*des-*

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[16] Talmy does not include this sort of Co-event relation in his theory. In light of our data, we decided to create the category Co-Motion to refer to those Co-events in which there is one or more Figure moving.

em-barca, *em-barca*, *e-migrāre*, *in-migrāre*). These verbs generally consist of a prefix encoding the trajectory of motion plus a noun (*barca* 'ship') or another verb (*migrāre* 'to change one's residence, to go from one place to another'). Thus, the verbs *disembark* and *embark* denote, respectively, to leave a ship and to get onto a ship or a vessel [Ground] (TFD, MW, OED). *Emigrate* and *immigrate* denote motion away from one's country [Ground] and motion into another country respectively (TFD, MW, OED); moreover, *immigrate* can denote agentive motion. *Land* denotes motion to/towards the ground, which is seen as the endpoint of the motion; moreover, this verb often implies that the Figure was moving through the air before landing, but a Figure can also land from a ship, or land after leaping (CALD, TFD, MW, OED). Consequently, *land* does not seem to encode any particular manner of motion.

e.   Motion + Figure + Manner: *trample, tread, stamp, step*.

This group of verbs denotes motion of body parts (foot, feet and/or legs) in specific manners. According to dictionaries, *trample*, *tread* and *step* denote or imply that the Figure is walking while performing these actions, whereas in *stamp* the Figure is not necessarily walking (CALD, MW, OED). *Stamp* seems to also add information about the Figure's angry state (CALD). Moreover, *trample*, *stamp* and *tread* denote a sort of forceful, violent motion when putting one's feet down onto something, which thus, can cause damage, as in *trample* (CALD, TFD, MW). In contrast, *step* seems to refer to the action of moving by lifting your foot or feet and settng it/them down again, that is, to go on foot or to walk (CALD, TFD, MW, OED); thus, *step* might be said to be more general in meaning than *trample*, *stamp* and *tread*.

f.   Motion + Manner + Co-Motion: *outrun*.

This verb means that the Figure runs farther or faster [Manner] than another Figure that is moving at the same time [Co-Motion] (CALD, TFD, MW, OED).

g.   Motion + Cause + Path: *topple*.

Unlike many verbs depicting unsteady motion, this particular verb denotes that the Figure falls down as result of its loss of balance [Cause] (CALD, TFD, MW, OED).

Topple may depict self-agentive and non-agentive motion as well as an agentive motion (caused motion).

Our corpus of English motion verbs does not include the following patterns: Motion + Path + Ground, Motion + Cause + Manner, Motion + Manner + Concurrent Result. These three patterns, as we will see in the following subsection, are realised in some Spanish verbs.

Finally, four verbs are found in two distinct types of conflations encoding three semantic components besides the fact of Motion:

a.   Motion + Path + Ground + Manner: *skydive*, *ford*, *swoop*.
Skydive refers to the action of a person jumping [Manner] from an aircraft and falling [downwards Path] through the air [Ground] for as long as possible before opening a parachute (TFD). Also encoding air or sky as Ground, *swoop* denotes a quick motion [Manner] through the air especially down [Path] from a height (CALD, OED). Finally, *ford* means to cross [Path] a body of water [Ground] by wading or walking [Manner] (CALD, TFD, MW, OED) with some difficulty (MW, OED).

b.   Motion + Cause + Path + Manner: *flee*.
This verb can denote a physical or non-physical cause (especially, danger) that originates the Motion event; thus, this verb means that the Figure runs in any direction away from the Ground (danger) (CALD, TFD, MW, OED).

5.3.2. Spanish verbs

Table 5.2 summarises the general verb conflations found in our corpus of Spanish motion verbs. Verb conflations are grouped with regard to the number of semantic elements (i.e., one, two, three or four), and within each group, they are ranked by frequency.

NUMBER OF ELEMENTS	SEMANTIC ELEMENTS	VERBS	PERCENTAGE
1	Motion	4	1.56%
	TOTAL	**4**	**1.56%**
2	Motion + Manner	*123*	*47.86%*
	Motion + Path	*63*	*24.51%*
	Motion + Ground	9	3.50%
	Motion + Figure	6	2.33%
	Motion + Concurrent Result	3	1.17%
	Motion + Cause		
	TOTAL	**204**	**79.38%**
3	Motion + Path + Manner	15	5.84%
	Motion + Path + Ground	12	4.67%
	Motion + Manner + Ground	8	3.11%
	Motion + Figure + Manner	4	1.56%
	Motion + Cause + Manner	4	1.56%
	Motion + Figure + Co-Motion	3	1.17%
	Motion + Manner + Concurrent Result	1	0.39%
	Motion + Manner + Co-Motion		
	Motion + Cause + Path		
	TOTAL	**47**	**18.29%**
4	Motion + Path + Ground + Manner	2	0.78%
	Motion + Cause + Path + Manner		
	TOTAL	**2**	**0.78%**
	TOTAL	**257**	**100.00%**

Table 5.2. Semantic distribution of Spanish motion verbs

Four verbs encoding the Motion component alone were found in our corpus: *mover(se)* 'to move, to move oneself', *menear(se)* 'to (cause to) move', *mudarse* 'to go from one place to another', *trasladar(se)* 'to (cause to) move from one place to another'. *Mover(se)*, much like English *move*, is a general motion verb that is defined in dictionaries both as involving a change of posture (i.e., self-contained motion) and as involving a change of location (i.e., translational motion). Furthermore, *mover* is the agentive version of the verb, whereas *moverse* the self-agentive and non-agentive version; these types of motion are both lexicalised in English *move*. In contrast to

move, by definition, *menear(se)* seems to encode self-contained motion (usually motion of a body part without any change of location of the Figure) whereas *mudarse* and *trasladar(se)* encode translational motion, that is, the Figure moves from one place to another. It could be argued that these two translational motion verbs imply/encode motion away from the Ground, that is, the Figure goes away from a first location in order to get to another location. If that meaning is truly encoded in the verbs, then these two verbs might be better characterised as path verbs.

In terms of verb conflation of Motion plus one additional semantic component, path-conflating verbs and manner-conflating verbs are the most frequent in our Spanish corpus as well as in our English corpus. As we noted for English, Spanish verbs also encode some minor patterns:

a.   Motion + Ground: *atajar* 'to go somewhere by taking a short cut (Spanish *atajo*)', *bordear* 'to skirt, to go along the edge (Spanish *borde*) of', *circular* 'to move along a given path, go in a circuit', *costear* 'to sail along the coast (Spanish *costa*), to move along the edge of', *fondear* 'to move at the bottom (Spanish *fondo*) of the sea', *llanear* 'to move, walk or cycle on a flat terrain (Spanish *llano*)', *recorrer* 'to move, go around a place', *transitar* 'to go along a place or way', *volar* '(of animates, inanimates) to move through the air, to fly'.

Within this pattern, *atajar*, *bordear*, *costear*, *fondear* and *llanear* conflate Ground in a quite transparent way, at least to Spanish speakers. These verbs are denominal verbs which specify where the motion is taking place but no further information about the path or the manner of motion seems to be conveyed. On the other hand, *circular*[17], *recorrer* and *transitar* denote motion around, over, or along an area which remains unspecified and thus, needs overt expression in the utterance. Last, *volar* encodes motion through the air. Since *volar* applies to both animates and inanimates,

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[17] As we remarked for English *circuit* and *circulate*, Spanish *circular* also comes from a Latin verb, *circulāris*, which denotes motion in a circle. Consequently, it could have been analysed as conflating a circular path shape instead of Ground.

the Figures would determine the manner of motion, and the verb was thus not coded as a manner verb.

b.　　　Motion + Figure: *aletear* 'to flap, to flutter, to wriggle', *cabecear* 'to move or to shake one's head', *cocear* '(of a horse, donkey) to kick', *codear* 'to move your elbow, to nudge', *colear* and *rabear* '(of an animal) to move its tail, to wag).

The motion verbs in this group are also denominal verbs which transparently incorporate the body part [Figure] engaged in motion. For example, *ala* 'wing' or *aleta* 'fin' in *aletear*; *cabeza* 'head' in *cabecear*; *cola* and *rabo* 'tail of an animal' in *colear* and *rabear*, etc.

c.　　　Motion + Concurrent result: *chocar* and *estrellar(se)* 'to (cause to) crash', and *colisionar* 'to crash'.

These verbs of motion conflate the result of the Motion event, that is, the collision between the Figure and the Ground takes place as result of the Figure's motion. *Chocar* and *estrellar(se)* can depict self-agentive, non-agentive and also agentive motion, whereas *colisionar* does not seem to be used agentively.

Unlike the English corpus of motion verbs, our Spanish corpus does not have any verb conflating Motion + Cause.

Regarding the conflation of fact of Motion and two other semantic components, the following patterns are observed:

a.　　　Motion + Path + Manner: *abalanzarse* 'to dash to', *acechar* 'to stalk', *desandar* 'to walk back to a previous path', *echar(se)1* 'to (cause to) move towards', *escabullirse* 'to slip away', *escapar(se)* 'to escape', *fugarse* 'to flee, to run away', *gatear2* 'to climb like a cat', *huir* 'to flee', *invadir* 'to invade', *posarse* 'to alight', *precipitar(se)1* 'to (cause to) fall down from a high place', *precipitarse2* 'to run, to hurry to', *rastrear2* 'to track', *trepar* 'to climb'.

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Abalanzarse, *echar(se)1*, *precipitarse2* and *posarse* encode motion directed towards the Ground. The first three verbs denote forceful, high-energy motion, whereas the latter encodes that the Figure is flying and ends up or alights on the Ground. *Escabullirse*, *escapar(se)*, *fugarse* and *huir* denotes motion away from the Ground either in a furtive manner so as not to be noticed (*escabullirse*) or in a rapid motion (*escapar(se)*, *fugarse*, *huir*). *Rastrear* and *acechar* encodes furtive or secretive motion after the Ground. *Invadir* denotes violent motion into the Ground (conceptualised as a container). *Desandar* means to walk back to a previous path. *Gatear2* and *trepar* denote upward motion while using one´s hands and legs. It is interesting to note that the verb *gatear2* appears to make use of an animal name, i.e., *gato* 'cat', to refer to the use of one's hands and legs in climbing. Last, *precipitarse1* encodes a downwards path of motion from a high place to a lower one.

b.   Motion + Path + Ground: *aterrizar* 'to land', *desembarcar* 'to (cause to) disembark', *despeñar(se)* 'to (cause to) fall down from a rock', *embarcar(se)* 'to (cause to) go on board', *emigrar* 'to emigrate', *exiliar(se)* and *expatriar* 'to (cause to) leave one's country; to exile', *inmigrar* 'to immigrate', *naufragar* '(of a ship, people in a ship) to sink', *repatriar* 'to repatriate', *sumergir(se)* 'to (cause to) go down into water', *vadear* 'to wade, to ford a river'.

Most of these verbs express the Ground in the verb root in an obvious way. As was the case for some English motion verbs encoding Path + Ground, Spanish ground-conflating verbs also come from Latin and are made up of Latin path prefixes plus nouns (Grounds): *aterrizar* – towards the ground (Spanish *tierra*); *desembarcar* – out of or down from a ship (Spanish *barco*, *barca*); *despeñar* – down from a rock (Spanish *peña*); *expatriar* – away from one´s country (Spanish *patria*), *repatriar* – back to one's country. In contrast, we find other verbs[18] which encode Path and Ground as well, but less transparently: *emigrar*, *inmigrar*, meaning that the Figure moves away from and towards one's country respectively; *naufragar* and *sumergirse* which denotes downwards motion into water, and *vadear*, which means to cross a river.

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[18] These verbs are also from Latin origin: emigrāre, immigrāre, naufragāre, submergēre.

c. Motion + Manner + Ground: *callejear* 'to walk around the streets', *ladear* 'to move on the hillside', *planear* '(of a plane, a bird) to glide', *bucear* 'to dive, swim down under water', *nadar* 'to swim', *chapotear* 'to move noisily in water/mud', *rastrear1* 'to fly along at ground level', *revolotear* 'to (cause to) fly around, to flutter'.

Planear, *rastrear*, *revolotear* denotes that the Figure is moving through the air; the first verb describes smooth motion, the second motion along and close to the ground, and the third encodes motion around, in circles. *Bucear*, *nadar* and *chapotear* denotes motion in and on water; *nadar* is the least specific semantically and expresses that the Figure moves in water in a manner which is dependent on the Figure's species. *Bucear* denotes swimming under water (i.e., the Figure's body is submerged), and *chapotear* refers to the Figure's noisy motion which is taking place either in water or mud. *Callejear* means to walk around the streets (Spanish *calle*) with no special aim in the motion, and *ladear* to walk on the hillside (Spanish *ladera*). These two verbs are denominal verbs which denote that the Figure walks [Manner] around, over, or on the Ground.

d. Motion + Figure + Manner: *patalear* and *patear1* meaning 'to stamp one's feet showing one is angry', *pisar* 'to tread', *pisotear* 'to tread repeatedly and violently over something'.

This group of verbs involves one's foot or feet as Figure which moves in distinct manners. *Pisar* seems to be the most general in meaning, just denoting the motion of each foot when the Figure is walking. *Patalear* and *patear1* encode the angry attitude of the Figure as shown by the stamping of its feet, and *pisotear* depicts iterative and effortful motion of one's feet when treading over something.

e. Motion + Cause + Manner: *espantar(se)* 'to (cause to) run away as a result of being frightened', *merodear* 'to walk around, to prowl', *patrullar* 'to patrol', *rondar* 'to be on patrol, to prowl about, around'.

Espantarse denotes the Figure's runaway after being frightened. Thus, this verb encodes the onset causation of motion, that is to say, it precedes the motion event and

influences the Figure's state of mind and its manner of motion. *Merodear*, *patrullar* and *rondar* denote motion with a specific purpose which has been considered as a non-physical cause; specifically, to look for something, to nose or to spy in *merodear* and to watch over a person or a place in *patrullar* and *rondar*. Moreover, *merodear* and *rondar* denote that the Figure is walking, whereas *patrullar* denotes motion in a vehicle (patrol car).

f.   Motion + Figure + Co-Motion: *acompañar* 'to accompany', *escoltar* 'to escort', *guiar* 'to guide, lead the way'.

These verbs depict Co-Motion as the Figure is taking a second from one place to another. Thus, they imply translational motion as well.

g.   Motion + Manner + Concurrent Result: *atropellar* 'to run over'.

This verb encodes that the Figure's motion results in running over something or someone. The Figure could be either someone driving a vehicle or the vehicle itself.

Unlike the English verb *outrun*, which conflates Motion + Manner + Co- Motion, no Spanish verb is found in our corpus which expresses this semantic information.

Finally, two verbs which encode three semantic components beside the fact of Motion are found in our corpus: *capuzar(se)* 'to (cause to) dive in', and *zambullir(se)* 'to (cause to) go down into water in a violent way'. These verbs are agentive verbs which are made self-agentive by incorporating the reflexive pronoun 'se'. They conflate Motion + Path + Ground + Manner. In both uses, the verbs denote that the Figure goes down [Path] into water [Ground] in a sudden, high-energetic way [Manner]. No further information about the Manner of motion is given; thus, the Figure could go down into water headfirst (as it seems to be implied) or in another way (e.g., in a standing up position).

5.3.3. Discussion and Conclusions

In terms of the number of conflated elements, the greater part of the motion verbs in our corpus (87.50% of English motion verbs and 79.38% of Spanish motion verbs) encodes one additional semantic component besides the fact of Motion, whereas (a) verbs expressing just Motion (0.27% for English and 1.56% for Spanish), (b) verbs conflating two semantic elements (11.17% for English and 18.29% for Spanish), and (c) verbs conflating three semantic elements (1.06% for English and 0.78% for Spanish) are much less prevalent. For that reason, it might be concluded that the conflation of Motion plus one semantic component is the most characteristic or typical of both motion verb lexicons. In contrast, verbs expressing just Motion and verbs conflating either two or three semantic elements might be said to be less representative. This supports Talmy's (1985: 76) observation that a '[c]onflation systems of […] multi-component sort apparently never form a language's major system for expressing Motion'.

In terms of the semantic information English and Spanish motion verbs encode, with a few exceptions, similar lexicalisation patterns have been found across the two languages. English and Spanish motion verbs seem to be able to encode a wide range of semantic information pertaining both to the main Motion event and to the Co-event (i.e., Manner, Cause, Co-Motion, Concurrent Result, etc). The majority of the lexicalisation patterns attested in our corpus of motion verbs seems to involve minor patterns in these languages, that is to say, they are not characteristic or typical for either English or Spanish. In other words, Motion + Figure (cf. Atsugewi as documented by Talmy, 2000), Motion + Ground, Motion + Cause and more complex conflations of Figure, Ground and Co-events relations do exist in English and Spanish, but they do not appear to form the core system for expressing Motion in these languages. However, as shown in Tables 5.1 and 5.2, both path-conflating verbs and manner-conflating verbs are the most frequent in our corpus and represent a high portion of the motion verb lexicon (320 English verbs, i.e., 85.33% of the English motion verbs, and 186 Spanish verbs, i.e., 72.37% of the Spanish motion verbs). As a result, these two lexicalisation patterns might be said to be characteristic of both English and Spanish. In both languages, manner verbs outnumber path verbs. Within verb types, English manner verbs surpass Spanish manner verbs (276 -

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73.80% vs. 123 verbs - 47.86%), but Spanish path verbs outnumber English path verbs (63 verbs - 24.51% vs. 44 verbs - 11.70%, respectively).

Other crosslinguistic differences are to be found in the lack of verbs encoding some minor patterns in one language which are found in the other. In particular, our English corpus does not include the two following lexicalisation patterns: (a) Motion + Cause + Manner, as in Spanish *espantar(se)* 'to (cause to) run away as result of being frightened', and (b) Motion + Manner + Concurrent Result, as in Spanish *atropellar* 'to run over something or somebody while driving a vehicle'. On the other hand, no Spanish verb is found which expresses (a) Motion + Cause, as in English *drift* and *blow*; (b) Motion + Manner + Co-Motion, as in English *outrun*; (c) Motion + Cause + Path, as in English *topple*, and (d) Motion + Cause + Path + Manner, as in English *flee*.

The most important crosslinguistic difference resides in the greater tendency of the Spanish language (compared with English) to express the Ground of motion in verbs, either conflated with Motion alone or with additional semantic elements. Talmy (1985: 75-76; 2000b: 60-61) noted that the Ground does not by itself conflate with the Motion verb to form any language's core system for expressing Motion and that conflations of this type 'might not even form any minor system'. He speculated that the explanation might be sought in a concept of hierarchy, that is, the different lexicalisation patterns seem 'to be ranked in their prevalence among the world's languages, with conflation of Path as the most extensively represented, of Manner/Cause next, and of Figure least so'. Apparently, Ground conflation is also a possibility among languages, but he argues that '[it is] so unlikely that it has not yet been instantiated in any language' (Talmy, 2000b: 61). Our data, however, seem to challenge Talmy's remarks; English and Spanish both have some motion verbs conflating Ground. Even though it seems to be a minor pattern in those languages (12.06% in the Spanish corpus of motion verbs, and 4.55% in the English), their presence should not be overlooked.

Table 5.3 includes English and Spanish ground-conflating verbs (grouped into four different patterns) as well as the number of verbs per pattern and their total percentage per language in our corpus.

CONFLATIONS	SPANISH		ENGLISH	
	VERBS	#	VERBS	#
Motion + Ground	*atajar* 'to go somewhere by taking a short cut', *bordear* 'to skirt, to go along the edge of', *circular* 'to move along a given path, go in a circuit', *costear* 'to sail along the coast, to move along the edge of', *fondear* 'to move at the bottom of the sea', *llanear* 'to move, walk or cycle on a flat terrain', *recorrer* 'to move, go around a place', *transitar* 'to go along a place or way', *volar* 'to move through the air, to fly'	9	*circuit, circulate, fly, hover*	4
Motion + Path + Ground	*aterrizar* 'to land', *desembarcar* 'to (cause to) disembark', *despeñar(se)* 'to (cause to) fall down from a rock', *embarcar(se)* 'to (cause to) go on board', *emigrar* 'to emigrate', *exiliar(se)* and *expatriar* 'to (cause to) leave one's country; to exile', *inmigrar* 'to immigrate', *naufragar* '(of a ship, people in a ship) to sink', *repatriar* 'to repatriate', *sumergir(se)* 'to (cause to) go down into water', *vadear* 'to wade, to ford a river'.	12	*disembark, embark, emigrate, immigrate, land*	5
Motion + Manner + Ground	*callejear* 'to walk around the streets', *ladear* 'to move on the hillside', *planear* '(of a plane, a bird) to glide', *bucear* 'to dive, swim down under water', *nadar* 'to swim', *chapotear* 'to move noisily in water/mud', *rastrear1* 'to fly along the ground level', *revolotear* 'to (cause to) fly around, to flutter'	8	*moonwalk1, paddle1, swim, wade, waft*	5
Motion + Path + Ground + Manner	*capuzar(se)* 'to (cause to) dive in', *zambullir(se)* 'to (cause to) go down into water in a violent way'	2	*skydive, ford, swoop*	3
	TOTAL	31		17
	PERCENTAGE OF MOTION VERB LEXICON	12.06%		4.55%

Table 5.3. English and Spanish verbs conflating Ground

Though the Spanish motion verbs in our corpus incorporating Ground outnumber those of English, no significant difference is found in the distribution of Ground conflation types across languages (*Chi-square* (3) = 1.7652, p > 0.05). That is to say, the two languages do not differ in how they distribute their verbs into the four

Ground conflation types. As has been noted earlier, Spanish ground-conflating verbs are, to a certain extent, transparent in their composite nature. Most of these verbs come from Latin verbs which were made up of nouns, preceded by prefixes encoding Path (e.g., *aterrizar*, *desembarcar*, *embarcar(se)*, *expatriar*, *repatriar*) (cf. Cifuentes-Honrubia, 1999). In contrast, our corpus of English verbs contains less verbs encoding Ground, and in most cases these verbs come from Anglo-French and Middle French, which were from Latin origin as well, either coming from nouns without path prefixes (e.g., *circuit*, *circulate*) or from nouns with path prefixes (e.g., *disembark*, *embark*). On other occasions, both English and Spanish ground-conflating verbs appear to be derived from nouns, such as Spanish *atajar*, *bordear*, *costear*, *fondear*, *llanear*, *callejear* and *ladear*, and English *land*, *moonwalk* and *skydive*.

5.4. Path verbs

In this section, we address the following general research question: *Do English and Spanish have comparable path verb lexicons?* This question unfolds into two further questions: *Are the two path lexicons comparable in size?* And *Are the two path lexicons comparable in their semantic nature?* The former calls for quantitative data, and has been answered covertly in the previous section; specifically, as shown in the general distribution of English and Spanish motion verbs in our corpus, a total of 63 Spanish path verbs *versus* 44 English path verbs have been identified. Consequently, it seems that the Spanish path verb lexicon is larger and thus, it might be richer or more varied than the English path verb lexicon. However, qualitative data are needed before we can draw such a conclusion. It might be the case that both languages encode similar sorts of path notions in their verbs, but Spanish might have a greater number of verbs expressing these notions. The other possibility is that Spanish verbs encode types of path which are not found in English verbs, thus, suggesting that the Spanish path verb lexicon is both larger in size and more varied in the path notions its verbs encode. This lead us to the latter research question, *Are the two path lexicons comparable in their semantic nature?*, which calls for a qualitative analysis

so as to unveil both (a) the sorts of path notions which are typically lexicalised in English and Spanish respectively, and (b) crosslinguistic similarities and differences in the semantics of path verbs. Therefore, this section mainly focuses on the semantic nature of path verbs in English and Spanish. Moreover, special attention is given to their etymology[19] as many path verbs in both languages come from Latin and, as a consequence, they might be expected to express the same sorts of path information.

Path verbs across languages have been clustered in terms of the types of path they express. Overall, 13 types of Path have been identified in our corpus:

- o To/towards G (arrival, endpoint)
- o Away from G (departure, source)
- o Into G (container)
- o Out of G (container)
- o Up/onto G - Upwards
- o Down /down from G – Downwards
- o Pass/cross G (traversal, milestone)
- o Closer to G
- o Forwards
- o Backwards
- o Change direction
- o Multiple directions from a unique start
- o After G

In the following two sections, we begin by exploring the types of paths which are most frequently lexicalised in the English and the Spanish path verbs in our corpus, we then, move on to deal with those which are less frequent.

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[19] To remind the reader, our sources for the etymology of verbs are *Merriam-Webster Online* and the *Oxford English Dictionary* for English, and *Diccionario del uso del español actual*, *Diccionario de la Real Academia de la Lengua Española*, and Cifuentes-Honrubia (1999), which draws on Corominas & Pascual (1984), for Spanish.

5.4.1. English path verbs

Table 5.4 summarises the distribution of English path verbs in terms of the aforementioned types of path, ranked by their frequency relative to the path lexicon.

TYPES OF PATH	ENGLISH	
	#	%
Away from G	11	25.00%
Up/Onto G - Upwards	5	11.36%
After G	4	9.09%
Change direction	4	9.09%
Down from/to G - Downwards	4	9.09%
To/towards G	4	9.09%
Back to G/ Backwards	3	6.82%
Pass/cross G	3	6.82%
Into G	2	4.55%
Closer to G	1	2.27%
Forwards	1	2.27%
Multiple directions	1	2.27%
Out of G	1	2.27%
TOTAL	44	100.00%

Table 5.4. Distribution of English path verbs

As shown in the table, some types of path are much more frequent than others in our corpus of English path verbs; for instance, the 'Away from G' type is the most frequent and the 'Out of G', 'Closer to G', 'Forwards' and 'Multiple directions from a unique start' are the least frequent. In order to examine the path verbs which express these types of paths, we begin with the most frequent types of path and end with the least frequent types:

a.   Away from G (departure, source) (11 verbs, 25% of English path verbs): *go, abandon, depart, desert, dodge2, escape, leave, recede, retire, retreat, stray*.

This group of verbs generally denotes motion away from the Ground. This translational motion can imply that (a) the Figures leaves the Ground (as direct object) behind, sometimes on its own and in a bad situation (e.g., *abandon, desert*);

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(b) the Figure is fleeing from the Ground in order to be free or to avoid danger (e.g., *escape*, *retreat*); (c) the Figure avoids the Ground by moving quickly to one side (*dodge2*) and (d) the Figure goes away from the intended path (*stray*). Within this group, only *retire* and *retreat* seem to be also used as agentive verbs.

Go, *depart* and *leave* seem to be the most general in meaning, as they seem to refer to the Figure's movement away, with no further implications (CALD, TFD, MW, OED). According to the Oxford English Dictionary, *go* is an intransitive verb of motion which has 3 basis senses: (a) the Figure is moving away from the speaker, or from the point at which he mentally places himself; (b) the Figure is moving towards a place which is not occupied by the speaker, and (c) the Figure is moving without regard to its point of departure or destination. Thus, *go* in (a) and (b) is a deictic path verb since it encodes motion away from the relative position of the speaker and seems to imply motion 'to/towards another place'. In contrast, *go* in (c) appears to act as a general motion verb without any specific path.

In terms of their etymology, *abandon* comes from Anglo-French *abanduner* (from (*mettre*) *a bandun*, which means 'to hand over, put in someone's control') (MW). *Desert* comes from Anglo-French, from Late Latin *desertum* (neuter of *desertus*, past participle of *deserere* 'to desert', which is formed by the prefix *de-* 'from, down, away' + *serere* 'to join together'). According to Merriam-Webster Online, the Latin prefix *de-* meant 'from, down, away'. It seems that by adjoining the prefix to the Latin verb root, it altered its meaning and evolved to 'move away from'. *Depart* also comes from Anglo-French *departir*, which in turn comes from *de-* + *partir* 'to divide' (from the Latin verb *partire*, from *part-*, *pars* 'part'). *Escape* comes from Anglo-French *escaper*, *eschaper*, from Vulgar Latin *excappare* = Latin *ex-* + Late Latin *cappa* 'head covering, cloak'. *Leave* comes from Old English *læfan* and *retire* from Middle French *retirer* (*re-* + *tirer* 'to draw'). *Recede* comes from Latin *recedere* 'to go back', which is made up of *re-* 'back, again' + *cedere* 'to go'. *Retreat* comes from Anglo-French *retrait*, past participle of *retraire* 'to withdraw', which originates from Latin *retrahere* = *re-* 'back, again' + *trahere* 'to draw'. Last, *stray* also comes from Anglo-French *estraier*, from Vulgar Latin *extravagare* = extra- 'outside' + *vagari* 'to wander'.

b.   Up/onto G – Upwards (5 verbs, 11.36% of English path verbs): *arise2*, *ascend*, *mount*, *rise1*, *scale*.

Arise2, *ascend* and *rise1* denote upwards motion relative to the earth. *Mount* can denote elevation and upwards motion, but also motion onto the Ground. On the other hand, *scale* seems to just denote motion up, onto the Ground. Regarding etymology, *scale* comes from Late Latin *scala* 'ladder, staircase' and it seems to have been related to Latin *scandere* 'to climb'; *ascend* comes from the Latin verb *ascendere* (*ad-*'to, near' + *scandere* 'to climb') and the rest are from Germanic origin.

c.   Down from/to G – Downwards (4 verbs, 9.09% of English path verbs): *descend*, *drop*, *fall*, *sink*.

These four verbs describe downwards motion with regard to the earth. *Descend* comes from Anglo-French *descendre*, which in turn originates from the Latin verb *descendere* (*de-* 'from, down, away' + *scandere* 'to climb'). Thus, both *descend* and *ascend* (see above) derive from the same Latin verb root, but their meanings are distinct by virtue of the prefixes which were adjoined to this root.

d.   Change direction (4 verbs, 9.09%): *divert*, *swerve*, *tack*, *turn2*.

This group of verbs denotes that the Figure changes its trajectory of motion. In the case of *tack*, the Figure typically seems to be a ship (TFD, MW, OED). From this group, only *divert* and *turn2* can display agentive behaviour (caused motion). In terms of their etymology, *divert* comes from Middle French *diverter* and Latin *divertere* 'to turn in opposite directions'.

e.   After G[20] (4 verbs, 9.09%): *follow*, *hound*, *pursue*, *shadow*.

These verbs denote that the Figure is moving behind or after another Figure. Apart from *follow*, which only seems to denote path, *hound*, *pursue* and *shadow* seem to imply more semantic information. For example, *hound* seems to emphasise the Figure's relentless pursuit of the second Figure (TFD); *pursue* seems to often imply that the chaser intends to capture or kill the second Figure (CALD, TFD, MW,

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[20] Another possible analysis would have been to code the path verbs within this category as conflating Co-Motion as well since there are at least two Figures involved in the motion event.

OED), but not necessarily; and *shadow* appear to imply secretive motion (TFD, MW). Within this group of verbs, only *pursue* appears to be of Latin origin (from Anglo-French *pursure*, *pursiure*, from Latin *prosequi = pro-* 'forward' + *sequi* 'to follow').

f. To/towards G (arrival, endpoint)(4 verbs, 9.09%): *arrive*, *alight*, *come*, *reach*. This group of verbs generally refers to the accomplishment of the Figure's movement towards the Ground. *Arrive* comes from Anglo-French *ariver*, which come from the Vulgar Latin verb *arripāre* (Latin *ad-* 'to' + *ripa* 'shore') 'to come to shore'. Nowadays, this path verb denotes that the Figure reaches its destination and seems to be close in meaning to *reach*. *Alight* also denotes that the Figure reaches the Ground, but appears to imply that the motion is down from an animal or vehicle (CALD, TFD, MW, OED). Finally, *come* is a deictic path verb as it denotes motion towards the speaker. According to the Oxford English Dictionary, *come* is a basic intransitive verb of motion which express movement towards or so as to reach the speaker, or the person spoken to. Moreover, this verb is also used to refer to the accomplishment of the movement involved in reaching.

g. Pass/cross G (traversal, milestone) (3 verbs, 6.82% of English path verbs): *cross*, *pass*, *traverse*.
According to MW and OED, the first verb comes from the Latin noun *crux* 'cross'; the second, from Anglo-French *passer*, whose origin is the Vulgar Latin verb *passāre* (from Latin *passus* 'step'); and the third comes from Anglo-French *travers* (as in *a travers*, *de travers* 'across'), which derives from the Latin adverb *transversum* (as in *in transversum* 'set crosswise'). Though these verbs do not come from Latin verbs encoding the notion of traversal and/or passing along or beyond a milestone, they nowadays denote such notions.

The verb *pass* deserves our special attention as it can denote 3 distinct types of paths according to our dictionaries: (a) to go by, past, beyond the Ground (seen as a reference point) (CALD, TFD, MW, OED) (b) to go across, through the Ground (seen as a two or three dimensional entity which can be traversed) (CALD, TFD, MW), and (c) to move forwards, to proceed or go on (CALD, TFD, MW, OED),

which denotes a 'Forward' type of path. On the other hand, *cross* and *traverse* denote motion across, through the Ground, which seems to be generally a two or three dimensional entity instead of a point in space.

h.   Back to G/Backwards (3 verbs, 6.82%): *back*, *return*, *recoil*.

This group of verbs, unlike many other English path verbs, does not seem to come from Latin. According to MW and OED, *back* comes from Old English whereas the other two come from Anglo-French; *return* = prefix *re-* 'back, again' + *turner* 'to turn', and *recoil* = *re-* 'back, again' + *cul* 'backside'. *Back* and *recoil* denote motion backwards, but no explicit reference to the trajectory towards the Ground seems to be conveyed by these verbs (CALD, TFD, MW, OED). In contrast, *return* denotes the Figure's trajectory back to an earlier location or place (CALD, TFD, MW, OED). *Back* and *return* can also be agentive verbs.

i.   Into G (container) (2 verbs, 4.55%): *enter*, *penetrate*.

The former comes from Anglo-French *entrer*, whose origin is the Latin verb *intrāre*, which comes from the adverb or preposition *intra* 'within'. The latter comes from the Latin *penetratus*, past participle of the verb *penetrāre*, from *penitus* 'deep within, far'.

j.   Out of G (container) (1 verb, 2.27% of English path verbs): *exit*.

This English verb comes from Latin *exire* 'to go out' = *ex-* (out) + *ire* (go) (MW, OED).

k.   Closer to G (1 verb, 2.27%): *approach*.

 This verb comes from Anglo-French *aprocher*, whose origin is the Late Latin verb *appropiāre*; this verb is made up of Latin *ad-* 'to' + *prope* 'near' (MW, OED).

l.   Forwards (1 verb, 2.27%): *advance*.

According to MW and OED, *advance* comes from Anglo-French *avancer*, from Vulgar Latin *abantiāre*, from Late Latin *abante* 'in front', from Latin *ab-*'to' + *ante*

'before'. This verb can display agentive behaviour as well (CALD, TFD, MW, OED).

m.   Multiple directions from a unique start (1 verb, 2.27% of English path verbs):
        scatter.

This is a self-agentive, non-agentive and agentive verb whose Figure is usually a group of entities, and denotes motion far apart in different directions (CALD, TFD, MW, OED).

5.4.2. Spanish path verbs

In Table 5.5 we present the distribution of Spanish path verbs in our corpus in terms of the types of path that these verbs encode.

TYPES OF PATH	SPANISH	
	#	%
Away from G	14	22.22%
To/towards G	8	12.70%
Up/Onto G - Upwards	8	12.70%
Down from/to G - Downwards	6	9.52%
Into G	6	9.52%
Back to G/ Backwards	4	6.35%
Change direction	4	6.35%
Closer to G	3	4.76%
Pass/cross G	3	4.76%
After G	2	3.17%
Forwards	2	3.17%
Multiple directions	2	3.17%
Out of G	1	1.59%
TOTAL	63	100.00%

Table 5.5. Distribution of Spanish path verbs

Some types of path are much more frequent than others in our corpus of Spanish path verbs; for instance, the 'Away from G' type is the most frequent, whereas the 'After

G', 'Forwards', 'Multiple directions', and 'Out of G' are the least frequent types. In our examination of Spanish path verbs, we begin with the most frequent path types as ranked in the table:

a.   Away from G (departure, source)[21] (14 verbs, 22.22% of Spanish path verbs): *abandonar* 'to abandon', *alejar(se)* 'to (cause to) move far away from', *apartar(se)* 'to (cause to) move away from', *desertar* 'to desert', *distanciar(se)* 'to (cause to) move away from', *esquivar* 'to avoid, to dodge', *ladear(se)* 'to (cause to) move away from', *largarse* 'to leave', *marcharse* 'to leave', *partir* 'to leave', *pirarse* 'to go away (informal)', *retirar(se)* 'to remove, to take away, to retreat', *zarpar* '(of a ship) to set off', *ir(se)* 'to go, to go away'.

This large group of verbs denotes motion away from the Ground. Some of these verbs can imply that (a) the Figure leaves the Ground behind, sometimes on its own and in a bad situation (e.g., *abandonar* 'to abandon', *desertar* 'to desert'); (b) the Figure avoids the Ground by moving quickly to one side (*esquivar* 'to dodge', *ladear(se)* 'to (cause to) move away from) and (c) the Figure initiates its motion away from the Ground (e.g., *largarse*, *marcharse*, *partir*, *pirarse* 'to leave' and *zarpar* '(of a ship) to set off').

The verb *ir(se)* deserves special attention. As DUE and DRAE suggest in their definitions, *ir(se)* can denote that (a) the Figure is moving away from the speaker in a given direction (especially to a place), and (b) the Figure is moving (in any manner, such as, on foot, vehicle, etc) without regard to its point of departure or destination, from one place to another. Thus, in (a), *ir(se)* is a deictic path verb since it encodes motion away from the relative position of the speaker, but it also can imply the path 'to/towards a place'. In contrast, *ir(se)* in (b) appears to act as a general motion verb without any specific path.

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[21] The Spanish motion verbs *mudarse* 'to go from one place to another' and *trasladar(se)* 'to (cause to) move from one place to another' were coded as general motion verbs (Section 5.4.1). As has already been pointed out, these two verbs might also be considered as path verbs denoting motion away from the Ground, as the Figure seems to leave a first location to get to another.

Regarding the etymology of this group of verbs, some verbs are from Latin origin, such as *apartar*, *partir* (from Latin *pars*, *parties* 'part'), and *ir(se)* (from Latin *ire* 'to go'), whereas others come from other sources. *Abandonar* comes from the French verb *abandoner*, which in turn comes from Germanic *banna* 'punishment order'; *marcharse*[22] seems to come from the French manner verb *marcher*; *pirarse*, an informal verb which means 'to go away', comes from Caló (i.e., dialect spoken by Spanish Gypsies); *zarpar* from the old Italian verb *sapare*. Moreover, *alejar(se)* appears to be derived from the adverb *lejos* 'far', thus, *alejar(se)* 'to (cause to) move far, away from'. Last, *distanciar(se)* is a denominal verb according to Cifuentes-Honrubia (1999); it comes from the noun *distancia* 'distance' (from the Latin noun *distantia*).

b. To/towards G (arrival, endpoint) (8 verbs, 12.70% of Spanish path verbs): *abordar* 'to approach', *acudir* 'to go to a specific place', *alcanzar* 'to reach', *arribar* '(of a ship) to reach port, to arrive', *atracar* '(of a ship) to reach port', *dirigir(se)* 'to lead something or someone to somewhere, to head to', *llegar* 'to arrive', *venir* 'to come (towards the speaker)'.

This group of verbs generally denotes the accomplishment of the Figure's movement towards the Ground. All, but two of these verbs are from Latin etymology. According to DRAE and Cifuentes-Honrubia (1999), *atracar* 'of a ship to reach port' comes from Arabic *taráqqa*, which meant the same. *Abordar* comes from *a + borde*, which comes from French *bord*. This verb denotes that the Figure moves closer and towards the Ground, which seems to be either a ship or a person. Also related to the motion of ships, *arribar* comes from the Latin verb *arripāre* (Latin *ad-* 'to' + *ripa* 'shore') 'to come to shore'. Unlike English *arrive*, Spanish *arribar* seems to have been restricted to motion of ships. *Acudir* comes from Latin *accurrere*, with the same meaning; *alcanzar* also comes from a Latin verb *incalciare*, but it underwent a change of prefix (DUE). *Dirigir(se)* comes from the Latin verb *dirigere*, whose meaning is not provided in any of our sources. *Llegar* comes from the Latin verb

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[22] In contrast to the Spanish manner verb *marchar* 'to march, to walk with regular steps', which seems to be influenced by French *marcher, marcharse* as pronominal verb seems to be devoid of any manner information.

plicāre, whose meaning was 'to fold'. To finish, *venir* (from Latin *venire*) is a deictic path verb which denotes that the Figure goes towards the place where the speaker is situated. According to DUE, when used as a pronominal verb, *venirse* denotes that the Figure leaves its prior location to go to where the speaker is.

c.   Up/onto G – Upwards (8 verbs, 12.70%): *ascender* 'to ascend', *elevar(se)* 'to (cause to) move upwards', *encaramar(se)* 'to (cause to) move up, to the top of', *encumbrar* 'to reach the top of', *escalar* 'to scale, to climb', *levantar(se)* 'to lift, to raise', *remontar* 'to go up, to swim up, to soar', *subir* 'to ascend, to (cause to) go up'

Encaramar(se), *encumbrar*, and *escalar* denote motion up/onto the Ground, in other words, the Figure gets up to or onto the Ground as the result of its translational motion. In contrast, *elevar(se)*, *levantar(se)*, *remontar* and *subir* denote upwards motion with respect to the earth and they do not necessarily denote that the Figure reaches any potential Ground. Regarding their etymology, except for *encaramar* (from Arabic *karama*), all these verbs come from Latin as well. *Ascender* comes from the Latin verb *ascendere* (*ad-*'to, near' + *scandere* 'to climb'); *elevar* from Latin *elevare* (DUE, DRAE) or from the Latin adjective *levis* 'light' (Cifuentes-Honrubia, 1999); *encumbrar* can be decomposed into the prefix *en* + *cumbre* 'peak, top of a mountain', from the Latin noun *culmen, -inis*, with the same meaning as the Spanish noun. *Escalar* comes from Latin *scalaris*. According to DUE and DRAE, *levantar(se)* comes from the participle of the Latin verb *levare*; however, Cifuentes-Honrubia (1999) associates this verb with the Latin adjective *levis* 'light'. *Subir* comes from the Latin verb *subire*, which can be descomposed into *sub* 'under' + *ire* 'to go', which denoted to go to a higher place from below (Cifuentes-Honrubia, 1999).

d.   Down from/to G – Downwards (6 verbs, 9.52% of Spanish path verbs): *bajar* 'to (cause to) go down', *caerse* 'to fall down', *derrumbar(se)* 'to (cause to) fall down', *descender* 'to (cause to) go down', *desplomar(se)* 'to (cause to) collapse', *hundir(se)* 'to (cause to) collapse, to sink'

These verbs denote either downwards motion relative to the earth or downwards motion from one place to another. All these verbs come from Latin (DUE, DRAE, Cifuentes-Honrubia, 1999): *bajar* comes from the Latin adjective *bassus* 'short, low'; *caerse* from *cadere*; *derrumbar(se)* from *derrupare*, which derived from *rupus* 'rock'; *descender* from Latin *descendere* (*de-* 'from, down, away' + *scandere* 'to climb'); *desplomar(se)* from *des-* + *plomo*, which derived from Latin *plumbum*; and *hundir(se)* from Latin *fundere* 'destroy, ruin'.

e. Into G (container) (6 verbs, 9.52%): *acceder* 'to gain access into', *adentrarse* 'to go into the interior part of', *encerrar(se)* 'to put something, someone or oneself into an enclosed place', *entrar* 'to enter', *penetrar* 'to enter', *profundizar* 'to get into'

All verbs lexicalising this type of path are from Latin origin (e.g., verbs, prefixes + verbs, prefixes + adverbs, adjectives). *Acceder* comes from Latin *accedere* 'to move closer to', but its meaning seems to have evolved from 'to move close to' to 'to enter'. *Adentrarse* comes from the adverb *adentro* whose etymological origin is that of *ad-* 'to' + *deintro* 'interior, inside'. *Encerrar(se)* comes from *en* + *cerrar*, which derive from the Latin prefix *in-* and the Vulgar Latin verb *serrāre* 'to close'. Like the English path verbs *enter* and *penetrate*, Spanish *entrar* comes from Latin *intrāre*, which in turn comes from *intra* 'within', and *penetrar* from the Latin *penetratus*, past participle of the verb *penetrāre* (from *penitus* 'deep within, far'). Finally, *profundizar* comes from the Latin adjective *profundus* (Cifuentes-Honrubia, 1999).

f. Back to G/Backwards (4 verbs, 6.35%): *contramarchar* 'to go backwards, to back', *regresar* 'to come back', *retornar* 'to return, to go back, to give back', *retroceder* 'to go back, to back down'

Regresar and *retornar*, which can also be an agentive verbs, denote the accomplishment of the Figure's motion back to a previous location. In contrast, *contramarchar* and *retroceder* encode backwards motion, but not necessarily back to a previous location. *Contramarchar* is made up of *contra* (from Latin *contra*) + *marchar* (from French *marcher*); *regresar* comes from the Latin noun *regressus* 'return'; *retornar* is made up of *re* + *tornar* (from Latin *tornāre*); and *retroceder*

comes from *retrocedere* = *retro* 'backwards' + *cedere* 'to leave, to go away' (Cifuentes-Honrubia, 1999).

g.   Change direction (4 verbs, 6.35%): *desviar(se)* 'to divert, to be diverted', *girar1* 'to turn, to change one's direction', *torcer(se)1* 'to turn, to change direction', *virar* '(of a ship) to swerve'

This group of verbs depicts that the Figure changes its trajectory of motion. *Virar* seems to be the most specific verb as it seems to be applied to ships alone. Within this group of verbs, only *desviar*, without the reflexive pronoun, can denote agentive motion. Regarding their etymology, *desviar(se)* comes from Latin *deviare* (*de* 'away from' + *viare* 'path, way'); *girar* from Latin *gyrare*; *torcer(se)* from *torquere*; and *virar* from Celtolatin *virare*.

h.   Closer to G (3 verbs, 4.76%): *acercar(se)*, *aproximar(se)*, *arrimar(se)*, all of which mean 'to (cause to) move closer to'.

These three verbs are typically agentive verbs, that is to say, they denote an external agent that moves the Figure closer to the Ground. When these verbs are used pronominally (i.e., with the reflexive pronoun 'se'), they can denote self-agentive motion, i.e., that the Figure moves itself closer to the Ground. In terms of their etymology, *acercar(se)* comes from Latin *circa* 'around, surround', from which its meaning of moving close seems to have evolved; *aproximar(se)* consists of *a* (*ad-* 'to') + *proximo* (Latin *proximus* 'the closest, close') (Cifuentes-Honrubia, 1999). The etymological origin of *arrimarse* is unknown.

i.   Pass/cross G (traversal, milestone) (3 verbs, 4.76%): *atravesar* 'to cross, to go through', *cruzar* 'to cross', *pasar* 'to pass, to go through, over, along, beyond'.

Atravesar (*a* + *traves*) comes from Latin *ad-* 'to' + *traversus*. *Cruzar* comes from the Latin noun *crux*, and *pasar* comes from the Latin verb *passāre*. According to DUE and DRAE, *pasar* denotes motion from one place to another in relation to a Ground. Such translational motion can follow several trajectories: over, by, past, beyond the Ground (as a point in space); along and through the Ground (as a two or three-

dimensional entity respectively). In contrast, *atravesar* and *cruzar* only denote that the Ground can be traversed.

j.   After G (2 verbs, 3.17%): *perseguir* 'to chase', *seguir* 'to follow'

These two verbs denote that the Figure is moving behind or after another Figure. One subtle difference between the two verbs might be that *perseguir* seem to denote that the second Figure is fleeing from its chaser.

k.   Forwards (2 verbs, 3.17%): *adelantar(se)* 'to (cause to) move forwards', *avanzar* 'to move forwards'.

According to DUE and DRAE, *avanzar* comes from Latin *abantiāre*, which is made up of *ab* 'to' + *ante* 'front'. In these dictionaries no etymology is provided for *adelantar*. According to Cifuentes-Honrubia (1999), *adelantar* (= a + delante) is derived from the adverb *delante* which comes from *denate = de + enante*, which in turn comes from Latin *inante* 'in front'. Thus, these verbs have come to denote motion *to the front*, in other words, moving forwards.

l.   Multiple directions from a unique start (2 verbs, 3.17%): *dispersar(se)* 'to (cause to) disperse', *esparcir(se)* 'to (cause to) move in different directions'.

Similarly to English path verbs for this type of motion, these are self-agentive, non-agentive and agentive verbs whose Figure is a group of entities or a mass.

m.   Out of G (container) (1 verb, 1.59% of Spanish path verbs): *salir* 'to exit'.

Like in our corpus of English path verbs, just one Spanish verb encoding motion out of a container is found. Spanish *salir* comes from Latin *salire*, that is, a manner verb which meant 'to jump'. Wälchli (ms) points out that the frequent association of *salire* with satellites such as *out* or *up* might explain how *salire* acquired the meaning of motion out from a container in Spanish, and the meaning of upwards motion in Italian.

5.4.3. Discussion and Conclusions

Table 5.6 summarises both qualitative data (i.e., types of path) and quantitative data (i.e., number of path verbs per type of path and their frequency within the path lexicon) from our analysis of path verbs in English and Spanish. The table is arranged from the more frequent to the less frequent types of paths which are lexicalised in Spanish. By doing so, it is possible to point out both similarities (whether both languages follow the same tendency in lexicalising some types of path over others) and differences between the two languages.

TYPES OF PATH	SPANISH		ENGLISH	
	#	%	#	%
Away from G	14	22.22%	11	25.00%
Up/Onto G - Upwards	8	12.70%	5	11.36%
To/towards G	8	12.70%	4	9.09%
Down from/to G - Downwards	6	9.52%	4	9.09%
Into G	6	9.52%	2	4.55%
Change direction	4	6.35%	4	9.09%
Back to G/ Backwards	4	6.35%	3	6.82%
Pass/cross G	3	4.76%	3	6.82%
Closer to G	3	4.76%	1	2.27%
After G	2	3.17%	4	9.09%
Forwards	2	3.17%	1	2.27%
Multiple directions	2	3.17%	1	2.27%
Out of G	1	1.59%	1	2.27%
TOTAL	63	100%	44	100%

Table 5.6. Distribution of English and Spanish path verbs

We carried out the non-parametric test *chi-square* to see whether the distributions of path verbs into 13 types of path in English and in Spanish were significantly different. Although the two languages differ in the number of path verbs, no significant difference is found in the distribution of path types across languages (*Chi-square* (12) = 4.105, p > 0.05). This suggests that the two languages do not differ in the organisation of their path verb lexicon.

Bearing this mind, we can begin to answer our research questions regarding path verbs. One of the two main research questions asked whether the English and the Spanish path verb lexicons were comparable in size. If we look at Table 5.6, we could answer: No, they are not; Spanish path verbs outnumber English path verbs. In the Spanish corpus, 63 path verbs have been found (which amount to the 24.51% of the Spanish motion verb lexicon), whereas in the English corpus, 44 path verbs have been identified (which represent 11.70% of the English motion verb lexicon). The second research question asked whether the two path lexicons were comparable in their semantic nature. After a close examination of the types of path which are encoded by these languages, we might conclude that although the two path lexicons differ in size, they are able to encode the same sorts of path information; in particular, both languages have path verbs expressing the 13 types of path used in our analysis and their distributions do not differ significantly.

Our data, moreover, show that Spanish path verbs outnumber English path verbs in 9 out of the 13 types of path, namely, 'Away from G', 'To/towards G', 'Up/onto G – Upwards', 'Down from/to G – Downwards', 'Into G', 'Back to G/Backwards', 'Forwards', 'Closer to', and 'Multiple directions'. Spanish possesses more path verbs for some types of path than English. According to dictionary definitions, the various path verbs within the same type of path might be used for specific contexts (informal contexts), for certain Figures or even for certain Grounds. In terms of the 'Away from G' type of path, Spanish *zarpar* seems to be only used when the Figure is a ship, and *pirarse* and *largarse* are informal verbs. Within the 'To/towards G', where the Ground is the endpoint of motion, *atracar* and *arribar* appear to be restricted to ships. Regarding the 'Up/Onto G- Upwards' path verbs, for instance, *encaramarse* may be used for going onto a tree, and *encumbrar* for reaching the top of a mountain; the verb *subir* could be used for these contexts as well. Finally, in terms of 'Into G', *acceder* seems to be used in contexts where there is some impediment for the Figure entering the Ground, and *encerrar(se)* denotes that the Ground as container will restrain the Figure from going out. Thus, these two path verbs might be said to be rich in implying and, possibly, in lexicalising force dynamics (Talmy, 2000a: Chapter 7).

On the other hand, 'After G' path verbs in English (*follow*, *hound*, *pursue* and *shadow*) surpass in number their Spanish counterparts (*perseguir*, *seguir*). As stated earlier, *hound*, *pursue* and *shadow* seem to imply some kind of manner of motion information; *hound* seems to emphasise the Figure's relentless pursuit of the second Figure (TFD); *pursue* seems to often imply that the chaser intends to capture or kill the second Figure (CALD, TFD, MW, OED), but not necessarily; and *shadow* appears to imply secretive motion (TFD, MW). Have these three verbs been considered as manner verbs in our analysis, Spanish would have surpassed English for this type of path as well.

As shown in the table above, both languages present the same number of path verbs for the following types: 'Change direction' (Spanish *desviar(se)* 'to divert, to be diverted', *girar1* 'to turn', *torcer(se)1* 'to turn, to change direction' and *virar* '(of a vehicle, especially a ship) to swerve'; English *divert*, *swerve*, *tack*, *turn2*), 'Pass/cross G' (Spanish *pasar* 'to go through, over, along', *atravesar* 'to cross, to go through', *cruzar* 'to cross'; English *cross*, *pass*, *traverse*), and 'Out of G' (*salir* 'to exit', *exit*).

Moreover, our data show that the most frequent types of path in both languages are 'Away from G', 'Up/Onto G – Upwards', 'To/towards G' and 'Down from/to G – Downwards'. This suggests that these types of path (motion away from/towards G and motion along the vertical axis) are basic spatial distinctions which are frequently lexicalised in path verbs in both English and Spanish, and by extension, we might predict that they might also be the most frequent path types for other satellite- and verb-framed languages. Further research, however, would be needed to test whether languages have a preference for lexicalising these types of paths over others in their path verb lexicon. On the other hand, the least frequent type of path found for English and Spanish is 'Out of G', which is encoded by just one verb per language (*exit*, *salir* 'to exit'). Interestingly enough, 'Into G' (motion into a container), the opposite type of path of 'Out of G', is more frequent in both languages, especially in Spanish, where 6 path verbs denoting motion into a Ground were found (*acceder* 'to gain access into', *adentrarse* 'to go into the interior part of', *encerrar(se)* 'to put something, someone or oneself into an enclosed place', *entrar*

'to enter', *penetrar* 'to enter', *profundizar* 'to get into'). There is no apparent reason why 'Out of' seems to be so disfavoured in lexicalisation.

With regard to the etymology of path verbs[23], Spanish path verbs come mostly from Latin, but the origin of other path verbs is traced back to French (*abandonar* 'to abandon', *abordar* 'to approach', *marcharse* 'to leave'), Arabic (*atracar*, *encaramar(se)*) and Caló (*pirarse*). English path verbs, on the other hand, come mostly from Anglo-French and Middle French, which in turn come from Latin. Some path verbs are from Anglo-French without any apparent influence of Latin (such as *recoil* and *return*, which denote backwards motion), and some other verbs are from Germanic origin (e.g., *arise*, *leave*, *mount*, *rise*, *scatter*). Therefore, some English and Spanish verbs share their etymology (cf. Talmy, 1985: 72; 2000b), and hence, they express the same types of path:

a.   'Pass/cross G': *cross - cruzar, traverse - atravesar, pass - pasar*

b.   'Away from': *retreat - retirarse, desert - desertar, abandon - abandonar*

c.   'Into G': *enter - entrar, penetrate - penetrar*.

d.   'Up/onto G – Upwards': *scale - escalar, ascend - ascender*

e.   'Downwards: *descend - descender*

f.   'Forwards': *advance - avanzar*

g.   'To/towards G': *arrive – arribar*[24]

h.   'Back': *return – retornar*

On other occasions, English and Spanish path verbs differ in their etymology. In other words, we have found path verbs of Latin origin in each language which do not seem to correspond to a path verb in the other. By way of illustration, English *exit* (from Latin *exire* 'to go out' = *ex-* 'out' + *ire* 'to go'); English *stray*, which denotes

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[23] Many of the path verbs from Latin origin were the result of the path prefixes becoming phonologically fused to verb roots (usually encoding either Motion or Manner of motion), ultimately arriving at monomorphemic path verbs (cf. Slobin, 2004; Talmy, 2000b).

[24] As observed in dictionary definitions, the English verb *arrive* seems to be used for all types of Figures (humans, animals, inanimates such as planes, ships, etc) whereas the use of the Spanish verb *arribar* seems to be restricted to ships reaching port, and by extension, to people on ships reaching port.

motion away from a given path (from Anglo-French *estraier*, from Vulgar Latin *extravagare* = *ex* 'outside' + *vagare* 'to wander'); English *divert* (from Middle French and Latin; Middle French *divertir*, from Latin *divertere* 'to turn in opposite directions'); English *pursue* (from Anglo-French *pursure*, *pursiure*, from Latin *prosequi* = *pro-* 'forward' + *sequi* 'to follow'); Spanish *elevar(se)*[25] 'to (cause to) move upwards' (from the Latin verb *elevare* and/or from the Latin adjective *levis* 'light'); Spanish *partir* 'to leave' (from Latin *partire*); Spanish *subir* 'to go up' (from the Latin verb *subire*, *sub* 'under' + *ire* 'to go'); Spanish *salir* 'to go out' (from the Latin manner verb *salire* 'saltar'), etc. Finally, another interesting crosslinguistic difference in the etymology of path verbs is the existence of a great number of Spanish verbs which are made up of adverbs or nouns with or without prefixes encoding direction. For example, *acercar(se)* from *cerca* 'near, close'; *adentrar(se)* from *dentro* 'inside'; *adelantar(se)* from *delante* 'in front of'; *alejar(se)* from *lejos* 'far'; *aproximar(se)* from *próximo* 'close'; *distanciar(se)* from *distancia* 'distance'; *encumbrar* from *en* + *cumbre* 'peak, top of a mountain'. These verbs appear to contribute as well to the larger size of the Spanish path verb lexicon, compared to the English, in which no counterparts have been found.

On the whole, our research on the English and the Spanish path verb lexicons has started bridging the gap in the existing literature. Our results suggest that though the Spanish path verb lexicon is larger than the English path verb lexicon— especially for some types of path—both languages are able to encode the same sort of path information, as shown in the distribution of types of path across the two languages. Differences across languages have been noticed in terms of the specific contexts in which some Spanish path verbs might be used. Also, it has been pointed out that, in both languages, some types of path seem to be more frequently lexicalised in verbs whereas others may be dispreferred. Overall, our research provides support for Özçalişkan's (2004) claim that the path verb lexicons of both satellite- and verb-framed languages form a closed lexical category that does not present much elaboration, but it does not support her claim of comparable size.

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[25] In English, the verb *elevate* does exist, but it is an agentive verb of motion. That is why this verb was not included in our corpus.

5.5. Manner verbs

As stated throughout the present work, a great deal of research (e.g., Berman & Slobin, 1994; Mora-Gutierrez, 2001; Slobin, 1996a, 1996b, 1997, 2004, 2006) has shown that the English manner-of-motion verb lexicon is highly rich whereas the Spanish is less so. However, research has quite often failed to look at the type of fine-grained manner information encoded in English and Spanish verbs from a comparative point of view. In this section, we are interested in finding out whether English and Spanish manner-of-motion verbs encode comparable manner details despite the well attested fact that English manner verbs outnumber those of Spanish (e.g., Slobin, 2004; Slobin, 2006). Moreover, we intend to discover the sorts of manner details which are most productively expressed in manner verbs in each language. Finally, our research also seeks to find out (a) whether the English manner verb lexicon is equally rich and varied for all subdomains of motion (e.g., human locomotion or motion using vehicles), and if not, (b) whether the Spanish manner verb lexicon might be richer than the English for some particular subdomains.

With the purpose of providing a systematic analysis which permits crosslinguistic comparisons, we opted for grouping manner-of-motion verbs in terms of the two types of motion the verbs can generally denote: Self-agentive Motion and Translational Motion. In addition, the manner categories which were listed in the methodology section were included within the type of motion they pertain to. By way of illustration, 'Posture' is a manner category which is considered as describing self-contained motion, whereas 'Motor-pattern' (e.g., walk, run) typically describes translational motion. The reader should bear in mind, as has been pointed out earlier, that manner categories are mutually exclusive, that is to say, manner verbs generally denote more than one fine-grained manner feature. For example, *jog* can be analysed as motor pattern-run ('Motor-pattern'), slow rate of motion ('Rate') and regular steps ('Characteristic use of lower body'); *stroll* as motor pattern-walk and state of the Figure (relaxed), and so on. This raises some problems when grouping manner verbs into the proposed manner categories. If we consider *stroll* for example, the question that arises is: in which manner category should it be included? In 'Motor pattern'?, in 'State of the Figure? Or in a combination of the two? This last alternative would require an extensive list of all the combinations of manner categories found in our

corpus, which, in our opinion, would make the comparison between the English and the Spanish manner verb lexicons unmanageable and less feasible. The other alternative would be to include the verb into one manner category by taking into account (a) whether dictionaries agree on one manner detail above all whereas they were less clear about other manner features; (b) whether verbs denote a specific motor pattern (walk, run, jump) and further manner details (e.g., 'Rate', 'State of the Figure', 'Characteristic use of lower body') which just appear to provide further specificity within each motor pattern, and (c) whether verbs denote contact between the Figure and the Ground and other manner details which give semantic granularity to verbs within this category. The latter is the option taken up for our analysis[26]. Thus, by way of illustration, *jog* would be categorised in motor pattern-run, and *stroll* in motor pattern-walk.

In the following subsections, we begin with the semantics of English manner verbs, and then go on with the semantics of Spanish manner verbs. Finally, we compare and contrast both manner verb lexicons in order to uncover crosslinguistic differences and similarities.

5.5.1. English manner verbs

As shown in Section 5.3.1, in our English corpus of motion verbs, 276 manner verbs (Motion + Manner) were found; these verbs amount to 85.33% of the English motion verbs in our corpus. For ease of explanation, we first deal with manner verbs typically denoting self-contained motion (22.83% of the English manner verbs), and then with manner verbs which generally imply translational motion (77.17% of the English manner verbs).

Table 5.7 shows the distribution of English manner verbs which express self-contained motion across seven manner categories (i.e., the number of verbs within

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[26] Future empirical research would be needed to test the validity of our analysis, in particular to shed some light on the issue of (a) whether some manner categories (e.g., 'Motor pattern', 'Contact') might be more important than others manner features (e.g., 'Rate', 'State of the Figure') when categorising certain verbs (i.e., some manner details might be seen as defining features for certain verbs, but not for others), or (b) whether all manner categories are on equal footing in the semantics of manner-of-motion verbs.

each manner category and their proportion relative to the whole corpus of English manner verbs).

SELF-CONTAINED MOTION	ENGLISH	
	#	%
SHAKE, SWING, VIBRATE	18	6.52%
POSTURE	17	6.16%
Bend, Twist, Curve	6	2.17%
Vertical Orientation	6	2.17%
Downwwards	*4*	1.45%
Upwards	*2*	0.72%
Horizontal Orientation	2	0.72%
To one side	2	0.72%
Unspecified	1	0.36%
Roll - Unroll		
REVOLVE, ROTATE, SPIN	14	5.07%
UNSTEADY MOTION	8	2.90%
UPSIDE DOWN	4	1.45%
BOUNCE	1	0.36%
ITERATIVE MOTION	1	0.36%
TOTAL	63	22.83%
TOTAL NUMBER OF MANNER VERBS		276

Table 5.7. Distribution of English manner verbs (Self-contained Motion)

To begin our discussion of manner verbs which typically express self-contained motion, we start with those manner categories which are most frequently lexicalised by English manner verbs:

a.   Shake, Swing, Vibrate (18 verbs, 6.52% of English manner verbs): *flap*, *flick*, *flutter*, *jig2*, *quake*, *quiver*, *rock*, *shake*, *shiver*, *shudder*, *sway*, *swing*, *tremble*, *vibrate*, *wag*, *wave*, *wiggle*, *wobble*.

This manner category includes swinging and oscillatory movements, in addition to short, sudden and usually iterative movements of the Figure. Some verbs appear to denote that the Figure shakes because of strong feelings or cold (e.g., *quake* (CALD, TFD, MW); *quiver*, *shudder*, *tremble* (CALD, TFD, MW, OED)).

b.   Posture (17 verbs, 6.16% of English manner verbs):

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Posture is a rich manner category as it denotes the different body positions assumed by the human/animal body or by objects treated as comparable to the body. Postural notions pertain to the vertical and horizontal dimension, that is, whether the Figure ends up in a vertical (upwards or downwards) or in a horizontal orientation; but they also relate to whether the Figure bends, twist its body, coils, uncoils, moves its body to one side, etc. Therefore, this manner category might be subdivided into the following groups:

b.1. Bend, Twist and Curve: *bend, bow, slouch, twist, wind, wriggle*.

b.2. Vertical orientation – upwards: *arise, rise*.

b.3. Vertical orientation – downwards: *crouch, kneel, squat, stoop*.

b.4. Horizontal orientation: *lean, recline*.

b.5. To one side: *careen1, dodge1*.

b.6. Unspecified orientation: *stretch*.

Among this group of posture verbs, *bend, bow, careen1, lean, recline, twist* and *wind* seem to be also used agentively, that is, when an external agent causes the Figure to assume a certain body position or orientation.

c.   Revolve, Rotate, Spin (14 verbs, 5.07% of English manner verbs): *bowl, coil, pirouette, reel2, revolve, roll, rotate, spin, swirl, trundle, turn1, whirl, twine.*

As Levin & Rappaport-Hovav (1992) and Levin (1993) point out for Roll verbs (i.e., verbs denoting motion around an axis), verbs within this category can denote both agentive motion and non-agentive motion, and when accompanied by a prepositional phrase they can depict translational motion as well. Within this group of verbs, *pirouette* does not seem to be used agentively.

d.   Unsteady Motion (8 verbs, 2.90% of English manner verbs): *coggle, dodder, flounder, lurch, stagger, teeter, totter, reel1.*

This group of verbs is of a miscellaneous nature. According to dictionary definitions, some of these verbs seem to denote self-contained motion (*coggle, flounder* and *lurch*), whereas others seem to denote both self-contained and translational motion (*dodder, lurch, stagger, teeter, totter* and *reel1*). When the latter group of verbs is used with inanimate Figures, it seems to depict self-contained motion. In contrast,

when used with animate Figures, these verbs seem to be able to describe both types of motion (self-contained and translational); in other words, the Figure can move unsteadily without changing its location, or it can move in the same fashion while changing its location.

e.   Upside down (4 verbs, 1.45% of English manner verbs): *capsize*, *flip*, *keel*, *overturn*.

These four verbs can also be used agentively, that is, an agent can make the Figure turn upside down or turn over.

f.   Bounce (1 verb, 0.36% of English manner verbs): *bounce*.

This verb denotes that the Figure rebounds or bounds after hitting a surface (CALD, TFD, MW, OED). *Bounce* might also be used agentively.

g.   Iterative Motion (1 verb, 0.36% of English manner verbs): *bob*.

This verb denotes that the Figure moves up and down repeatedly or rebounds.

With regard to the manner categories pertaining to translational motion, Table 5.8 offers the general distribution of manner verbs, as well as their percentage in relation to the manner verb lexicon.

TRANSLATIONAL MOTION		ENGLISH	
		#	%
MOTOR PATTERN		65	23.55%
	Walk	47	17.03%
	Jump	11	3.99%
	Run	7	2.54%
VEHICLE/INSTRUMENT		52	18.84%
RATE		35	12.68%
	Fast	29	10.51%
	Increase	3	1.09%
	Slow	2	0.72%
	Decrease	1	0.36%
DANCE		19	6.88%
CONTACT BETWEEN F & G		11	3.99%
	Body close to the ground	4	1.45%
	Smooth motion	4	1.45%
	Slight contact	2	0.72%
	Uncontrolled motion	1	0.36%
FURTIVE MOTION		6	2.17%
PLAYFUL MOTION		6	2.17%
PATH SHAPE		3	1.09%
OTHERS		3	1.09%
	Gradual stages	2	0.72%
	Travel with one's belongings	1	0.36%
	Trailing clothes		
STATE OF FIGURE		3	1.09%
FORCED MOTION		2	0.72%
	Energy-high	1	0.36%
	Energy-low	1	0.36%
OBSTRUCTED MOTION		2	0.72%
LEISURELY MOTION		2	0.72%
SMOOTH MOTION		1	0.36%
MOTION IN FILE		1	0.36%
MOTION IN SPORTS		1	0.36%
NOISY MOTION		1	0.36%
UNCONTROLLED MOTION			
AWKWARD MOTION			
NO AIM IN MOTION			
CHAR. USE OF LOWER BODY			
USE OF ONE'S HANDS/LEGS			
NO AIM IN MOTION			
TOTAL		213	77.17%
TOTAL NUMBER OF MANNER VERBS		276	

Table 5.8. Distribution of English manner verbs (Translational Motion)

As shown in the table, for some manner-of-motion categories (from 'Uncontrolled Motion' to 'No aim in Motion') no verb seems to be found. This should not be taken to indicate that English has no verb lexicalising these notions, but rather that verbs that encode these manner details have instead been grouped in other manner categories, which might be more relevant for the verb's semantics, such as 'Motor pattern'. Once again, we should remark that no claim is being made about the superior status of some manner categories over others; our methodology does not allow us to make such claims. However, our analysis proves fruitful as it might be taken as a starting point for further experimental research aimed at unveiling the psychological validity of our semantic analysis both in terms of (a) whether the verbs encode the proposed semantic information and (b) whether some manner features might be more relevant than others in a verb's semantics.

Our analysis shows that the majority of manner verbs in English encode 'Motor pattern' (walk, run and jump), 'Vehicle/Instrument', 'Rate of motion', 'Dance' and 'Contact between the Figure and the Ground', whereas other manner categories seem to be less favoured for lexicalisation by themselves (i.e., they seem occur together with other manner details). We begin our examination of manner verbs with those manner categories which seem to be most frequently lexicalised in the English manner verb lexicon:

a.   Motor pattern (65 verbs, 23.55% of English manner verbs)

a.1. Walk (47 verbs, 17.03% of English manner verbs): *amble, clump, gimp, goosestep, hike, hobble, limp, march1, march2, meander2, mince, mosey, pace, pad, paddle3, parade, perambulate, plod, promenade, prowl, ramble, roam, rove, sashay, saunter, shamble, shuffle, sleepwalk, slog, somnambulate, stalk2, stomp, stride, stroll, strut, stump, swagger, tiptoe, toddle, traipse, tramp, trek, troop, trudge, waddle, walk, wander.*
This heterogeneous group of verbs, which is defined by dictionaries as ways of walking, appears to denote specific information about the following manner categories:

a.1.a. 'State of the Figure' (19 verbs): in *amble* the Figure is relaxed and walks around at a slow rate (CALD, LLA, TFD, MW, OED); in *gimp*, *limp* and *hobble*, the Figure is injured or physically impaired, and as a consequence, it may move unsteadily and in an effortful way (CALD, LLA, TFD, MW, OED); *march2* denotes that the Figure walks in a determined or angry way; *pace* encodes that the Figure is anxious or worried (CALD, LLA, OED); *parade* is defined as to walk proudly around as part of a public celebration or display (CALD, LLA, TFD, MW, OED); *hike*, *promenade*, *saunter* and *stroll* denote that the Figure takes a walk for relaxation and pleasure (CALD, TFD, MW, OED); *sashay*, *strut* and *swagger* denote that the Figure walks in a proud and confident way (CALD, TFD, MW, OED); in *somnambulate* and *sleepwalk*, the Figure walks while asleep (CALD, TFD, MW, OED); *stalk2* encodes the proud or angry attitude of the Figure (CALD, TFD, MW, OED); *stomp* and *stump* denote that the Figure walks with heavy steps so as to show its anger (CALD, LLA, TFD, MW).

a.1.b. 'No aim in motion' (7 verbs): *meander2*, *mosey*, *ramble*, *roam*, *rove*, *traipse* and *wander* generally denote that the Figure walks from one place to another aimlessly (CALD, TFD, MW, OED). Moreover, *mosey* is also defined as a leisurely motion (TFD, MW, OED). Regarding *traipse*, Talmy (1985: 137) noted that *traipse* encodes a negative attitudinal content; in contrast, dictionaries do not provide any information about the speaker's attitude towards the event designated by this verb.

a.1.c. 'Forced Motion' (4 verbs): *plod*, *trudge* and *slog* denote that the Figure moves with difficulty and with great effort, at a slow pace, usually with heavy steps (CALD, TFD, MW, OED). *Clump* seems to encode this information together with information about the noisy motion (CALD, LLA, TFD, MW, OED).

a.1.d. 'Characteristic use of lower body' (7 verbs): *goosestep* denotes that the Figure moves with regular steps and with the legs lifted high and straight (CALD, MW, OED). *March1* denotes that the Figure moves with regular steps, usually in a military way (CALD, TFD, MW, OED). *Mince* means to walk with small delicate steps as in an affected manner (CALD, TFD, MW, OED). *Tramp* seems to denote that the Figure walks with heavy steps, but unlike *trudge*, *plod* and *slog*, this verb does not seem to encode 'Forced Motion' (CALD, TFD, MW, OED). *Shuffle* denotes that the Figure moves slowly without lifting the feet from the ground (CALD, LLA,

TFD, MW, OED) and it might encode some information about the sound it makes (LLA, OED). *Tiptoe* denotes that the Figure is walking on tiptoes (CALD, LLA, TFD, MW, OED), and it might also denote that the Figure does not want to be noticed (LLA, MW). Finally, *stride* denotes that the Figure walks with long steps.

a.1.e. 'Unsteady Motion' (2 verbs): *paddle3* and *toddle* encode that the Figure walks unsteadily (MW, OED). On most occasions, unsteady motion is expressed together with further semantic information in walking verbs (e.g., *limp*, *hobble*).

a.1.f. 'Awkward Motion' (1 verb): *shamble* encodes the awkward and slow walking of the Figure (CALD, TFD, MW, OED). Moreover, this verb might denote unsteady motion (TFD, OED).

a.1.g. 'Furtive Motion' (1 verb): *prowl* denotes that the Figure walks around a place stealthily, so as not to be noticed (CALD, TFD, MW, OED).

a.1.h. 'Swinging motion' (1 verb): *waddle* is defined as a way of walking characterised by the Figure's swinging (CALD, TFD, MW, OED).

To finish, unclear definitions are provided for *pad*, *perambulate*, *trek* and *troop*. *Pad* is defined by LLA and OED as a quiet way of walking, usually without shoes, but it also seem to denote walking with difficulty (e.g., through mud) (TFD) and just to journey on foot (OED). *Perambulate* seems to be an old fashioned verb which denotes 'Leisurely Motion', similar to *stroll* (CALD, TFD, MW); however, it is also defined as 'to go on foot' (TFD, MW, OED). Lastly, *trek* is defined as a way of walking, but dictionaries do not agree on whether it is an arduous journey on foot (TFD, MW), a long walk over hills, mountains (CALD, LLA) or whether to journey by ox-wagon (OED).

a.2. Jump (11 verbs, 3.99%): *bound, capriole, curvet, hop, jump, leap, leap-frog, pronk, skip, somersault, vault.*

Within this group of verbs, *capriole* and *curvet* usually imply that the Figure is a horse, and *pronk* seems to be used for antelopes, springboks, etc and denotes to jump straight up (TFD, OED). *Bound* and *leap* might denote that the Figure takes high and large jumps (CALD, LLA). The verb *hop*, when the Figure is a human, means to jump on one leg (CALD, LLA, OED), whereas, when the Figure is an animal (rabbits, grasshoppers, etc), it means to jump on two or more legs (CALD, OED).

Leap-frog is a verb coming from a children's game in which some children bend down and another child jumps over them (CALD, TFD, OED). *Skip* seems to denote that the Figures jumps after each step (CALD, LLA), hops on alternating feet (TFD, MW) or uses a rope while jumping (OED). *Somersault* refers to an acrobatic jump by which the Figure turns over (CALD, TFD, OED). Lastly, *vault* denotes that the Figure uses its hands or an instrument in its jumping movement (CALD, LLA, MW, OED).

On the whole, this category seems to be much connected with self-contained motion in the sense that when the Figure jumps, hops, pronks, etc it does not necessarily changes its location. Therefore, this category might be said to be defined by the rising from the ground using the legs.

a.3. Run (7 verbs, 2.54%): *gallop1, jog, lope, run, scamper, sprint, trot*.
Gallop1 and *trot* usually refer to the running of a horse or a four legged animal. In addition, these verbs denote high speed in motion for *gallop* and a slow rate of motion for *trot*. *Jog* denotes a slow run at a regular speed (CALD, TFD, MW, OED). According to CALD and OED, *lope* denotes that the Figure takes long steps in running. *Scamper* might denote that the Figure takes small steps while running (CALD, LLA). *Sprint* means to move at top speed for a brief period of time (CALD, TFD, MW, OED).

In light of these data, apparently 'Jump' includes more verbs than 'Run'. However, as we will point out below, the fact that dictionaries do not agree on whether some manner verbs (e.g., *bolt, canter1, dash, dart, hurry, hurtle, nip, rush, scoot, scurry, scuttle, spring, streak, whisk, whiz(z), zoom*) are or are not running verbs led us to place these verbs into the category 'Rate'. This might be the explanation for the inferior number of verbs for 'Run' as compared to 'Jump'.

b. Vehicle/Instrument (52 verbs, 18.84% of English manner verbs)

b.1. On an animal: *canter2, gallop2*.

b.2. On/in a vehicle

b.2.1. Unspecified vehicle: *cruise, drive, journey, motor, ride.*

b.2.2. Specific vehicle/instrument: *balloon, bicycle, bike, boat, bobsleigh, bobsled, bus, cab, canoe, caravan, chariot, coach, cycle, dogsled, ferry, gondola/e, helicopter, jeep, moped, motorbike, motorcycle, parachute, raft, rickshaw, rocket1, rollerblade, ship, shuttle, skate, skateboard, ski, sledge, sled, sleigh, taxi, toboggan, tram, trolley, truck, yacht.*

b.2.3. Part of a vehicle: *oar, paddle2, pedal, sail, row, wheel.*

b. 3. On/in an instrument: *seesaw.*

This wide category groups verbs denoting motion on animals, in/on vehicles and in/on instruments. *Canter* and *gallop* denote that the Figure is moving on a horse which is cantering or galloping. Within the group of motion on/in vehicles, we observe three main types of verbs: (a) verbs which *lexicalise* a specific vehicle or instrument (denominal verbs); (b) verbs which *imply* the use of some vehicles and (c) verbs which lexicalise parts of some vehicles, and, as a consequence, they refer to motion using these vehicles. In terms of the vehicles which are implied by verbs, *cruise* implies a (luxury) ship, but the rest of the verbs can imply a wider range of vehicles (e.g., a car, truck, motorbike, bike, etc). The latter group of verbs (*oar, paddle2, pedal, sail, row, wheel*) might be considered as metonymic verbs as a PART of a vehicle stands for the WHOLE vehicle (cf. Cifuentes-Honrubia, 1999, 2000a, 2000b; Lakoff & Johnson, 1982: 38, Lakoff & Johnson, 1999;).

When analysing this group of verbs, it was observed that some vehicle verbs could display agentive motion, that is, the vehicle can be used to move entities from one place to another, whereas other vehicle verbs did not seem to be capable of denoting caused motion—at least according to dictionary definitions. Moreover, we became aware of the inconsistencies across dictionaries in this regard. To remind the reader, in our analysis we coded that semantic information which was present in the majority of the dictionaries employed. Thus, in the analysis of vehicle verbs, when three out of the four dictionaries (CALD, TFD, MW, OED) agreed on that a given vehicle verb displayed agentive motion, we coded 'AM' in the column for Agentive Motion; similarly we coded 'NO' when they agree on that they do not express

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agentive motion. Moreover, as can be seen in Appendix 1, 'AM?' indicates that two or just one out of four dictionaries stated that a given vehicle verb could be used for agentive or caused motion.

After a closer look at vehicle verbs, we found that *all* dictionaries agree that (a) *bus*, *ferry*, *parachute*, *ship*, *shuttle* and *truck* can display agentive behaviour or caused motion, and that (b) *bobsleigh*, *bobsled*, *cab*, *dogsled*, *gondola/e*, *jeep*, *kayak*, *moped*, *motorcycle/bike*, *rickshaw*, *rollerblade*, *skate*, *skateboard*, *ski* and *yacht* can only denote that the Figure uses these vehicles or instruments as means of locomotion. This led us to hypothesise that large vehicles might display both agentive and self-agentive motion, as they can transport people, goods, etc, whereas small vehicles might just be used for Figures as means of their own locomotion.

c.   Rate of Motion (35 verbs, 12.68% of English manner verbs): *accelerate*, *bolt*, *canter1*, *careen2*, *career*, *clip*, *dart*, *dash*, *dawdle*, *decelerate*, *flit*, *hare*, *hasten*, *hurl*, *hurry*, *hurtle*, *lumber*, *nip*, *pop*, *race*, *roar*, *rush*, *scoot*, *scramble*, *scud*, *scurry*, *scuttle*, *shoot*, *speed*, *spring*, *streak*, *tear*, *whisk*, *whiz*, *zoom*.
This category includes a wide variety of verbs. All of them encode information about the speed of motion, and some of them encode additional manner details. Within this category, 29 verbs denote a fast rate of motion (e.g., *bolt*, *canter1*, *careen2*, *career*, *clip*, *dart*, *dash*, *hurry*, etc), 3 verbs express an increase in the rate (namely, *accelerate*, *hasten*, *hurry*), 2 verbs denote a slow rate of motion (*dawdle*, *lumber*), and one verb denotes a decrease in the rate of motion (*decelerate*).

It should be pointed out that many of these verbs might have been grouped in other categories. *Hurl* and *hurtle* could have been included into 'Forced Motion' as the motion depicted by these verbs requires an effort to be performed. *Scurry* and *scuttle* might also have been categorised into 'Motor pattern-run' (i.e., some of the dictionaries defined them as running verbs); these verbs, moreover, seem to denote that the Figure takes quick short steps (CALD, TFD, MW, OED). *Scramble* might have also been categorised into 'Forced Motion', as it denotes that the Figure moves or climbs quickly with difficulty using its hands and legs (CALD, TFD, MW, OED). *Whiz(z)* and *zoom* might also have been included in 'Noisy Motion' as they encode such semantic information (TFD, MW, OED) besides encoding 'Rate-fast'(CALD,

TFD, MW, OED). On other occasions, we opted for including verbs in the 'Rate' category when dictionaries disagreed with respect to further details of manner of motion. By way of illustration, *careen2* and *career* denote fast speed, but dictionaries do not agree on whether they also express 'Uncontrolled Motion' or 'Unsteady Motion' (that is why in our coding we added a question mark '?' to some of the manner details). The same applies to other verbs such as *hare* and *scud*; by looking at dictionary definitions it is not clear whether *hare* denotes 'Motor pattern-run' and 'Uncontrolled Motion' and whether *scud* denotes 'Smooth Motion' besides encoding 'Rate'.

d.   Dance (19 verbs, 6.88% of English manner verbs): *boogie, bop, cancan, conga, dance, foxtrot, jig1, jitterbug, jive, moonwalk2, polka, quickstep, rumba, samba, squaredance, tango, tapdance, twist2* and *waltz*.

This group of manner verbs means 'perform the dance named by the verb'. It should be noted that not all dictionaries offered definitions for these denominal verbs. Generally speaking, these verbs might be thought to denote self-contained motion as the Figure does not necessarily change its overall location. However, as has been noted in the literature (e.g., Narasimhan, 2003; Narasimhan et al, 2006), dance verbs can combine with prepositional phrases expressing direction, and thus, they can easily convey the Figure's translational motion.

e.   Contact between the Figure and the Ground: *crawl, creep2, glide, grovel, slide, slip1, slither, skid, skim, skitter* and *sweep*.

This group of verbs expresses that (a) the Figure's body is close to the Ground (*crawl, creep2, grovel* and *sweep*); (b) the Figure moves smoothly over/along the Ground (*glide, slide, slip, slither*); (c) the Figure loses control over its motion over/along the Ground (*skid*); or (d) the Figure is just in slight contact with the Ground (*skim, skitter*). Moreover, some of these verbs encode further semantic information. For instance, *slither* also encodes that the shape of the path that the Figure follows is similar to those of reptiles (twisted, curved shape of path); *skim* and *skitter* denote fast speed as well; and *grovel* denotes that the Figure has a specific state of mind (humiliated).

f.   Furtive Motion (6 verbs, 2.17% of English manner verbs): *skulk, slip2, creep1, glide2, sidle, sneak.*

These verbs encode that the Figure moves in a secretive way, so as to avoid being seen, heard or noticed. Some of these verbs, namely, *creep1, sidle* and *sneak,* seem to imply that the Figure is walking—as shown by some of the definitions from LLA. However, dictionaries do not usually offer much information about the motor pattern as they tend to define these verbs as 'move furtively' (CALD, TFD, MW, OED).

g.   Playful Motion (6 verbs, 2.17% of English manner verbs): *caper, cavort, frisk, frolic, gambol, romp.*

Once again, dictionaries do not agree on the specific motor pattern that these verbs encode[27]. Therefore, they were categorised outside the 'Motor-pattern' manner category.

h.   Path shape (3 verbs, 1.09% of English manner verbs): *meander, zigzag, circle.*

Meander denotes that the Figure follows a curved or winding path; *zigzag*, a zigzagged course; and *circle*, in a circle around something. This category might be problematic as it could be argued that Path shape is a path parameter instead of a manner parameter. Further research is needed to shed light on this issue.

i.   Others (3 verbs, 1.09% of English manner verbs): *backpack, edge, inch.*

The first encodes that the Figure is travelling with its belongings in a backpack. *Edge* and *inch* denote that the Figure moves in gradual stages, or steps, or gradual movements.

j.   State of the Figure (3 verbs, 1.09% of English manner verbs): *storm, prance,* and *tittup.*

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[27] As we will see in Chapter 6, a study on categorisation of human locomotion verbs provides psycholinguistic validity to our semantic analysis for these verbs; namely, they are not rated as good examples of any motor pattern.

These three motion verbs have been analysed as expressing the psychological state of the Figure; in *storm*, the Figure is annoyed and seems to show its anger by moving violently (CALD, TFD, MW, OED); in *prance* and *tittup*, the Figure moves in a showing-off manner. The dictionary definitions are not clear about the motor pattern implied in these motion verbs. It is not clear whether the Figure is walking in *storm* and *tittup*, or whether it is walking, running or jumping in *prance*.

k.   Forced Motion (2 verbs, 0.72% of English manner verbs): *clamber, throw*. *Clamber* denotes that the Figure moves with difficulty and effort using its hands and legs. On the other hand, *throw* denotes a high-energetic and quick motion, which can be both agentive and self-agentive.

l.   Obstructed Motion (2 verbs, 0.72% of English manner verbs): *trip, stumble*. These two verbs encode that the Figure hs an obstacle in its way while walking or running (CALD, TFD, MW, OED).

m.   Leisurely Motion (2 verbs, 0.72% of English manner verbs): *tour*, *travel*.

n.   Smooth Motion (1 verb, 0.36% of English manner verbs): *float*. Smooth Motion is a manner category related to translational motion; the Figure moves smoothly with respect to the Ground which, in this case, might be either air or water. However, this verb, like its Spanish counterpart (as we will see), do not seem to imply that the Figure is moving along a path unless a prepositional phrase encoding direction follows the verb.

o.   Motion in file (1 verb, 0.36% of English manner verbs): *file*.

p.   Motion in sports (1 verb, 0.36% of English manner verbs): *dribble*

q.   Noisy Motion (1 verb, 0.36% of English manner verbs): *thunder*. This verb is defined in CALD and OED as a verb of motion, which is characterised by its sound or noise. Here it is necessary to point out that the English manner-of-

motion verb lexicon has more verbs expressing this sort of manner information, but they usually encode other manner details as well. For example, the verbs *roar*, *whiz* and *zoom* have been grouped in the category 'Rate of Motion'. An alternative analysis would have been to include these three verbs here.

5.5.2. Spanish manner verbs

In our Spanish corpus of motion verbs, we found 123 manner-of-motion verbs which amount to the 47.86% of the Spanish corpus. 50 manner verbs (i.e., 40.65% of the Spanish manner lexicon) have been grouped in terms of categories which typically express self-contained motion, whereas 73 manner verbs (i.e., 59.35% of the Spanish manner verb lexicon) encode manner details which are generally associated with translational motion.

Table 5.9 shows the distribution of Spanish manner verbs which express self-contained motion across seven manner categories.

SELF-CONTAINED MOTION	SPANISH	
	#	%
POSTURE	28	22.76%
Vertical Orientation	11	8.94%
Upwards	*5*	*4.07%*
Downwwards	*6*	*4.88%*
Horizontal Orientation	5	4.07%
Bend, Twist, Curve	5	4.07%
Unspecified Orientation	3	2.44%
Roll - Unroll	3	2.44%
To one side	1	0.81%
SHAKE, SWING, VIBRATE	11	8.94%
REVOLVE, ROTATE, SPIN	5	4.07%
BOUNCE	2	1.63%
ITERATIVE MOTION	2	1.63%
UNSTEADY MOTION	2	1.63%
UPSIDE DOWN		
TOTAL	50	40.65%
TOTAL NUMBER OF MANNER VERBS		123

Table 5.9. Distribution of Spanish manner verbs (Self-contained Motion)

As shown above, manner verbs in Spanish do not distribute uniformly across categories; in our Spanish corpus, it has been found that the majority of manner verb which expresses self-contained motion lexicalised postural notions (i.e., 28 verbs out of 50):

a.   Posture (28 verbs, 22.76% of Spanish manner verbs):

As has already been pointed out, Posture is a rich manner category denoting the different body positions assumed by the human/animal body or by objects treated as comparable to the body. Like in English, posture verbs might be grouped into the following categories:

a.1. Vertical - downwards: *agachar(se)* 'to (cause to) crouch', *agazaparse* 'to crouch, to hide oneself', *arrodillar(se)* 'to (cause to) kneel down', *asentar(se)* and *sentar(se)* 'to (cause to) sit down', *inclinar(se)* 'to (cause to) incline, bend, bow'

a.2. Vertical - upwards: *alzar(se)* 'to put up, to lift up; to rise', *empinar(se)* 'to (cause to) stand up', *encabritarse* 'to rear up', *erguir(se)* 'to (cause to) straighten, stand up', *levantar(se)* 'to (cause to) stand up'.

a.3. Horizontal: *reclinar(se)* 'to lean', *recostar(se)* 'to (cause to) lean or to lay/lie down', *acostar(se)* 'to lay down, to lie down', *echarse2* 'to lie down?, *tender(se)* 'to (cause to) stretch, to lay/lie down'. Except for *reclinar(se)*, which denotes that the Figure is leaning back in a nearly horizontal position, all these verbs seem to mean that the Figure's body ends up in a horizontal position.

a.4. Bend, Twist and Curve: *acurrucarse* 'to curl up', *arquear(se)* 'to (cause to) bend (oneself)', *curvar(se)* 'to (cause to) curve, bend', *encorvar(se)* 'to (cause to) bend, to curve', *torcer(se)2* 'to (cause to) bend'.

a.5. Unspecified orientation: *enderezar(se)* 'to (cause to) straighten, to become straight', *estirar(se)* 'to (cause to) stretch out', *extender(se)* 'to (cause to) stretch'. These verbs do not specify any information about the orientation the Figure's body at the end of the motion.

a.6. Roll- Unroll: *enrollar(se)* 'to (cause to) roll', *enroscar(se)* 'to (cause to) coil', *desenroscar(se)* 'to (cause to) uncoil'.

a.7. To one side: *ladear(se)* 'to slant, to lean'. This verb denotes that the Figure moves its body to one side; much like the English verb *dodge1*, it might be

used in contexts that imply that the Figure moves its body to one side in order to avoid something.

In general, as Talmy pointed out, Spanish posture verbs denote agentive motion, but when they incorporate the reflexive pronoun 'se', they come to denote self-contained motion (animates) and non-agentive motion (inanimates). In the category of posture verbs, four verbs which can only be pronominal (and thus, self-agentive) when expressing postural notions are also found: *acurrucarse* 'to curl up', *agazaparse* 'to crouch, to hide oneself', *echarse* 'to lie down', *encabritarse* 'to rear up'.

The rest of the verbs which express self-contained motion belong to six other manner categories. Unlike 'Posture', the following manner categories do not seem to be frequently lexicalised in the Spanish manner verb lexicon:

b.   Shake, Swing, Vibrate (11 verbs, 8.94% of Spanish manner verbs): *agitar(se)* 'to (cause to) shake, to move about', *balancear(se)* 'to (cause to) swing', *campanear* 'to swing', *estremecer(se)* 'to (cause to) tremble, shiver', *mecer(se)* 'to (cause to) swing, rock', *ondear* 'to undulate, to sway', *oscillar* 'to oscillate, to swing', *sacudir(se)* 'to shake, to shake oneself', *temblar* 'to shiver, to tremble', *tiritar* 'to shiver, to tremble', *vibrar* 'to vibrate'.

This manner category includes (a) short, sudden movements of the Figure which might be caused by fear or cold (e.g., *estremecer(se), temblar, tiritar*), and (b) swinging and oscillatory movements (e.g., *balancear(se), campanear, oscilar*).

c.   Revolve, Rotate, Spin (5 verbs, 4.07% of Spanish manner verbs): *caracolear* '(of a horse) to turn around', *girar2* 'to (cause to) rotate, spin', *piruetear* 'to pirouette', *rodar* 'to roll', *rotar* 'to rotate'.

Within this group, only *girar2* can be used as an agentive verb. Moreover, it is important to remark that *rodar* 'to roll' is defined by DUE and DRAE as a verb which can or can not denote a change of location; in other words, *rodar* may encode both self-contained and translational motion.

d.   Bounce (2 verbs, 1.63% of Spanish manner verbs): *botar* 'to (cause to) bounce, rebound', *rebotar* 'to bounce'.

Botar can be an agentive verb whereas *rebotar* does not seem to allow this usage (DUE, DRAE). The Figures of these verbs are typically balls.

e.   Iterative Motion (2 verbs, 1.63% of Spanish manner verbs): *apisonar* 'to roll flat by moving repeatedly over something, put one's feet down on the ground repeatedly', *traquetear*[28] 'to (cause to) move repeatedly, to rattle'.

f.   Unsteady Motion (2 verbs, 1.63% of Spanish manner verbs): *tambalearse* 'to move unsteadily as if it is going to fall', *vacilar* 'to move unsteadily'.

Unlike in English, no verb denoting 'Upside Down Motion' was found in our corpus of Spanish motion verbs.

In terms of manner categories pertaining to translational motion, Table 5.10 shows the general distribution of manner verbs, as well as their proportion in relation to the Spanish manner verb lexicon. For ease of illustration, the table is presented on the following page.

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[28] *Traquetear* also seems to encode some noise as result of the Figure's movement.

TRANSLATIONAL MOTION	SPANISH	
	#	%
MOTOR PATTERN	31	25.20%
Walk	24	19.51%
Run	4	3.25%
Jump	3	2.44%
VEHICLE/INSTRUMENT	14	11.38%
RATE	4	3.25%
Increase	3	2.44%
Decrease	1	0.81%
Fast		
Slow		
PATH SHAPE	4	3.25%
FORCED MOTION	3	2.44%
Energy-high	3	2.44%
Energy-low		
DANCE	3	2.44%
CONTACT BETWEEN F & G	3	2.44%
Smooth motion	2	1.63%
Body close to the ground	1	0.81%
Uncontrolled motion		
Slight contact		
OBSTRUCTED MOTION	2	1.63%
NOISY MOTION	2	1.63%
SMOOTH MOTION	1	0.81%
LEISURELY MOTION	1	0.81%
STATE OF FIGURE	1	0.81%
MOTION IN FILE	1	0.81%
MOTION IN SPORTS	1	0.81%
PLAYFUL MOTION	1	0.81%
OTHERS	1	0.81%
Trailing clothes	1	0.81%
Travel with one's belongings		
Gradual stages		
AWKWARD MOTION		
FURTIVE MOTION		
NO AIM IN MOTION		
UNCONTROLLED MOTION		
CHAR. USE OF LOWER BODY		
USE OF ONE'S HANDS/LEGS		
TOTAL	73	59.35%
TOTAL NUMBER OF MANNER VERBS		123

Table 5.10. Distribution of Spanish manner verbs (Translational Motion)

As shown in the table, the majority of manner verbs in our Spanish corpus encode 'Motor pattern' (walk, run and jump) and 'Vehicle/Instrument', whereas other manner categories seem to be less favoured for lexicalisation by themselves (though they might combine with other manner details). We begin with the manner categories which seem to be most frequently lexicalised in the Spanish manner verb lexicon:

a.   Motor pattern (31 verbs, 25.20% of Spanish manner verbs)

a.1. Walk (24 verbs, 19.51%): *andar* 'to walk', *ambular* 'to wander about', *anadear* 'to walk like a duck, to duck walk', *caminar* 'to walk', *chancletear* 'to walk noisily using flip-flops', *cojear* 'to limp', *contonearse* 'to walk swaying one's hips in a proud way', *deambular* 'to walk around', *divagar* 'to wander', *errar* 'to wander about', *gatear1* 'to crawl', *haldear* 'to walk quickly moving one's skirt/dress', *marchar* 'to march', *noctambular* 'to walk around at night', *pasear* 'to walk for pleasure', *patear2* 'to go on foot around a place', *renquear* 'to limp', *reptar* 'to crawl or to move like a reptile', *trotar1* 'of a person to trot', *vagabundear* 'to wander', *vagar* 'to wander', *zancajear* 'to walk repeatedly from one place to another', *zanquear1* 'to walk with crooked legs', *zanquear2* 'to stride'.

a.2. Run (4 verbs, 3.25%): *correr* 'to run', *corretear* 'to run about in a lively or playful way', *esprintar* 'to sprint', *galopar1* 'to gallop'

a.3. Jump (3 verbs, 2.44%): *saltar* 'to jump', *cabriolar* 'to caper about, to capriole', *brincar* 'to jump'.

Within this manner category, it can be observed that the vast majority of verbs refer to ways of walking over ways of running and jumping. Unlike in English, which carves up these three motor patterns in a more fine-grained or more granular way, Spanish manner verbs do not encode as much semantic information regarding the way the Figure moves or changes its location. Regarding the sort of manner details which are encoded in walking verbs in our Spanish corpus, we find the following features:

a.1.a 'No aim in motion' (7 verbs): *ambular*, *deambular*, *divagar*, *errar*, *vagabundear* and *vagar* 'to wander'; *noctambular* 'to walk around at night' also encodes 'Night time'.

a.1.b. 'Characteristic use of lower body' (3 verbs): *marchar* 'to march', implying regular steps in the motion; *zanquear1* 'to walk with crooked legs'; *zanquear2* 'to stride', i.e., long steps).

a.1.c. 'State of the Figure' (2 verbs): *contonearse* 'to walk swaying one's hips in a proud way', and *pasear* 'to walk for pleasure, to stroll'. As we did for English, we grouped verbs encoding the fact that the Figure walks in a leisurely manner into 'State of Figure'.

a.1.d. 'Forced Motion' + 'State of the Figure (injured)' (2 verbs): *cojear*, *renquear* 'to limp, to walk with a limp'.

a.1.e. 'Rate-fast' (2 verbs): *haldear* 'to walk quickly moving one's skirt/dress'; *trotar1* defined by dictionaries as a fast walk for both humans and animals.

a.1.f. 'Noisy Motion' (1 verb): *chancletear* 'to walk noisily using flip-flops'.

a.1.g. 'Use of one's hands/legs' (1 verb): *gatear1* 'to crawl[29], to walk using one's hands and/or legs')

a.1.h.'Contact between the Figure and the Ground' (1 verb): *reptar* 'to crawl like a reptile', that is, to walk dragging one's body.

a.1.i. 'Swinging motion' (1 verb): *anadear* 'to duckwalk'

a.1.j. 'Iterative motion' (1 verb): *zancajear* 'to walk repeatedly from one place to another'.

Andar and *caminar* simply denote to move on foot, using oneself as means of locomotion. Thus, these two verbs might be considered hyperonyms of this category. Finally, *patear2* denotes to go on foot and it seems to be used in contexts where the Figure has been walking over a large area for a long time. This verb does not seem to fit nicely in any of the categories presented above.

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[29] Unlike English *crawl,* which is defined as the Figure moving close to the ground, the Spanish verb *gatear* is defined as a way of walking (DUE, DRAE).

In terms of running verbs, apart from the hyperonym *correr*, three verbs are found in our Spanish corpus: one of them encodes 'Playful Motion' (*corretear*), another expresses the Figure's fast rate for a brief period of time (*esprintar*), and the third, *galopar1* 'to gallop', expresses running when the Figure is a horse. Finally, with respect to jumping verbs, two verbs besides the hyperonym *saltar* are found. One of them seems to be used only for horses (*cabriolar* 'to capriole'), and the other, *brincar*, denotes the same motion as *saltar* 'to jump, to push oneself into the air' (DUE, DRAE). According to the dictionary definitions, jumping verbs seem to refer to self-contained motion; a Figure can jump without changing its location. However, if these verbs are followed by prepositional phrases encoding location or direction, they can also express translational motion.

b.   Vehicle/Instrument (14 verbs, 11.38% of Spanish manner verbs)

b.1. On an animal: *cabalgar* 'to ride a horse', *galopar2* 'to ride a galloping horse', *jinetear* 'to ride a horse in a showing off manner; *trotar2* 'to ride a trotting horse'.

b.2. On/in a vehicle:

b.2.1. Unspecified vehicle: *conducir* 'to drive', *montar(se)* 'get on/onto an animal or into a vehicle', *pilotar* '(ship) to steer, (car) to drive, (plane) to fly', *navegar* '(ship or airplane) to navigate'

b.2.2. Specific vehicle/instrument: *esquiar* 'to ski', *patinar* 'to skate'.

b.2.3. Part of a vehicle: *pedalear* 'to pedal', *remar* 'to row, to paddle'.

b.3. On/in an instrument: *columpiar(se)* 'to (cause to) swing', *hamarcar(se)* 'to rock (someone or oneself) on a hammock'.

This wide category groups verbs denoting motion on animals, on/in vehicles and on/in instruments. Within the group of motion on/in vehicles, we observe (a) verbs which denote a specific vehicle or instrument; (b) verbs which imply the use of vehicles; and (c) verbs encoding a part of a given vehicle to refer to the vehicle as a whole. Like in English, we find some metonymic verbs (i.e., PART of a vehicle for the WHOLE vehicle): *pedalear* 'to pedal', which refers to motion using a bike or any

vehicle with pedals, and *remar* 'to row, to paddle', which refers to motion on a boat, etc.

c.   Rate (4 verbs, 3.25% of Spanish manner verbs): *acelerar* 'to speed up, to accelerate', *aligerar* 'to quicken, to hurry up', *apresurarse* 'to hurry up', *desacelerar* 'to slow down'.

The manner verbs in this group, which encode information about the rate of motion, express notions such as an increase (*acelerar*, *aligerar*, and *apresurarse*) or a decrease in speed (*desacelerar*).

d.   Path shape (4 verbs, 3.25% of Spanish manner verbs): *culebrear* 'to zigzag', *serpentear* 'to slither, to meander', *rodear* 'to surround with; to go round', *zigzaguear* 'to zigzag'.

Within this group of verbs, we find two verbs, namely, *culebrear* (from the noun *culebra* 'snake') and *serpentear* (from the noun *serpiente* 'snake') which denote that the Figure moves along a curved or zigzagged path such as one which is inherent to the motion of snakes. In sum, by containing the name of a given animal, these verbs typically denote the path-shape that the animal follows in its motion.

e.   Forced Motion (3 verbs, 2.44% of Spanish manner verbs): *arrojar(se)*, *lanzar(se)* and *tirar(se)* meaning 'to throw, to throw oneself'.

These verbs encode the fact that the Figure performs a high-energetic movement in its motion. This group of verbs functions basically as agentive verbs (caused motion), which are made self-agentive motion verbs by adjoining the reflexive pronoun 'se'.

f.   Dance (3 verbs, 2.44% of Spanish manner verbs): *bailar* 'to dance', *bailotear* 'to dance with little attention or in a careless way', *danzar* 'to dance'.

Unlike in English, Spanish has a verb expressing that the Figure dances in a careless way (*bailotear*). It should be noted here that the verbs *zapatear* and *taconear*, which have been grouped in 'Noisy Motion', could have been included within this category, as they are also defined as the tapping of shoes in some dances.

g.   Contact between the Figure and the Ground (3 verbs, 2.44% of Spanish manner verbs): *arrastar(se)* 'to drag something, to drag oneself, to crawl', *deslizar(se)* 'to (cause to) slide', *resbalarse* 'to slide'.

The first two verbs can be both agentive and self-agentive verbs, whereas the last is a self-agentive motion verb. In terms of the semantic information they additionally express, in *arrastrar(se)* the Figure's body is close to the Ground; *deslizar(se)* denotes smooth contact with the Ground. *Resbalarse* expresses that the Figure moves smoothly over the Ground and, according to DRAE, such motion might be uncontrolled, as when sliding on ice or on a wet floor.

h.   Obstructed Motion (2 verbs, 1.63% of Spanish manner verbs): *tropezar* 'to trip', *trompicar* 'to (cause to) trip repeteadly'.

These two verbs denote that the Figure encounters some obstacles in the course of its motion (i.e., the Figure needs to be moving or walking somewhere). Thus, these verbs might be said to imply translational motion. *Tropezar* denotes a punctual event, whereas *trompicar* is a repeated event.

i.   Noisy Motion (2 verbs, 1.63% of Spanish manner verbs): *zapatear* 'to tap shoes (when walking or dancing)', *taconear* 'to tap shoes with heels (when walking or dancing)'.

These two manner-of-motion verbs are both defined as ways of walking (thus, translational motion) and as ways of dancing (thus, self-contained motion) (DUE, DRAE). This is the reason why they have not been included in either 'Walk' (where *chancletear* 'to walk noisily while using flip-flops' is grouped) or 'Dance'.

j.   Smooth Motion (1 verb, 0.81% of Spanish manner verbs): *flotar* 'to float or to move smoothly (on liquid, on air)'.

Smooth Motion is a manner category connected to translational motion. However, this verb does not seem to imply that the Figure is moving along a path, but rather that it keeps its overall location. Thus, this verb denotes self-contained motion.

k.   Leisurely Motion: *viajar* 'to travel'

As with English *travel*, this motion verb does not seem to imply the use of a vehicle, just the fact of the Figure making a journey, which implies leisurely motion.

l.   State of the Figure: *pavonearse* 'to strut about'.

This verb is not defined in relation to a specific motor pattern, but just as the Figure having a proud attitude.

m.   Motion in file: *desfilar* 'to parade, to walk in file'.

n.   Motion in sports: *regatear* 'to dribble'.

o.   Playful Motion: *retozar* 'to frolic'.

p.   Others: *zaparrastrar* 'to move, to walk dragging one's clothing'.

As the dictionaries are not specific about whether the Figure is walking or not, this verb is not included within the category Walk (Motor pattern).

5.5.3. Discussion and Conclusions

The third group of research questions posited at the beginning of the chapter and also at the beginning of Section 5.5. asked (a) whether the English and the Spanish manner-of-motion verb lexicons lexicalise similar manner information; (b) which manner categories are typically or more frequently lexicalised in each language, and (c) whether English exhibits a higher degree of manner granularity in all subdomains of motion (e.g., human and animal locomotion, motion of objects or inanimates, motion in/on vehicles, motion while dancing, posture, etc), and, if this is not the case, in which subdomain(s) Spanish presents a richer variety of manner verbs.

We can begin to answer these questions by looking at Tables 5.11 and 5.12, which summarise the distribution of English and Spanish manner verbs in our corpus in terms of (a) the types of motion they pertain to (i.e., self-contained and translational Motion), and (b) the fine-grained manner categories that these verb encode. Additionally, the number of verbs and their percentage relative to the whole

manner lexicon of which they form a part are included. Table 5.12 is presented on the next page.

SELF-CONTAINED MOTION	ENGLISH		SPANISH	
	#	%	#	%
POSTURE	**17**	6.16%	**28**	22.76%
Vertical Orientation	6	2.17%	11	8.94%
Upwards	*2*	0.72%	*5*	4.07%
Downwwards	*4*	1.45%	*6*	4.88%
Horizontal Orientation	2	0.72%	5	4.07%
Unspecified	1	0.36%	3	2.44%
Bend, Twist, Curve	6	2.17%	5	4.07%
Roll - Unroll			3	2.44%
To one side	2	0.72%	1	0.81%
SHAKE, SWING,VIBRATE	**18**	6.52%	**11**	8.94%
REVOLVE, ROTATE, SPIN	**14**	5.07%	**5**	4.07%
BOUNCE	**1**	0.36%	**2**	1.63%
UPSIDE DOWN	**4**	1.45%		
ITERATIVE MOTION	**1**	0.36%	**2**	1.63%
UNSTEADY MOTION	**8**	2.90%	**2**	1.63%
TOTAL	**63**	**22.83%**	**50**	**40.65%**
TOTAL MANNER VERBS	**276**	**100.00%**	**123**	**100.00%**

Table 5.11. Distribution of English and Spanish manner verbs (Self-contained Motion)

TRANSLATIONAL MOTION	ENGLISH		SPANISH	
	#	%	#	%
PATH SHAPE	**3**	**1.09%**	**4**	**3.25%**
MOTOR PATTERN	**65**	**23.55%**	**31**	**25.20%**
Walk	47	17.03%	24	19.51%
Run	7	2.54%	4	3.25%
Jump	11	3.99%	3	2.44%
RATE	**35**	**12.68%**	**4**	**3.25%**
Fast	29	10.51%		
Slow	2	0.72%		
Increase	3	1.09%	3	2.44%
Decrease	1	0.36%	1	0.81%
FORCED MOTION	**2**	**0.72%**	**3**	**2.44%**
Energy-high	1	0.36%	3	2.44%
Energy-low	1	0.36%		
FURTIVE MOTION	**6**	**2.17%**		
OBSTRUCTED MOTION	**2**	**0.72%**	**2**	**1.63%**
SMOOTH MOTION	**1**	**0.36%**	**1**	**0.81%**
LEISURELY MOTION	**2**	**0.72%**	**1**	**0.81%**
NO AIM IN MOTION				
STATE OF FIGURE	**3**	**1.09%**	**1**	**0.81%**
DANCE	**19**	**6.88%**	**3**	**2.44%**
VEHICLE/INSTRUMENT	**52**	**18.84%**	**14**	**11.38%**
CONTACT BETWEEN F & G	**11**	**3.99%**	**3**	**2.44%**
Body close to the ground	4	1.45%	1	0.81%
Smooth motion	4	1.45%	2	1.63%
Uncontrolled motion	1	0.36%		
Slight contact	2	0.72%		
CHAR. USE OF LOWER BODY				
USE OF ONE'S HANDS/LEGS				
MOTION IN FILE	**1**	**0.36%**	**1**	**0.81%**
MOTION IN SPORTS	**1**	**0.36%**	**1**	**0.81%**
PLAYFUL MOTION	**6**	**2.17%**	**1**	**0.81%**
UNCONTROLLED MOTION				
AWKWARD MOTION				
NOISY MOTION	**1**	**0.36%**	**2**	**1.63%**
OTHERS	**3**	**1.09%**	**1**	**0.81%**
Travel with one's belongings	1	0.36%		
Trailing clothes			1	0.81%
Gradual stages	2	0.72%		
TOTAL	**213**	**77.17%**	**73**	**59.35%**
TOTAL MANNER VERBS	**276**	**100.00%**	**123**	**100.00%**

Table 5.12. Distribution of English and Spanish manner verbs (Translational Motion)

As shown above, both languages overall seem to be able to lexicalise a wide range of semantic information pertaining to the manners by which a Figure moves either while keeping its overall location or while going from its original location to another one.

Two chi-square tests were performed to find out whether the distribution of English and Spanish manner verbs in terms of self-contained motion categories, on the one hand, and in terms of translational motion categories, on the other, were significantly different. Our results suggest that English and Spanish differ in how they distribute their manner verbs across different categories within self-contained motion (*Chi-square* (6) = 15.62, p < 0.05) as well as within translational motion (*Chi-square* (16) = 93.79, p < 0.05).

Overall, it can be observed that English manner verbs outnumber Spanish ones (276 vs. 123 verbs). In English, 22.83% of manner verbs relate to self-contained motion, whereas 77.17% relate to translational motion. In Spanish, in contrast, the two motion categories are more balanced; 40.65% of the manner verbs refer to self-contained motion and 59.35%, to translational motion.

In terms of self-contained motion, 'Posture' (Spanish, 22.73%; English, 6.16%) and 'Shake, Swing and Vibrate' (Spanish, 8.94%; English 6.52%) are the most frequently lexicalised categories for both languages. 'Posture', nonetheless, seems to be more often exploited in the Spanish verb lexicon. As has already been shown, Spanish has a great number of verbs expressing the Figure's change of posture or orientation; these verbs generally come from agentive verbs which are made self-agentive (animates) and non-agentive (inanimates) by adding the reflexive pronoun 'se' to the verb (e.g., *sentar* 'to sit someone' – *sentar(se)* 'to sit oneself'; *torcer* 'to bend something' – *torcer(se)* 'to bend oneself', the latter of which might be used for both animates and inanimates (e.g., a tree can bend, etc)). In contrast, English posture verbs typically denote 'to be in a given position' and they need a satellite to denote 'to get into a given position' (cf. Talmy, 2000b: 80). Apart from differences in the number of posture verbs in the two languages, some semantic differences can also be noted. The English verbs in our corpus do not seem to lexicalise rolling or unrolling postural notions, which are conveyed by Spanish verbs such as *enroscar(se)* 'to coil oneself' and *desenroscar(se)* 'to uncoil oneself'.

Another interesting crosslinguistic difference is found in the verbs expressing 'Revolve, Rotate and Spin'. In English, this group of verbs can also function as agentive verbs (caused motion)—except for *piroutte*; in contrast, Spanish verbs expressing this manner of motion do not seem to be used as agentive verbs (apart from *girar2* 'to (cause to) rotate, spin'). Moreover, no 'Upside Down' motion verbs (such as English *capsize*, *overturn* and *flip*) are found in our corpus of Spanish verbs. To finish our discussion of self-contained motion, we would like to remark that some verbs within these categories might also be found in translational motion. More often than not, dictionary definitions in both languages include senses pertaining to both types of motion; for example, *slouch* is defined by most dictionaries as to walk [translational motion], sit or stand with a drooping posture [self-contained motion] (CALD, TFD, MW). English *roll* and Spanish *rodar* 'to roll' are defined as to move around an axis (i.e., self-contained motion) and as to move along a surface by turning over (i.e., translational motion) (CALD, TFD, MW, OED; DUE, DRAE). The same behaviour is also found with verbs encoding 'Unsteady Motion' (e.g., *dodder*, *stagger*, *teeter*, *totter*). These observations might suggest that the borderline between the two types of motion is thin and might be broken at some points, especially in the case of English, which seems to be able to productively use any manner verb in a translational motion frame (cf., Goldberg, 1995; Narasimham, 2003; Narasimham et al, 2006).

In terms of translational motion, 77.17% of English manner verbs and 59.35% of Spanish manner verbs generally imply translational motion. Before we proceed, the reader should note that verbs of flying and verbs of swimming, which also encode 'Motor pattern', have been analysed as denoting Motion plus two additional components: Manner ('Motor pattern') and Ground (air and water respectively). Therefore, they have not been included in this section on manner verbs per se, but rather in Section 5.3.1., where we dealt with verbs that conflate Motion, Ground and Manner.

As shown in Table 5.12, for some manner categories, namely, 'No aim in Motion', 'Characteristic use of lower body' (information about the length of steps, the shape of the legs, etc), 'Uncontrolled Motion', and 'Awkward Motion', no motion verb is found in either of these two languages. However, this does not mean

that English and Spanish do not have verbs lexicalising these notions, but rather that manner verbs encoding any of these manner details together with additional manner information have been grouped according to the additional information. As pointed out at the beginning of Section 5.5, manner verbs typically encode more than one manner detail. This has posed some problems when grouping manner verbs into the proposed manner categories since it is not clear by looking at dictionary definitions whether some manner categories (e.g., 'Motor pattern', 'Contact between Figure and Ground') are more important than others (e.g., 'Rate', 'Furtive Motion', 'Smooth Motion') for defining a motion verb, or whether all manner categories are on equal footing. Therefore, future empirical research would be needed (a) to test the validity of our analysis, that is, whether manner verbs truly encode the semantic information we have extracted from dictionaries; and (b) to shed some light on the issues of whether some types of manner information might be more important than others when categorising a motion verb (i.e., some manner details might be seen as defining features for certain verbs, but not for others), or whether all manner categories are on equal footing in the semantics of manner-of-motion verbs.

Regarding the manner categories which are most frequently lexicalised in each language, 'Motor Pattern' (23.55%), 'Vehicle/Instrument' (18.84%), 'Rate' (12.68%), and 'Dance' (6.88%) are the most frequent categories for English; on the other hand, 'Motor Pattern' (25.20%) and 'Vehicle/Instrument' (11.38%) are the most frequent categories for Spanish. Though English manner verbs generally outnumber Spanish manner verbs across manner categories implying translational motion, it can be noted that both languages devote a great part of their verb lexicon to reference to distinct motor patterns (i.e., basic locomotive abilities by humans and animals) and to motion using vehicles.

Within 'Motor pattern', we observed that walking verbs surpass running and jumping verbs both in English (47 verbs for 'Walk', 7 for 'Run' and 11 for 'Jump') and Spanish (24 for 'Walk', 4 for 'Run' and 3 for 'Jump'). This suggests that both languages organise this portion of their verb lexicon in much the same way despite quantitative differences; English and Spanish seem to be more concerned with lexicalising fine-grained information about the way the Figure walks than about how it runs or jumps. Walking is a more basic daily activity; people might run or jump

sometimes during the day, but most of the time they walk from one place to another. Thus, it might be hypothesised that most of the world's languages would be more likely to possess a more extensive manner verb lexicon for walking activities than for running or jumping activities.

In terms of the semantic information which is typically expressed in walking verbs, Table 5.13 summarises the sorts of fine-grained manner information conveyed by English and Spanish walking verbs.

WALKING VERBS	ENGLISH		SPANISH	
	#	%	#	%
State of the Figure	19	40.43%	2	8.33%
No aim in motion	8	17.02%	7	29.17%
Char. use of lower body	7	14.89%	3	12.50%
Forced Motion	4	8.51%	2	8.33%
Unsteady Motion	2	4.26%		
Awkward Motion	1	2.13%		
Furtive Motion	1	2.13%		
Swinging Motion	1	2.13%	1	4.17%
Iterative Motion			1	4.17%
Noisy Motion			1	4.17%
Contact between F & G			1	4.17%
Use of one's hands/legs			1	4.17%
Rate			2	8.33%
UNCLEAR	3	6.38%	1	4.17%
HYPERONYM(S)	1	2.13%	2	8.33%
TOTAL	47	100.00%	24	100.00%

Table 5.13. Fine-grained manner categories for Walking verbs in English and Spanish

It should be noted that the semantic nature of some walking verbs in both languages remains unclear. By relying on dictionary definitions alone, it is impossible to fit these unclear cases into any of the fine-grained categories shown above.

On the whole, both languages seem to lexicalise in their walking verbs information (a) about the physical or psychological state of the Figure (though English exploits this semantic information much more often), (b) about the way the

Figure moves its legs (whether the Figure takes long, orshort steps, etc), and (c) whether the Figure moves about aimlessly, unsteadily, awkwardly, in an effortful way, etc. In addtion, both languages have a verb expressing the swinging of the Figure while walking (*waddle*, *anadear* 'to duckwalk'). Apart from these similarities between English and Spanish, our data reveals some crosslinguistic differences. A chi-square test was carried out to find out whether the two languages differed in how they distribute their walking verbs in terms of the 13 fine-grained manner categories displayed in the table (unclear cases and hyperonyms were not counted). Our results showed that English and Spanish do differ significantly in their distributions (*Chi-square* (12) = 24, *p* < 0.05). On the one hand, in Spanish, there are some verbs expressing some sort of semantic information which does not seem to be lexicalised in the English walking verbs in our corpus: first, within 'Rate', *haldear* 'to walk quickly moving one's skirt/dress' and *trotar1*, defined by dictionaries as a fast walk for both humans and animals; second, within 'Noisy Motion', the verb *chancletear* 'to walk noisily using flip-flops'; third, within 'Use of one's hands/legs', *gatear1* 'to crawl[30], to walk using one's hands and/or legs'); fourth, within 'Contact between the Figure and the Ground', *reptar* 'to crawl like a reptile', that is, to walk dragging one's body; and finally, within 'Iterative motion', the verb *zancajear* 'to walk repeatedly from one place to another'. On the other hand, in English walking verbs, there are some verbs expressing kinds of 'Unsteady Motion', 'Awkward Motion' and 'Furtive Motion, which do not appear to be lexicalised in Spanish walking verbs: first, within 'Unsteady Motion', *paddle3* and *toddle*; second, within the 'Awkward Motion' category, *shamble* encodes the awkward and slow walking of the Figure, and third, within 'Furtive Motion', *prowl* denotes that the Figure walks around a place stealthily, so as not to be noticed. To conclude our discussion of walking verbs, we should stress that although both languages can lexicalise similar fine-grained semantic information, English exploits some fine-grained manner categories much more as shown by the larger number of verbs lexicalising mental states of the Figure and details about the way the Figure moves its legs while walking.

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[30] Unlike English *crawl,* which is defined as the Figure moving close to the ground, the Spanish verb *gatear* is defined as a way of walking (DUE, DRAE).

Regarding 'Run' and 'Jump verbs', both languages have fewer verbs for these two motor patterns than for 'Walk'. In our Spanish corpus, only four 'Run' verbs (3.25%) and three 'Jump' verbs (2.44% of Spanish manner verbs) are identified. On the other hand, in the case of English, 'Jump' verbs (11 verbs, 3.99% of English manner verbs) outnumber 'Run' verbs (7 verbs, 2.54% of English manner verbs). As pointed out earlier, the lack of agreement among English dictionary definitions with respect to whether some verbs encoding 'Rate-fast' are or are not running verbs (e.g., *bolt*, *canter*, *dash*, *dart*, *hurry*, *rush*, *scurry*, *scuttle*, *spring*, *zoom*, etc), has led us to include all these possible candidates for 'Run verbs' in the category 'Rate-fast'. The empirical research reported in Chapter 6 (Section 6.4) will address whether these verbs might be categorised as running verbs.

In terms of the semantic information 'Run' and 'Jump' verbs lexicalise in English, it has been observed that running verbs include information mostly about (a) 'Characteristic use of the lower body': length of steps (long steps in *lope*, and small steps in *scamper*) and (b) 'Rate' (fast as in *gallop* and *sprint*, or slow as in *trot* and *jog*). Jumping verbs seem to encode information about (a) the length or height of jumps (*bound*, *leap*), (b) the use of one or more legs (*hop*), (c) the use of one's hands or of a pole (*vault*). In contrast, Spanish 'Run' verbs express 'Playful Motion' (*corretear* 'to run about in a playful way') and the Figure's fast rate for a brief period of time (*esprintar* 'to sprint'). Finally, with respect to Spanish 'Jump' verbs, two verbs besides the hyperonym *saltar* have been found in our corpus: *cabriolar* 'to capriole', which seems to be used only for horses, and *brincar* which denotes the same motion as *saltar* 'to jump, to push oneself into the air' (DUE, DRAE), but seems to be used in more informal contexts.

Before we move on to deal with other manner categories which are frequently lexicalised in manner verbs in English and Spanish, we would like to raise the issue of the semantic nature of 'Jump' (Spanish 'Saltar'). On the whole, this motor pattern category seems to be quite connected with self-contained motion in the sense that when the Figure jumps, hops or pronks, it does not necessarily change its overall location. However, if jumping verbs are followed by prepositional phrases encoding direction, they can also express translational motion. Unlike 'Walk' and 'Run', which seem to need or imply the Figure's change of location (unless the Figure is

walking or running on a treadmill), it might be argued that 'Jump' in English and in Spanish is characterised or defined by the Figure's rising from the ground using its legs, which might take place at a single location or from a location to another. We will address this issue in Chapter 6 (Section 6.2).

If we consider the category 'Vehicle/Instrument', our analysis has shown that both English and Spanish posses motion verbs which encode motion on animals, in/on vehicles and in/on instruments. Furthermore, it has been pointed out that, within the group of motion on/in vehicles, both languages have (a) verbs which *denote* a specific vehicle or instrument (e.g., *bus*, *taxi*, *ship*, *jeep*, *esquiar* 'to ski', *patinar* 'to skate'), (b) verbs which *imply* the use of some vehicles (e.g., *drive*, *motor*, *journey*, *conducir* 'to drive') and (c) verbs which encode a part of a vehicle to refer to the vehicle as a whole (e.g., *oar*, *row*, *wheel*, *pedalear* 'to pedal', *remar* 'to row'). The latter group of verbs are metonymic; they refer to a part of a vehicle to activate the whole vehicle (cf. Lakoff & Johnson, 1980, 1999; Cifuentes-Honrubia, 1999). On the other hand, some crosslinguistic differences may be pointed out in this subdomain; English seems to be highly flexible in the use of almost any vehicle name[31] as a motion verb. Such flexibility seems to explain the richer manner verb lexicon in this domain as compared to Spanish; it may account as well for the impressive number of dance names which can be used as motion verbs.

Like the vast majority of vehicle verbs in English, 'Dance' verbs are also denominal verbs. It seems that any dance name is licensed as a motion verb in English. In contrast, Spanish just possesses a few manner verbs pertaining to dancing: the hyperonym *bailar* 'to dance', *danzar* 'to dance' (which seems to be used in formal contexts), and *bailotear* 'to dance in a careless way'. Curiously enough, English does not seem to lexicalise this notion (i.e., dance in a careless way) in a motion verb despite its fine-grained distinctions in this domain.

So far, we have been discussing manner categories which are frequently lexicalised either in both languages or in English. To conclude this section, two manner categories which are not frequently encoded in these languages are dealt with as they reveal further crosslinguistic differences in the semantics of English and Spanish manner verbs: 'Contact between the Figure and the Ground' and 'Noisy

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[31] It seems that nouns such as *car, baby-carriage* and *stroller* cannot be used as motion verbs.

activity'. In English, 'Contact' verbs (11 verbs, 3.99% of English manner verbs) expresses that (a) the Figure's body is close to the Ground (*crawl*, *creep2*, *grovel* and *sweep*); (b) the Figure moves smoothly over/along the Ground (*glide*, *slide*, *slip*, *slither*); (c) the Figure loses control over its motion over/along the Ground (*skid*); and (d) the Figure is just in slight contact with the Ground (*skim*, *skitter*). Moreover, some of these verbs encode further semantic information; for example, *slither* also encodes that the shape of the path that the Figure follows is similar to those of reptiles (a twisted, curved shape of path); *skim* and *skitter* denote fast speed as well; and *grovel* denotes that the Figure has a specific state of mind (humiliated). On the other hand, Spanish have 3 verbs encoding 'Contact' (2.44% of Spanish manner verbs): *arrastar(se)* 'to drag something, to drag oneself, to crawl' which denotes that the Figure's body is close to the Ground; *deslizar(se)* 'to (cause to) slide' which encodes smooth contact with the Ground; and *resbalarse* 'to slide', which encodes smooth motion over the Ground, which can also be uncontrolled. In sum, Spanish verbs encode some of the fine-grained manner details expressed by English 'Contact' verbs, but not all. For example, no verb that expresses slight contact with the ground or mental state of the Figure is found in our corpus. Regarding 'Noisy Motion', Spanish has 2 verbs (1.63% of Spanish manner verbs): *zapatear* 'to tap shoes (when walking or dancing)' and *taconear* 'to tap shoes with heels (when walking or dancing)'. These two verbs together with the walking verb *chancletear* 'to walk noisily using flip-flops', encode cultural manners of motion, which do not seem to be lexicalised into a single verb in English.

In general, our analysis of the English and the Spanish manner verb lexicons has shed light on both crosslinguistic similarities and differences between the two languages. Although the English manner verb lexicon is much larger than the Spanish one, and thus, it exploits some manner categories much more than Spanish does, we have found that both languages are able to lexicalise similar types of manner information. Our analysis has also shown that the two languages distribute their manner lexicons in different ways. In terms of the two types of motion, we have pointed out that manner verbs implying translational motion outnumber those denoting self-contained motion, but this difference was less pronounced for Spanish. This may be due, in part, to the high proportion of posture verbs in Spanish (22.76%

of the Spanish manner verb lexicon). On the other hand, in terms of translational motion, both languages devote the greatest part of their verb lexicon to reference to distinct motor patterns (i.e., basic locomotive abilities by humans and animals), but again they subdivide their lexicons differently both within the 'Motor Pattern' category and between the other manner categories. In the case of English, 'Vehicle/Instrument', 'Rate', and 'Dance' are the most frequent manner categories apart from 'Motor Pattern', whereas for Spanish, apart from 'Motor pattern', 'Vehicle/Instrument' is, to a certain extent, frequent as well but 'Rate' and 'Dance' are not. On the whole, we can conclude that the English verb lexicon seems to have greater manner granularity than the Spanish verb lexicon particularly in the subdomains of (a) human and animal locomotion (walking, running and jumping verbs), (b) motion using a vehicle, and (c) motion while dancing.

5.6. Conclusions

The present chapter has addressed three main research questions relative to the general semantic distribution of the English and Spanish motion verb lexicons, relative to their path verbs, and relative to their manner verbs.

The first and most general question asked about which semantic notions are generally conflated in the motion verbs in our corpus. Our findings suggest that the conflation of Motion plus one additional semantic component (either Manner or Path) is the most characteristic of both motion verb lexicons. In contrast, verbs expressing just Motion, and verbs conflating either two or three semantic elements along with Motion might be said to be less representative. In general, English and Spanish motion verbs seem to be to encode a wide range of semantic information pertaining both to the main Motion event and to the Co-event. However, the majority of the lexicalisation patterns attested in our corpus of motion verbs seem to be minor patterns in these languages, that is to say, they are not typical for either English or Spanish. These include, Motion + Figure, Motion + Ground, Motion + Cause, and more complex conflations of Figure, Ground and Co-events relations. Regarding crosslinguistic differences, it has been noted that some minor lexicalisation patterns are instantiated in one language but not in the other; however,

a larger sample of motion verbs might yield no differences across the two languages in this regard. In addition, Spanish tends to express the Ground of motion in their verbs, either conflated with Motion alone or with additional semantic elements, much more often than English does (i.e., 31 Spanish verbs, 12.06% of the Spanish corpus, versus 17 English verbs, 4.55% of the English corpus). On the whole, these findings contradict Talmy's speculations on the lack of Ground conflations in motion verb lexicons. It is true that ground-conflating verbs do not form the core system for expressing Motion, but it seems to be a minor pattern in both Spanish and English.

The second set of research questions enquired about the size and the semantic nature of the English and the Spanish path verb lexicons. The first question asked whether the English and the Spanish path verb lexicons were comparable in size. Our findings indicate that they are not; Spanish path verbs outnumber English path verbs. In the Spanish corpus, 63 path verbs were found, whereas in the English corpus, 44 path verbs were identified. In light of our data, the larger number of path verbs in Spanish might be attributed to path verbs which are used for specific contexts (e.g., informal contexts such as *pirarse* and *largarse* 'to go away'), for certain Figures (e.g., *zarpar* 'of a ship, to depart', *arrivar* 'of a ship to arrive'), for certain Grounds (e.g., *encumbrar* 'to reach the top of a mountain') and path verbs which encode force dynamics (e.g., *encerrar(se)* 'to put something or oneself into an enclosed place', in which the Ground restrains the Figure from going out). In addition, we may attribute the greater number of path verbs in Spanish to a group of path verbs whose etymological origin is different from English path verbs. We refer in particular to an interesting group of Spanish path verbs that originated from adverbs and nouns (e.g., *acercar(se)* from *cerca* 'near, close'; *adentrar(se)* from *dentro* 'inside'; *adelantar(se)* from *delante* 'in front of'; *alejar(se)* from *lejos* 'far'; *aproximar(se)* from *próximo* 'close'; *distanciar(se)* from *distancia* 'distance'; *encumbrar* from *en* + *cumbre* 'peak, top of a mountain'). The second research question asked whether the two path lexicons were comparable in their semantic nature. After a close examination of the types of path which are encoded by English and Spanish path verbs, we have concluded that although the two path lexicons differ in size, they are able to encode the same sorts of path information; in particular, both languages have path verbs expressing the 13 types of path used in our analysis and the distributions

of verbs across these path types do not differ significantly. Across the two languages, the most frequent types of path are 'Away from G', 'Up/Onto G – Upwards', 'To/towards G' and 'Down from/to G – Downwards'. These four types of path constitute basic spatial distinctions which might be expected to be the most frequent path types for other satellite- and verb-framed languages. Further research would be needed to test whether languages have a preference for lexicalising these types of paths over others. On the whole, our research on the English and the Spanish path verb lexicons provides support for Özçalişkan's (2004) claim that the path verb lexicons of both satellite- and verb-framed languages form a closed lexical category, but it does not support her claim on comparable size for path lexicons in the two types of language. Further crosslinguistic research should address her claims to test whether they apply beyond Turkish (the language she works on), English and Spanish.

The third set of questions dove into manner-of-motion verbs and were aimed at determining (a) whether English and Spanish manner verbs are capable of expressing similar manner information, (b) what sorts of manner details are most frequently lexicalised in English and in Spanish, and (c) whether the English manner verb lexicon exhibits a greater degree of manner granularity in all subdomains of motion, and if not, in which subdomain(s) Spanish exhibits a greater variety of manner verbs. Overall, both languages seem to be able to lexicalise a wide range of semantic information pertaining to the ways in which the Figure moves while keeping its overall location (i.e, self-contained motion) or when going from its original location to another one (i.e., translational motion). When analysing manner-of-motion verbs, we made a categorical distinction between these two types of motion. Thus, all manner-of-motion verbs were included in one of these two categories. Our findings suggest that the boundary between self-contained and translational motion is fuzzy. To put it differently, some motion verbs are defined by dictionaries as denoting both types of motion; this was especially the case for English, which seems capable of using any manner verb in a translational motion frame.

In English, the greater proportion of the manner verbs in our corpus refers to translational motion, whereas in Spanish, the proportions of verbs expressing self-

contained motion and translational motion are more balanced. In terms of self-contained motion, 'Posture' and 'Shake, Swing and Vibrate' are the most frequently lexicalised categories in both English and Spanish manner verbs. 'Posture', however, seems to be much more often exploited in the Spanish manner verb lexicon, whereas 'Revolve, Rotate, Spin', 'Upside down motion' and 'Unsteady Motion' are more often expressed by English manner verbs. In terms of translational motion, 'Motor Pattern', 'Vehicle/Instrument', 'Rate' and 'Dance' are the most frequent manner categories for English; while 'Motor Pattern' and 'Vehicle/Instrument' are the two most frequent categories for Spanish. Although English manner verbs generally outnumber Spanish manner verbs across manner categories implying translational motion, we have found that both languages devote a great part of their manner verb lexicon to basic locomotive abilities by humans and animals (i.e., motor patterns) and to motion using vehicles. In terms of motor patterns, we have found that walking verbs surpass running and jumping verbs both in English and in Spanish. This finding suggests that the two languages organise their verb lexicon along the same lines despite differences in the number of manner verbs; although English walking, running and jumping verbs outnumber those of Spanish, both languages seem to be more concerned with lexicalising fine-grained information about the way the Figure walks than about the way it runs or jumps. Additionally, we have noted that English and Spanish walking verbs encode similar manner information, but that English is much more likely to exploit some fine-grained manner categories; in particular, manner information about the mental and physical state of the Figure and details about the way the Figure moves its legs while walking. Surprisingly, we came across 3 Spanish manner verbs which are deeply rooted in the Spanish culture: *chancletear* 'to walk noisily using flip-flops', *taconear* 'to tap heels while walking or dancing' and *zapatear* 'to tap shoes while walking or dancing'. These semantic notions (i.e., 'Noisy motion' + 'mp-walk'/'Dance') do not seem to be lexicalised in any English walk or dance verb. As Papafragou et al. (2002: 193) noted, 'languages differ in their lexicons in ways that seem intimately related to cultural preoccupations'. In terms of motion using a vehicle, our analysis has shown that both English and Spanish possess motion verbs which encode motion on animals, in/on vehicles and in/on instruments. Furthermore, we pointed out that, within the group of motion on/in

vehicles, both languages have (a) verbs which *denote* a specific vehicle or instrument (e.g., *bus*, *taxi*, *ship*, *jeep*, *esquiar* 'to ski', *patinar* 'to skate'), (b) verbs which *imply* the use of particular vehicles (e.g., *drive*, *motor*, *journey*, *conducir* 'to drive') and (c) verbs which encode a part of a vehicle to refer to the vehicle as a whole (e.g., *oar*, *row*, *wheel*, *pedalear* 'to pedal', *remar* 'to row'). Again, unlike Spanish, English seems to be highly flexible in the use of almost any vehicle name as a motion verb; this flexibility extends to the use of dance nouns as motion verbs as well. Therefore, we can conclude that the English motion verb lexicon has a greater variety of manner verbs than the Spanish motion verb lexicon in at least three subdomains of motion: human and animal locomotion, motion using a vehicle, and motion while dancing.

The semantic analysis of the English and the Spanish motion verb lexicons provides a solid linguistic and typological foundation for an exploration of the semantics of motion verbs from an experimental point of view. The analysis has raised a major question concerning the semantic nature of motion verbs: Do motion verbs mean what dictionaries say they do? This, in turn, raises specific questions in terms of the psycholinguistic reality of the results of our analysis. By way of illustration, in the case of verbs which have been analysed as encoding Motion + Path + Manner (e.g., *climb*, *dive*, *plummet*, *plunge*, *slink*, *abalanzarse* 'to dash to', *trepar* 'to climb'), it would be interesting to test whether, according to native speakers, these verbs encode both Path and Manner information, as it would be expected from our analysis, or whether these verbs simply encode Manner of motion which typically occurs with specific paths of motion and thus, the trajectory of motion is merely an interpretation arising from context. Naming and typicality judgment tasks using video clips with changed paths and changed manners might help to unveil the semantic nature of this group of verbs. For example, would an event be labelled by *dive* or judged as typical of *diving* if (a) the Figure does not move in a rapid, high energetic way and (b) if the Figure does not follow a downwards path? In the case of Path verbs, it was noted that some English verbs, namely *hound*, *pursue* and *shadow*, seem to encode manner information besides the 'After G' type of path. This might also be tested empirically. However, to address all

these questions falls outside the limits of this dissertation and will be left for future research.

In conclusion, our methodology has enabled us to compare and contrast English and Spanish motion verbs and to shed some light on the ways these two languages, often taken as prototypical examples of Talmy's typology for Motion, organise their motion verb lexicons. Apart from many similarities in the general distribution of motion verbs, in their path verbs, and in their manner verbs, crosslinguistic differences have also been pointed out. We conclude with what Berman & Slobin (1994: 118) pointed out for their own research, '[a]s a general caveat, it should be remembered that typological characterizations often reflect tendencies rather than absolute differences between languages'.

CHAPTER 6

AN EMPIRICAL LOOK AT HUMAN LOCOMOTION VERBS

6.1. Introduction

6.2. The meaning of move, walk, run and jump

6.2.1. Introduction

6.2.2. Method

6.2.3. Results

6.2.4. Discussion and conclusions

6.3. Walking, running and jumping Verbs

6.3.1. Introduction

6.3.2. Method

6.3.3. Results

6.3.4. Discussion and conclusions

6.4. Categorisation of human locomotion verbs

6.4.1. Introduction

6.4.2. Method

6.4.3. Results

6.4.4. Discussion and conclusions

6.5. Conclusions

6.1. Introduction

Motion verb lexicons exhibit a highly complex semantic nature. The semantic analysis of the English and the Spanish motion verb lexicons carried out in the previous chapter has provided a solid linguistic and typological foundation to set off to explore the semantics of motion verbs from an experimental point of view. A semantic analysis based on dictionaries or on the linguist's introspections does not permit a researcher to talk about the speaker's mental representations of the meanings of motion verbs. Such fine-grained semantic analysis should be regarded as a mere instrument for representing the products of linguistic analysis and not as a mirror of the speaker's mind (cf. Sandra & Rice, 1995). If these analyses are to be taken as indicative of the meanings of the words, they must be validated experimentally. It is necessary to resort to native speakers and carefully designed empirical work in order to begin to know what actually goes on in their minds.

In the present chapter we are concerned with human locomotion verbs[1]. The domain of human locomotion is universally experienced and may be structured around three motor patterns pertaining to motion on land: English 'Walk'-Spanish 'Andar', Eng. 'Run'- Sp. 'Correr', and Eng. 'Jump'- Sp. 'Saltar'. Walking seem to be the most important and basic human motor pattern; it is the default way of moving for humans, whereas running and jumping seem to be more peripheral as people do not typically run or jump in order to go somewhere. This chapter reports three experimental studies on human locomotion whose main goals are (a) to explore the defining features for each human motor pattern (i.e., 'Walk', 'Run' and 'Jump' in addition to the general category 'Move'), (b) to provide empirical evidence for the claim that English and Spanish organise their human locomotion verb lexicons in similar ways (i.e., larger number of walking verbs over running or jumping verbs), and (c) to determine the specific motor pattern ('Walk', 'Run' and 'Jump') which is denoted or implied by a list of verbs from our corpus.

In the first study (the Definition and Feature Listing task) we asked English and Spanish native speaker to define the verbs *move*, *walk*, *run* and *jump*, and to list

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[1] The reader should note that many manner-of-motion verbs, i.e., *walk, run, jump* and some of their hyperonyms, pertain to both human and animal locomotion.

their defining features (i.e., the sorts of manner information which make a given action be labelled by these verbs). This study aims at eliciting what speakers think about the meaning of these verbs. In the second study (the Free Verb Listing task), we asked English and Spanish native speakers to list verbs within one minute time limit in order to (a) test experimentally the claim that both languages organise their lexicons along the same lines, and (b) find out prototypical verbs for the general category 'Move' as well as for the three motor pattern categories 'Walk', 'Run' and 'Jump'. Finally, the third study (the Rating task) addresses whether a list of English and Spanish human locomotion verbs are or are not good examples of the three motor patterns; participants were asked to rate on separate scales whether verb X was as a way/kind of walking, or running, and of jumping.

6.2. The meaning of move, walk, run and jump

6.2.1. Introduction

As stated earlier, it is necessary to resort to language users if we want to know about the mental representations of motion verbs. In this section, we report the results from an experimental study in which we asked English and Spanish native speakers to define four motion verbs (*move-moverse*, *walk-andar*, *run-correr* and *jump-saltar*) and to list their defining features. By doing so, we begin to elicit what is going on in the language users' minds; additionally, we tested whether the fine-grained semantic distinctions employed in Chapter 5 are or not relevant for speakers by looking at their explicit mention across definitions.

Our predictions are drawn from the semantic analysis carried out in the previous chapter: first, *move-moverse* is expected to be defined as both translational and self-contained motion; the Figure can move while keeping its overall location or changing it. Second, *walk-andar* is expected to be described as the most basic motor pattern, with special attention to the use of the Figure's legs and to the Figure as means of locomotion in order to change location (i.e., translational motion); third, *run-correr* is expected to be defined as a translational motion verb characterised by a fast way of moving by using one's legs; and finally, *jump-saltar* is expected to be

described as both self-contained and translational motion, characterised by the energetic Figure's pushing off the ground.

6.2.2. Method

Subjects

A total of 51 English speakers (12 for *move*, 13 for *walk*, 14 for *run* and 12 for *jump*) and 60 Spanish speakers (16 for *moverse* 'to move', 16 for *andar* 'to walk', 14 for *correr* 'to run' and 14 for *saltar* 'to jump') took part in the study. English speakers were undergraduate students at the University of Louisiana at Lafayette (US); Spanish speakers were undergraduate students at the University of Murcia (Spain). All participants volunteered to participate.

Procedure

We asked our participants 'What is to move / walk / run / jump? That is, which are the features that define the action of moving / walking /running / jumping?' for English, and '¿Qué es moverse/ andar/ correr / saltar? Es decir, ¿cuáles son las características que definen la acción de moverse/ andar /correr/ saltar?' for Spanish (See Appendix 3). Each participant was asked about only one verb. They were told to write down their answers on the sheet provided. This task had no time limit.

Design

Language (English and Spanish) and verb category (Move, Walk, Run and Jump) were the between-subjects independent variables. The number of semantic features contained in participants' definitions was the dependent variable.

Coding

In order to consistently name the semantic features which participants either listed or made explicit in their definitions, we took into account those outlined in the methodology section in Chapter 5.

6.2.3. Results

Overall, the following semantic information was included in participants' responses across the four motion verbs: type of motion (self-contained and translational motion), agentivity (self-agentive, non-agentive, agentive motion), Figure (human, non-human), Manner (use of legs, feet; use of arms; push off ground into air; 'Rate', 'Forced Motion') and Path (any Path, vertical Path, horizontal Path). For ease of crosslinguistic comparison, one table for each motion verb is displayed; tables group results from the two language groups and the data within each table are sorted by the most frequently mentioned features in English.

Move / Moverse

Table 6.1 shows the semantic features contained in participants' definitions for English *move* and Spanish *moverse* as well as the percentage of participants per language who included each feature.

	ENGLISH	SPANISH
Translational Motion	26.92%	42.86%
Agentive Motion	19.23%	0.00%
Non-human Figure	19.23%	3.57%
Human Figure	11.54%	7.14%
Self-Agentive Motion	7.69%	3.57%
Self-contained Motion	7.69%	39.29%
Any Path	3.85%	0.00%
Manner	3.85%	3.57%
TOTAL	**100.00%**	**100.00%**

Table 6.1. Semantic information included in definitions of *move / moverse*

As predicted, both English and Spanish participants considered that these verbs refer to translational and self-contained motion. Moreover, both language groups included in their definitions that these verbs denote self-agentive motion, motion of human and non-human Figures (such as animals) and motion in a particular Manner. Unlike Spanish participants, English participants also made reference to agentive uses of *move* (e.g., 'displacement of a physical object through time or space. Can be

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accomplished through external or internal forces') and to the possibility of the Figure following any Path (e.g., 'to go in many directions').

Walk / Andar

As Table 6.2 illustrates, English *walk* and Spanish *andar* are generally defined as particular ways of locomotion by moving one's legs/feet in order to go somewhere; 'Use of legs, feet' and 'Translational Motion' were the most frequent defining features across the two language groups. These results support our predictions. It should also be noted that a higher percentage of Spanish participants talked about 'Translational Motion' (i.e., Spanish, 41.18% vs. English, 26.32%). In addition, these verbs were also defined in terms of a slow rate of motion (e.g., 'non strained pace', 'slow pace'), and explicit mention to human Figures was common, although Spanish participants also included animals in their definitions: 'acción que implica un movimiento animal o humano a través de las piernas', lit. 'action that implies an animal or human movement by using the legs'). Unlike *walk*, Spanish *andar* is additionally described as a self-agentive motion verb (e.g., 'desplazarse voluntariamente', lit. 'to change one's location voluntarily') in which the Figure can follow any Path (e.g., 'en cualquier dirección' lit. 'in any direction').

	ENGLISH	SPANISH
Use of legs, feet	47.37%	29.41%
Translational Motion	26.32%	41.18%
Rate	21.05%	5.88%
Human Figure	5.26%	5.88%
Any Path	0.00%	5.88%
Non-human Figure	0.00%	5.88%
Self-Agentive Motion	0.00%	5.88%
TOTAL	**100.00%**	**100.00%**

Table 6.2. Semantic information included in definitions of *walk / andar*

Run / Correr

Interestingly, seven English participants defined *run* in terms of *walking* and three did in terms of *jogging*[2]. Five Spanish participants defined *correr* in terms of *walking*[3]. Table 6.3 summarises the semantic features contained in participants' definitions for these verbs and the total percentage of participants who mentioned each feature.

	ENGLISH	SPANISH
Rate	30.77%	41.18%
Use of legs, feet	20.51%	17.65%
Translational Motion	15.38%	32.35%
Use of arms	12.82%	0.00%
Human Figure	7.69%	2.94%
Any Path	5.13%	2.94%
Non-human Figure	5.13%	0.00%
Push off ground into air	2.56%	2.94%
TOTAL	**100.00%**	**100.00%**

Table 6.3. Semantic information included in definitions for *run / correr*

On the whole, 'Rate' is the most frequent defining feature across the two languages. Furthermore, participants frequently described *run* and *correr* as motion verbs denoting that the Figure goes from one place to another (i.e., translational motion). Thus, as predicted, fast rate of motion and translational motion seem to be part of the meaning of *run* and *correr*. As with *walk-andar*, Spanish participants made reference to 'Translational Motion' more often than English participants (i.e., Spanish, 32.35% vs. English, 15.38%). Additionally, English participants specified in their definitions

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[2] As examples, English participants provided these definitions: 'it is similar to walking but faster', 'to run is to use one's legs as a form of locomotion, but at a faster rate than walking', 'to run is to move faster than jogging'.

[3] By way of illustration, Spanish participants provided definitions such as: 'desplazarse rápidamente, caminar muy deprisa', literally, 'to change one's location quickly, to walk very fast/quickly'; 'modo natural de desplazarse un ser humano, parecido a caminar', literally, 'natural way of human locomotion, similar to walk'.

the way in which the Figure moves its arms, such as 'arms move back and forth while bent at elbow' and 'to run is to move quickly while bending your legs. You use your arms and go very fast'.

Jump / Saltar

Table 6.4 summarises the semantic information contained in participants' definitions for *jump* and *saltar* and the percentage of participants who mentioned each feature in their definitions.

	ENGLISH	SPANISH
Push off ground into air	29.63%	27.03%
Vertical Path	25.93%	21.62%
Forced motion	18.52%	10.81%
Use of legs, feet	18.52%	27.03%
Human Figure	3.70%	0.00%
Use of arms	3.70%	0.00%
Avoid an obstacle	0.00%	2.70%
Horizontal Path	0.00%	5.41%
Rate of Motion	0.00%	2.70%
Translational Motion	0.00%	2.70%
TOTAL	**100.00%**	**100.00%**

Table 6.4. Semantic information included in definitions for *jump / saltar*

As we saw with *run-correr*, participants described motion verbs using other motion verbs; one English participant defined *jump* using *hop*[4] and another using *bounce*[5]. These motion verbs are manner-of-motion verbs; the former was analysed in Chapter 5 as a way of jumping ('Motor Pattern' category within translational motion)

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[4] The participant's definition was: 'Hop. Moving up and down on your two feet in place. Movement of the two feet and legs at the same time'.

[5] The participant's definition was: 'Bouncing up and down, being lifted off the ground by one's own force. A person going up off the ground, then coming back down'.

whereas the latter was included within the self-contained manner category 'Bounce'. In Spanish, one participant defined *saltar* by relating it to *caminar*[6] 'to walk'.

On the whole, the first four features, namely, 'Push off ground into air', 'Vertical Path', 'Forced Motion' and 'Use of legs, feet' were the most frequently mentioned features in participants' definitions across the two languages. Additionally, English participants made explicit mention of a human Figure which might use his/her arms in order to jump higher; Spanish participants included in their definitions the possibility of avoidance of an obstacle, horizontal paths (forwards) and fast rate of motion. Unlike in definitions for *move*, *walk* and *run*, only one Spanish participant mentioned that *saltar* denotes the Figure's change of location ('Translational Motion'). Therefore, it might be concluded that translational motion does not seem to be a defining feature for *jump*, at least according to our English participants, though it might be for Spanish *saltar*.

6.2.4. Discussion and conclusions

In line with our predictions, *move* and *moverse* are motion verbs which denote both translational and self-contained motion; *walk* and *andar* are typically defined as the most basic human motor pattern in order to change one's location; *run* and *correr* are translational motion verbs characterised by a fast way of moving by using one's legs; and *jump* and *saltar* are motion verbs defined by a Figure's pushing off the ground.

Despite the similarities in their definitions, some crosslinguistic differences have also been pointed out. In particular, English speakers included in their definitions information about the manner in which the Figure moves his/her arms while walking, and occasionally while running and jumping. Explicit mention of this sort of manner information is lacking from Spanish definitions. This suggests that Spanish speakers might pay less attention to additional manner details of the walking, running or jumping events. Moreover, it was noted that Spanish participants generally mentioned 'Translational Motion' in their definitions more frequently than English participants; this might suggest that the Figure's change of location is a more

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[6] The participant's definition was: 'desplazarse dando saltos, caminar dando saltos', literally, 'to change one's location by giving jumps, walk giving jumps'.

prominent part of the semantics of these Spanish motion verbs. Finally, it was found that, unlike in definitions for *move*, *walk* and *run*, none of the English participants and only one Spanish participant mentioned that *saltar* denotes the Figure's change of location. In consequence, it might be argued that translational motion does not seem to be a defining feature for *jump* but it might be so for its Spanish counterpart. Coming back to our discussion about these verbs in the previous chapter, it should be recalled that dictionary definitions included references to both translational motion and self-contained motion for *jump* and *saltar*, but we argued that jumping verbs are very much connected to self-contained motion as the Figure does not necessarily change its location while performing these activities. All in all, it could be concluded that *jump* and *saltar* are self-contained motion activities which can or cannot occur in the course of the Figure's translational motion (e.g., while walking, running, etc), whereas *walk-andar* and *run-correr* typically are translational motion activities.

Interestingly enough, English and Spanish participants defined *run-correr* and *jump-saltar* in terms of other motion verbs. *Run* and *correr* were defined in terms of walking with the explicit mention of a faster speed; this might be interpreted as if *run* and *correr* are rapid ways of walking. *Jump* was defined by mentioning two specific manner verbs, whereas *saltar* was defined in relation to *andar* 'to walk'. This suggests that *saltar* might be seen as a particular way of moving which tends to take place while walking, and thus, this might explain why Spanish *saltar*, unlike its English counterpart, was defined as a translational motion verb.

On the whole, this experimental study provides us with the first insights into speakers' representations of some basic motion verbs. In addition, it examined how the different types of semantic information employed for the semantic analysis in Chapter 5 come into play when examining speakers' definitions of these motion verbs.

6.3. Walking, running and jumping Verbs

6.3.1. Introduction

The semantic analysis of English and Spanish motion verb lexicons has shown that both languages exhibit greater manner granularity of walking verbs over running and jumping verbs. In this section we report an experimental study in which we intend to provide empirical evidence for these findings. The method used is known as 'Free Listing' or 'The Production Method'. Categorisation research during the 70s (cf. Battig & Montague, 1969; Freedman & Loftus, 1971; Rosch, 1973, 1975) showed that participants list the best examples or prototypical members of a category first. Furthermore, it has been found that (a) the items which were listed first are more entrenched and more frequently used than the ones listed later or even no listed at all, and that (b) the mean number of listed items is correlated with the total number of items in the category. Therefore, participants would list more items for wider categories (e.g., 'Move') than for narrower ones (e.g., 'Jump').

The research questions of this study are (1) whether English speakers would list more manner-of-motion verbs for all categories than would Spanish speakers; (2) whether, across languages, the Move category would contain the greatest variety of manner-of-motion verbs, and (3) whether the Walk category would be richer or more varied in terms of manner verbs than the Run or Jump categories. Additionally, we would like to identify the prototypical verbs for each motor pattern category in addition to the prototypical verbs for the superordinate category 'Move'.

Our predictions are the following: first, English speakers will list far more manner verbs for each category than will Spanish participants, as the English manner lexicon is richer. Second, for both languages, participants will list more manner verbs for the 'Move' category than for the other three categories as *move* is their superordinate verb. Third, a higher number of manner verbs will be listed for the 'Walk' category over the 'Run' and 'Jump' categories, as walking is hypothesised to be a more basic human motion activity than running and jumping.

6.3.2. Method

Subjects

The participants in Study 1 (the Definition and Feature Listing task) also participated in this study. Care was taken to ensure they did not get the same verb in both tasks. 64 English speakers (19 for 'Move', 15 each for the categories 'Walk', 'Run', and 'Jump') and 68 Spanish speakers (17 for each verb category) took part in the study. English speakers were undergraduate students at the University of Louisiana at Lafayette (US); Spanish speakers were undergraduate students at the University of Murcia (Spain). All participants volunteered to participate.

Procedure

We asked our participants 'In what ways can a human move / walk / run / jump?' for English and '¿De qué modos puede una persona moverse / andar / correr / saltar?' for Spanish. Each participant was asked about only one verb (either *move* or *walk* or *run* or *jump*). The instructions were given in written form (see Appendix 3). Participants were told to write down all the verbs which answer the question on the sheet provided. A time limit of 1 minute was given.

Design

Language (English and Spanish) and verb category (Move, Walk, Run and Jump) were between-subjects independent variables. The number of listed motion verbs was the dependent variable.

Coding

Our participants listed verbs which do not pertain to motion (e.g., *sing*, *talk*, *think*, *touch*, *jugar* 'play', *titubear* 'to hesitate'), as well as adverbs (e.g., *fast*, *slow*, *high*, *far*, *backwards*, *sideways*, *upside down*, *despacio* 'slow'), noun phrases (e.g., *one foot*, *both feet*, *inside*, *salto de longitud* 'long jump') and prepositional phrases (e.g., *a saltos* 'by jumps', *de espaldas* 'by going backwards', *de puntillas* 'on tiptoes'). Moreover, participants listed a wide range of motion verbs other than manner verbs (e.g., path verbs, verbs encoding Figure, general motion verbs, etc) and collocations or complex verb phrases (e.g., *make your way*, *drag your feet*, *hacer footing* lit. 'do

footing', *darse prisa* 'hurry up'). These items were left out from the analyses which were carried out to test the three predictions regarding the size of the manner-of-motion lexicons in English and Spanish. However, their presence across subjects should not be overlooked[7] and their occurrences in both languages have been quantified in the next section.

6.3.3. Results

LISTED ITEMS

For clarity of exposition, we begin with what English speakers responded when asked about each verb category and then we move on with Spanish speakers' responses. After this, a summary table will be presented (Table 6.5).

       'Move': 19 English participants listed 186 items, out of which 168 were all motion verbs (90.32% of participants' responses, 63 verb types). The other 18 items (9.68% of participants' responses) were: 5 non-motion verbs (*babble*, *darf?*, *sing*, *talk*, *touch*, *write*), 3 adverbs (*quick*, *fast* (2 tokens), *slow*(2 tokens)), 2 noun phrases (*both feet*, *one foot*), and 5 adverbs[8] (*backwards*, *forwards*, *sideways*, *upside down*, *rightside up*). Within motion verbs, *exercise*, *fight*, *kick* (2 tokens), *knee*, *nod* and *punch* were listed in addition to 3 path verb types (*fall* (3 tokens), *go* (2 tokens), *reach*) and 53 manner types. Manner verbs amount to 155 occurrences or tokens (83.33% of the responses): *bend* (2)[9], *bicycle*, *bike*, *bounce* (2), *climb*, *crawl*, *dance* (6), *drive* (3), *duck-walk*, *flee*, *fly* (5), *glide* (2), *hop* (6), *jog* (10), *jump* (12), *leap* (2), *pace*, *run* (18), *shake* (2), *shiver*, *shuffle*, *skate* (2), *ski* (3), *skip* (9), *slide* (3), *slither*,

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[7] Two participants for English *walk*, six each for English *run* and *jump* only listed adverbs and satellites. One participant for Spanish *run* and three for Spanish *jump* only listed adverbials, namely, adverbs, prepositional phrases and noun phrases encoding manner information.

[8] This group of adverbs denotes that the Figure is moving along an unspecified path which seems to be defined in terms of the frame of reference of the Figure, and not relative to an external frame of reference. It could be argued, however, that they also refer to the way the Figure is moving, for example, in *backwards* the Figure moves facing in the opposite direction (cf. Feist, *submitted*).

[9] The number in brackets refers to the number of occurrences or tokens, that is, the number of times that the item was listed by participants. When an item is not followed by a number, it means that it was just listed once across participants.

snowboard, *spring*, *sprint*, *squat*, *step*, *stomp*, *stretch*, *stroll* (3), *strut*, *stumble*, *sway* (2), *swim* (6), *swing* (2), *teeter*, *throw*, *tiptoe* (2), *totter*, *trip* (2), *trot*, *turn* (2), *twirl*, *twist*, *waddle*, *walk* (16), *waltz* (2), *wave*, *wiggle*, *wobble* (2).

'Walk': 15 English participants listed 90 items, out of which 71 were motion verbs (78.89% of participants' responses, 42 verb types) and 19 items (21.11%, 12 types) were adverbs expressing manner (11 types: *angry*, *brisk* (2), *goofy*, *loud*, *quick* (2), *soft*, *tiresome*, *slowly*, *hurriedly*, *slow* (3), *fast* (4)) and a non-motion verb (*think*). Within motion verbs, 2 complex verb phrases (*drag your feet*, *make your way*), 2 agentive verbs (*lift*, *carry*), the general motion verb *move* (5 tokens), 2 Path verbs (*go*, *fall*), the verb *walk* and 34 manner verb types were listed (65.56% of the total responses, 59 occurrences). Participants listed the following manner verbs: *amble*, *careen*, *frolick*, *gallop* (3), *glide*, *hop* (3), *jog* (3), *jump*, *limp*, *lope*, *lumber*, *march*, *moonwalk*, *pace* (2), *powerwalk*, *propel*, *run* (7), *saunter*, *sidle*, *skip* (4), *slide*, *slither* (2), *sneak*, *sprint*, *stamp*, *step* (2), *storm*, *stretch*, *stride* (2), *stroll* (3), *strut* (4), *travel*, *trot*, *waddle.* Note that the verb *walk* was listed once.

'Run': 15 English participants listed 52 items, out of which 24 were motion verbs (46.15% of participants' responses, 12 verb types) and 28 items (53.85% , 15 types) were: 1 noun (*inside*), 6 satellites (*away*, *up*, *to*, *into*, *from*, *down*), 18 occurrences of adverbs (*quickly*, *slowly*, *quietly*, *powerfully*, *fast*, *slow*) and two prepositional phrases (*around the block*, *in shoes*). In addition, within the group of motion verbs, the verb *move* (1 occurrence) and 11 manner verb types were listed with a total of 23 occurrences (44.23% of all responses): *dart*, *gallop* (2), *hop*, *jog* (5), *leap*, *race* (2), *skip* (3), *speed*, *sprint* (3), *trample*, *walk* (3).

'Jump': 15 English participants listed 95 items, out of which 42 were motion verbs (44.21% of participants' responses, 13 verb types) and 53 items (57.61%, 39 types) were as follows: 1 non-motion verb (*make air*), 18 occurrences of adverbs and adjectives (*one-legged*, *aggressive*, *elongated*, *graceful*, *long*, *loud*, *mass up*, *pretty*, *short*, *weak*, *fast*, *high*, *slow*, *low*), 22 occurrences of satellites (*above*, *across*, *around*, *away*, *down*, *from*, *into*, *off*, *onto*, *out*, *over*, *round*, *to*, *under*, *up*), and 12 occurrences of adverbs (*back*, *backward*, *far*, *forward*, *forward and backward*, *near*, *side-to-side*, *sideways*, *up and down*). These items amount to 57.61% of English participants' responses. Within motion verbs, the verb *jump* was listed once, 2 other

motion verbs (*push*, *release*), 2 path verbs (*lift* (2), *rise*) and 9 manner verb types were listed with a total of 36 occurrences (*bounce* (5), *bound* (2), *flip*, *glide*, *hop* (9), *leap* (8), *run*, *skip* (7), *spring* (2)). Manner verbs amount to 37.89% of participants' responses.

'Moverse': 17 Spanish participants listed 145 items, all of which were verbs (45 verb types). Within these verbs, 2 non-motion verbs (*soñar* 'to dream', *jugar* 'to play'), 7 complex verb phrases (*hacer footing* lit.'do footing', *hacer gestos* 'make gestures', *dar un puñetazo* 'give a punch', *ir de puntillas* (2 tokens) 'to go on tiptoes', *ir agachado* 'to go with a crouched posture', *ir a la pata coja* 'to go by moving on one leg', *saltar a la pata coja* 'to jump on one leg'), 19 occurrences of Path verbs (*ir* 'to go', *bajar* 'to go down', *entrar* 'to enter', *subir* 'to go up', *salir* 'to exit', *volver* 'to go back'), 1 motion verb encoding an unspecified ground (*recorrer* 'to move around an area'), 2 general motion verbs (*moverse* 'to move', *desplazarse* 'to change one's location') and 32 manner verb types were listed. These manner verbs amount to 113 occurrences, that is, 77.93% of the participants' responses: *agacharse* 'to crouch', *andar* 'to walk' (16) , *arrastrarse* 'to drag oneself' (6), *bailar* 'to dance' (4), *balancearse* 'to swing oneself', *brincar* 'to jump (informal)' (4), *bucear* 'to dive' (3), *caminar* 'to walk' (7), *cojear* 'to limp', *conducir* 'to drive', *correr* 'to run' (17), *deslizarse* 'to slide' (3), *esquiar* 'to ski', *gatear* 'to crawl' (5), *girarse* 'to turn oneself', *haldar* 'to walk quickly while wearing skirts, dresses', *huir* 'to flee', *levantarse* 'to get up', *nadar* 'to swim' (4), *pasear* 'to stroll' (6), *patear* 'to go on foot around a place for a long time', *patinar* 'to skate', *pedalear* 'to pedal', *reptar* 'to crawl, slither', *saltar* 'to jump' (16), *sentarse* 'to sit oneself down', *tambalearse* 'to move unsteadily', *temblar* 'to tremble, to shiver', *trepar* 'to climb, to scale', *trotar* 'to trot' (3), *viajar* 'to travel' (3), *volar* 'to fly'.

'Andar': 17 Spanish participants listed 82 items, out of which 68 were motion verbs (82.93% of participants' responses, 26 verb types) and 14 items (17.07% of participants' responses, 8 types) were 1 non-motion verb (*titubear* 'to hesitate'), 6 occurrences of 2 adverbs (*despacio* 'slow', *rápido* 'fast') and 7 occurrences of prepositional phrases (*a gatas* 'in a crawling posture', *a pie* 'on foot', *de espaldas* 'backwards' (2), *de puntillas* 'on tiptoes' (2), *de rodillas* 'on one's

knees'). Further, within the motion verbs, participants listed *andar* 'to walk' (3 tokens), *mover*, *moverse* 'to move', 1 motion verb encoding an unspecified ground (*recorrer* 'to move around an area' (2 tokens)), 1 Path verb (*cruzar* 'to cross'), 3 complex verb phrases (*dar saltitos* lit. 'to give small jumps', *dar tumbos* 'to go from a place to another with no purpose', *arrastrar los pies* 'to drag one's feet') and 18 manner verb types. These manner verbs amount to 57 ocurrences (69.51% of participants' responses): *arrastrarse* 'to drag oneself' (2), *brincar* 'to jump (informal)' (2), *caminar* 'to walk' (5), *cojear* 'to limp', *correr* 'to run' (14), *corretear* 'to run about (playfully)', *deambular* 'to wander about', *deslizarse* 'to slide', *esprintar* 'to sprint', *gatear* 'to crawl' (3), *pasear* 'to stroll' (7), *patear* 'to go on foot around a place for a long time' (2), *pedalear* 'to pedal', *rondar* 'to be on patrol, to prowl about', *saltar* 'to jump' (9), *trotar* 'to trot' (4), *vagabundear* 'to wander', *vagar* 'to wander'.

'Correr': 17 Spanish subject listed 63 items, out of which 45 were motion verbs (71.43% of participants' responses, 19 verb types) and 18 items (28.57% of participants' responses, 15 types) were 1 non-motion verb (*respirar* 'to breathe'), 11 occurrences of adverbs and adjectives (*deprisa* 'fast', *despacio* 'slow', *lenta* 'slow', *lentamente* 'slowly', *lentísima* 'really slow', *muy lenta* 'really slow', *rapidísimo* 'really fast', *rápido* 'quick, fast', *super lento* 'really slow') and 6 occurrences of prepositional phrases (*a pasos cortos* 'with short steps', *a pasos largos* 'with long steps', *a saltos* 'with jumps', *con ayuda* 'with help', *en sprint* 'in sprint'). Within motion verbs, 4 complex verb phrases (*hacer footing* lit. 'to do jogging' (3), *darse prisa* 'to hurry up'), the general verb *moverse* 'to move oneself', the verb *correr* 'to run' and 15 manner verb types were listed. These manner verbs amount to 36 occurrences (57.14% of responses): *acelerar* 'to speed up' (3), *aligerar* 'to hurry up' (2), *andar* 'to walk' (3), *apresurarse* 'to hurry up' (2), *arrastrarse* 'to drag oneself', *brincar* 'to jump (informal)', *caminar* 'to walk' (2), *corretear* 'to run about', *galopar* 'to gallop'(5), *gatear* 'to crawl', *huir* 'to flee', *pasear* 'to stroll', *saltar* (2), *trotar* 'to trot' (10), *zanquear* 'to stride'.

'Saltar': 17 Spanish subjects listed 68 items, out of which 43 were verbs (63.24% of participants' responses, 25 verb types) and the remaining of the 25 items (36.76%, 25 types) were 2 noun phrases (*pies juntos* 'both feet together', *salto de*

longitud 'long jump'), 13 occurrences of adverbs and adjectives (*alto* 'high', *bajo* 'low', *bien* 'good, well', *cerca* 'close, near', *flojo* 'weak', *fuerte* 'strong', *largo* 'long', *lejos* 'far', *mal* 'badly', *mucho* 'a lot', *muy alto* 'very high', *muy bajo* 'very low', *poco* 'little'), 6 prepositional phrases expressing manner (*a la comba* 'using a rope', *a la pata coja* 'to go by moving on one leg', *a pies juntillas* 'both feet together', *a zancadas* 'with strides or long steps', *de cabeza* 'headfirst, headlong manner', *de forma rapida* 'in a fast way'), and 4 prepositional phrases[10] (*hacia arriba* 'upwards', *hacia delante* 'forwards, to the front', *hacia detrás* 'backwards', *hacia un lado* 'to one side'). In addition, 6 complex verb phrases (*abrirse de piernas* 'to open one's legs', *articular los huesos* 'to articulate one's bones', *dar volteretas* lit. 'to give turns', *dar saltos* lit. 'to give jumps', *desplegar las piernas* 'to stretch one's legs out', *flexionar las piernas* 'to bend one's legs'), 3 Path verbs (*subir* 'to go up, ascend', *arrimarse* 'to go closer to', *avanzar* 'to advance' (2)), 2 general motion verbs (*moverse* 'to move oneself', *desplazarse* 'to change one's position'), the verb *saltar* 'to jump' and 13 manner verb types were listed (25 occurrences, 36.76% of their total responses). The listed manner verbs were the following ones: *agacharse* 'to crouch oneself' (2), *andar* 'to walk', *bailar* 'to dance', *botar* 'to bound' (2), *brincar* 'to jump (informal)' (7), *cojear* 'to limp', *correr* 'to run' (2), *girar* 'to turn' (2), *impulsarse* 'to propel oneself' (3), *rebotar* 'to rebound', *tambalearse* 'to move unsteadily', *tirarse* 'to throw oneself', *trotar* 'to trot'.

Table 6.5 summarises the percentage of listed motion verbs and other listed items per language and verb category. Moreover, the total percentage of manner verb responses is also displayed.

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[10] As seen with the English adverbs *forwards, backwards, sideways*, etc, these prepositional phrases denote a path of motion relative to the Figure. They might be considered deictic paths.

ENGLISH			SPANISH		
MOVE			**MOVERSE**		
	Other items	**9.68%**		**Other items**	**1.38%**
	Motion verbs	**90.32%**		**Motion verbs**	**98.62%**
	Manner verbs	83.33%		Manner verbs	77.93%
WALK			**ANDAR**		
	Other items	**21.11%**		**Other items**	**17.08%**
	Motion verbs	**78.89%**		**Motion verbs**	**82.93%**
	Manner verbs	69.56%		Manner verbs	69.51%
RUN			**CORRER**		
	Other items	**53.85%**		**Other items**	**28.57%**
	Motion verbs	**46.15%**		**Motion verbs**	**71.43%**
	Manner verbs	44.74%		Manner verbs	57.15%
JUMP			**SALTAR**		
	Other items	**55.79%**		**Other items**	**36.76%**
	Motion verbs	**44.21%**		**Motion verbs**	**63.24%**
	Manner verbs	37.89%		Manner verbs	36.76%

Table 6.5. General distribution of listed items per verb category in English and in Spanish

Overall, a general decrease in the listing of motion verbs and, in particular, of manner-of-motion verbs can be observed as one moves down in the table from the category 'Move' to the category 'Jump'. Across languages, participants listed the highest percentage of motion verbs and of manner verbs for the category 'Move'; however, they tended to list other items (e.g., non-motion verbs, adverbs, prepositional phrases) much more frequently when they were asked to list verbs for 'Walk', 'Run', and 'Jump'.

PROTOTYPICAL VERBS (i.e., Verbs listed as first item)

One of the research interests in this study was to find out which motion verbs are the most prototypical for the categories of 'Move', 'Walk', 'Run', and 'Jump' in English and Spanish. As stated earlier, categorisation research (e.g., Rosch, 1973, 1975) has shown that participants list the best examples or prototypical members of a category

first. Thus, by examining the motion verbs which were listed as first items, the prototypical verbs for these four categories can be singled out.

Table 6.6 shows all motion verbs, but also other lexical units (e.g., non-motion verbs, adverbs) which were listed as first item per verb category and per language. Furthermore, it displays the number of tokens or occurrences and the frequency as first listed item across participants.

ENGLISH			SPANISH		
VERB CATEGORY	#	%	VERB CATEGORY	#	%
MOVE	19	100.00%	MOVERSE	17	100.00%
walk	7	36.84%	andar 'to walk'	9	52.94%
jump	5	26.32%	saltar 'to jump'	4	23.53%
run	4	21.05%	correr 'to run'	3	17.65%
bike	1	5.26%	caminar 'to walk'	1	5.88%
dance	1	5.26%			
Other items: quick	1	5.26%			
WALK	15	100.00%	ANDAR	17	100.00%
run	3	20.00%	correr 'to run'	5	29.41%
stroll	3	20.00%	andar 'to walk'	3	17.65%
move	2	13.33%	saltar 'to jump'	2	11.76%
hop	1	6.67%	caminar 'to walk'	2	11.76%
march	1	6.67%	deambular 'to wander about'	1	5.88%
strut	1	6.67%			
walk	1	6.67%			
Other items: quick, fast, slow	3	20.00%	Other items: titubear 'to hesitate', despacio 'slow', rápido 'fast', a pie 'on foot'	4	23.53%
RUN	15	100.00%	CORRER	17	100.00%
jog	4	26.67%	trotar 'to trot'	7	41.18%
walk	2	13.33%	saltar 'to jump'	2	11.76%
gallop	1	6.67%	corretear 'to run about'	1	5.88%
move	1	6.67%	correr 'to run'	1	5.88%
race	1	6.67%	arrastrarse 'to drag oneself'	1	5.88%
			apresurarse 'to hurry'	1	5.88%
			andar 'to walk'	1	5.88%
			acelerar 'to speed up'	1	5.88%
Other items: fast (3), quickly (3)	6	40.00%	Other items: rápido 'fast', a saltos 'by jumps'	2	11.76%
JUMP	15	100.00%	SALTAR	17	100.00%
hop	3	20.00%	brincar 'to jump'	5	29.41%
skip	2	13.33%	saltar 'to jump'	3	17.65%
leap	2	13.33%	correr 'to run'	2	11.76%
rise	1	6.67%	impulsarse 'to propel oneself'	2	11.76%
jump	1	6.67%	tambalearse 'to move or go unsteadily'	1	5.88%
Other items: high (4), up (1), over (1)	6	40.00%	Other items: a la pata coja 'by jumping on one leg', mucho 'a lot', alto 'high', salto de longitud 'a long jump'	4	23.53%

Table 6.6. Motion verbs, adverbials and satellites listed as first item (per category and language)

Move / Moverse

For these categories both English and Spanish participants listed *walk-andar*, *jump-saltar*, and *run-correr* as the most frequent first items. Surprisingly, participants more frequently listed *jump-saltar* (English: 27.78%; Spanish: 23.53%) as first item than *run-correr* (English, 22.22%; Spanish, 17.65%). In English, participants listed the verb *dance* and a vehicle name (*bike*) as first items, which ties in nicely with our observations on the prolific use of vehicle names and dance names as motion verbs.

Walk / Andar

Across languages, participants listed *run*, *correr* 'to run', *hop* and *saltar* 'to jump' as first items; moreover, they even listed the same verb they were being asked for. Above all, the most frequent verbs as first items were *run* and *stroll* for English and *correr* 'to run' and *andar* 'to walk' for Spanish. Apart from these verbs, English participants listed three fine-grained manner verbs, i.e., *stroll* (Leisurely Motion, State of the Figure-relaxed), *march* (Characteristic use of lower body-regular steps) and *strut* (State of the Figure-proud), and Spanish participants listed *caminar* 'to walk' and *deambular* 'to wander about' (No aim in motion).

Run / Correr

As we have seen with the previous categories, participants listed verbs which have not been considered ways of running; English participants listed *walk* and *move* and Spanish participants listed *saltar* 'to jump', *andar* 'to walk' and *correr* 'to run'. Additionally, they listed more specific manner verbs: *jog* (Rate-slow and regular), *gallop* (Rate-fast) and *race* (Rate-fast) for English, and *trotar* 'to trot' (Rate-fast), *corretear* 'to run about playfully' (Playful Motion), *arrastrarse* 'to drag oneself' (Contact between Figure and Ground; Body close to the Ground), *apresurarse* 'to hurry' (Rate-increase), *acelerar* 'to speed up' (Rate-increase).

Jump / Saltar

Once again, participants responded with the same verb about which they were asked as first items. In addition, Spanish participants listed *correr* 'to run' as a way of jumping, and one English participant listed the path verb *rise* (Earth-based

orientation: upwards) as a way of jumping. Apart from these verbs, in English, participants listed more frequently as first items the following verbs: *hop* (Characteristic use of lower body: on two legs for animals and on one for humans), *skip* (Characteristic use of lower body: one jump after each step), and *leap* (Characteristic use of lower body: a long, high jump); in Spanish, participants listed *brincar* 'to jump (informal)' as the most frequent first item, but also listed verbs such as *impulsarse* 'to propel oneself' and *tambalearse* 'to move or go unsteadily' (Unsteady Motion).

MANNER-OF-MOTION VERB LEXICONS

Now that we know which verbs are the most prototypical for the four motion categories, we go on to report the subjects and items analyses which aim to provide an answer to our research questions. As stated in the introduction, our research questions are the following: (1) Will English speakers list more manner-of-motion verbs for all verb categories than will Spanish speakers? (2) Will the 'Move' category contain the greatest variety of manner across languages? And (3) will the 'Walk' category be richer than the 'Run' or 'Jump' category across languages?

Recall that it was common for participants to list adverbs, satellites and other motion verbs. Some of them did not list any manner verb at all; that was the case for 14 English participants (2 for 'Walk', 6 for 'Run' and 6 for 'Jump'), and for 4 Spanish participants (1 for 'Run' and 3 for 'Jump'). It should be noted that the next analyses concentrate solely on manner-of-motion verbs; general motion verbs, path verbs, collocations and complex verb phrases were left out. Furthermore, when participants responded with the same superordinate verb as the one they were being asked about, that verb was not counted for these analyses.

Subjects analysis[11]

A 2 (Language: English, Spanish) by 4 (verb category: Move, Walk, Run, Jump) Analysis of Variance (ANOVA) was performed, in which language and verb

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[11] The reader should note that the subjects analysis uses occurrences of manner verbs and not manner verb types. Therefore, the fact that one language group might list a larger number of occurrences of manner verbs does not mean that participants listed a larger variety of manner verbs. For that reason, an items analysis looking at manner verb types was also carried out.

category are between-subjects factors. This analysis revealed two main effects: a language effect and a verb effect, but no interaction.

This analysis showed that participants in the two language groups differed significantly in the number of manner verbs they listed, $F(1,113) = 50.365$, $p < 0.05$; English participants overall listed more occurrences of manner verbs ($M = 4.89$, SE = 0.309) than did Spanish participants ($M = 3.508$, $SE = 0.259$). Moreover, the effect of verb category also reached significance, $F(3, 113) = 35.758$, $p < 0.05$. On average, both language groups listed more occurrences of manner verbs for Move (English $M = 8.10$, $SD = 3.07$; Spanish $M = 6.65$, $SD = 2.06$) than for any of the other categories. Furthermore, English participants listed a higher number of manner verbs for Walk ($M = 4.92$, $SD = 3.23$) than for Run ($M = 2.55$, $SD = 1.81$) and Jump ($M = 4$, $SD = 1.12$). To our surprise, on average, English speakers listed more manner verbs for Jump than for Run. On the other hand, Spanish participants listed the highest number of manner verbs for Walk ($M = 3.35$, $SD = 1.41$), then for Run ($M = 2.25$, $SD = 1$) and the fewest number of manner verbs for Jump ($M = 1.78$, $SD = 0.80$). These findings are summarized in Figure 6.1.

Six t-tests per language group were performed to further assess whether the number of listed manner verbs differed among verb categories. These analyses revealed that the number of verbs listed differed significantly between *Move* and *Walk* (English $t(29) = 2.740$, $p < 0.05$; Spanish $t(32) = 5.439$, $p < 0.05$), *Move* and *Run* (English $t(26) = 4.994$, $p < 0.05$; Spanish $t(31) = 7.720$, $p < 0.05$). For *Move* and *Jump*, *Walk* and *Run*, and for *Run* and *Jump* there were significant differences in the number of listed manner verbs in Spanish (*Move* and *Jump*: $t(29) = 8.307$, $p < 0.05$; *Walk* and *Run*: $t(31) = 2.754$, $p < 0.05$; *Run* and *Jump*: $t(28) = 1.389$, $p < 0.05$), but marginal ones in English (*Move* and *Jump*: English $t(26) = 1.937$, $p = 0.07$; *Walk* and *Run*: English $t(19) = 1.937$, $p = 0.0677$; *Run* and *Jump*: $t(16) = -2.036$, $p = 0.058$). Finally, for *Walk* and *Jump*, the analysis reached significance for Spanish ($t(29) = 3.686$, $p = 0.05$), but it did not for English ($t(19) = 0.798$, *ns*)
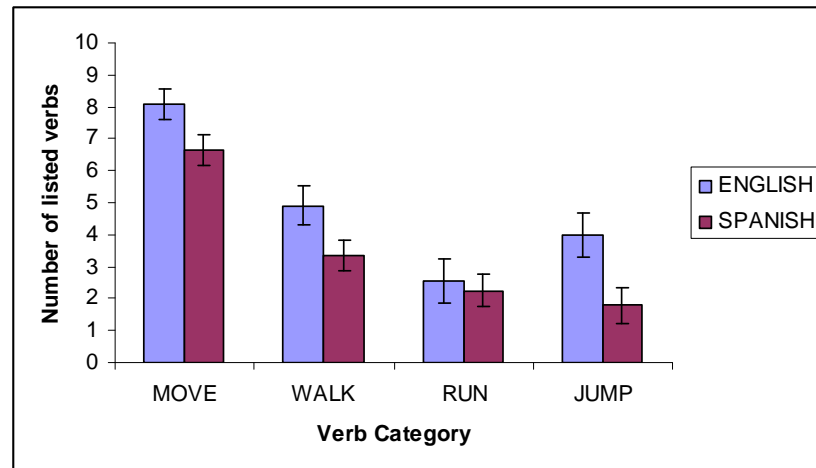
Figure 6.1. Listed manner verbs per category and language

Items analysis

With respect to *manner verb types*, across the two languages the category 'Move' includes the greatest variety of manner verbs, followed by 'Walk', then by 'Run' and finally by 'Jump' (Figure 6.2).

Furthermore, there was a statistically marginal difference in the number of manner verb types listed by English and Spanish participants, *Chi-square* (3) = 7.08, $0.10 > p > 0.05$. A higher number of manner verb types were listed in English for the categories Move (English = 53; Spanish = 32) and Walk (English = 34; Spanish = 18), whereas more manner verb types were listed in Spannish for Run (English = 11; Spanish = 15) and Jump (English = 9; Spanish = 13).
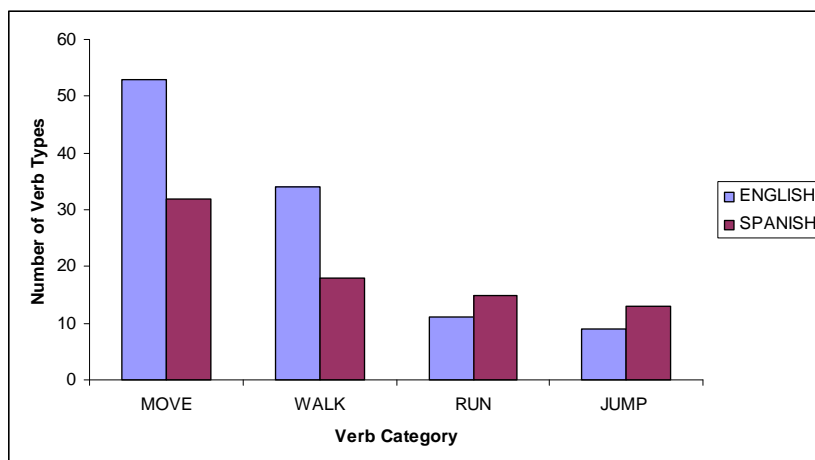
Figure 6.2. Number of manner verb types per category and language

In this analysis, we included all manner verbs listed by participants (see Appendix 4 for the list of manner verbs per language and category). After a close examination of what participants responded for 'Run' and 'Jump', we observed that they listed some manner verbs which were not coded as running or jumping verbs in our corpus analysis. Restricting our analysis to just those verbs which according to dictionaries are running[12] and jumping[13] verbs, it was still found that (a) a greater variety of running verbs than of jumping verbs were listed across languages, and that (b) running verbs in Spanish outnumbered those of English. However, a slightly different pattern was observed for jumping verbs; namely, English jumping verbs surpassed those of Spanish. Finally, it should be remarked that this analysis seems to be more an artefact of dictionary definitions than of speakers' conceptualisations.

6.3.4. Discussion and conclusions

On the whole, it has been observed that participants often listed adverbs, satellites, noun phrases and prepositional phrases in addition to motion verbs, especially when responding to the ways humans walk, run and jump. A general decrease in the listing of motion verbs and, in particular, of manner-of-motion verbs from the category 'Move' to the category 'Jump' was found. Overall, English and Spanish participants listed the highest number of motion verbs and of manner verbs for the category 'Move'; however, the number of motion verbs and manner verbs dropped off for 'Walk', then they fell further for 'Run' and even more for 'Jump'. An increase in the number of other listed items paralleled the decrease of motion verbs.

A secondary aim of this study was to find out which were the prototypical motion verbs for each of the categories. In the case of 'Move', the same pattern was found across languages: *walk* and *andar* 'to walk' were the most frequently listed first items, followed by *jump* and *saltar* 'to jump' and by *run* and *correr* 'to run'. For English, *bike* and *dance* seem to be prototypical verbs for this category as well; this

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[12] The strict count of listed running verbs included 5 for English (*gallop, jog, race, speed, sprint*) and 6 for Spanish (*acelerar* 'to speed up', *aligerar* 'to hurry up', *apresurarse* 'to hurry up', *corretear* 'to run about playfully', *galopar* 'to gallop', *trotar* 'to trot').

[13] The strict count of listed jumping verbs included 5 for English (*bound, hop, leap, skip, spring*) and 1 for Spanish (*brincar* 'to jump (informal)').

suggests that vehicle verbs and dance verbs might be good members of the superordinate category 'Move'. With respect to the three motor pattern categories, the three verbs naming the categories tended to appear in their responses; in other words, participants listed as first item the same verb which they were being asked about (e.g., *walk* when asked about ways of walking). Additionally, it was noted that within each motor pattern category the other two motor pattern verbs were sometimes listed; e.g., for 'Walk' in English and Spanish, *run* and *correr* were the most frequent listed first items, which suggests that participants might not consider these two actions (walking and running) as two disconnected motion events. Regarding the motor patterns 'Run' and 'Jump', other verbs were the best exemplars of these categories: *jog* and *trotar* 'to trot' for 'Run'; *hop* and *brincar* 'to jump (informal)' for 'Jump'. Other verbs which were listed as first items, and thus, as good exemplars of the three motor pattern categories are the following: *stroll*, *march* and *strut* for 'Walk'; *caminar* 'to walk' and *deambular* 'to wander about' for 'Andar' ('to walk'); *gallop* and *race* for 'Run'; *corretear* 'to run about playfully', *arrastrarse* 'to drag oneself', *apresurarse* 'to hurry', *acelerar* 'to speed up' for 'Correr' ('to run'); *skip*, *leap* and *rise* for 'Jump'; and *impulsarse* 'to propel oneself', *tambalearse* 'to move or go unsteadily' for 'Saltar' ('to jump'). One drawback of this study is the limited number of participants per verb category, which results in a restricted number of motion verbs as first items. A much larger sample of participants might be needed both to elicit more prototypical verbs for these categories and to find out whether the verbs which have been found in this study are in reality prototypical verbs for these categories within the languages.

Regarding our predictions about the quantitative differences in the organisation of manner verb lexicons, our results partially support our first prediction, which stated that English speakers would list more manner verbs for each category than Spanish participants. In both subjects and items analyses, it has been found out that English participants listed more manner verbs than Spanish participants only for two of the four categories, specifically, for 'Move' and 'Walk'. Unpredictably, in Spanish more manner verbs were listed for 'Run' and 'Jump' than in English. A possible explanation might be sought in the fact that more than half of the responses for English 'Run' and 'Jump' were other items (i.e., no motion verbs,

with a total of 53.85% for 'Run' and 55.79% for 'Jump'), whereas the percentage of listed motion verbs in Spanish 'Run' and 'Jump' surpassed those of other items. This seems to indicate either that (a) English participants might have been more concerned with providing *any* answer due to the one minute time-limit of the task, (b) it might have been difficult for them to access their manner verb lexicon for these two categories, (which are less central to human experience than 'Walk') or (c) both, i.e., because of time constraints, it was hard to access their lexicon and they thus resorted to other items. Overall, English participants listed other items per each category much more frequently than Spanish participants did, which might suggest that English participants did not as closely follow the instructions given. On the other hand, in a second items analysis which took into account a strict count of running and jumping verbs, it was also found that Spanish running verbs exceeded English running verbs, but it was noted that English jumping verbs outnumbered those of Spanish.

Furthermore, it was predicted that, across languages, participants would list more manner verbs for 'Move' than for the other three categories, and that, within the motor pattern categories, they would list a higher number of manner verbs for 'Walk' over 'Run' and 'Jump'. These two predictions were also borne out. *Move* and *moverse* as superordinate verbs of *walk*, *run*, *jump*, and *andar*, *correr*, *saltar* yielded a significantly higher variety of manner verbs in both language groups and a larger number of manner verb occurrences. Also, in line with our predictions, *walk* and *andar* 'to walk' generated more manner verbs than the other two less basic motor patterns. Although no prediction was made about differences in the number of manner verbs for the categories 'Run' and 'Jump', our results show that, for both language groups, the 'Run' category presents a greater variety of manner verbs than the 'Jump' category (see Appendix 4 for a full list of these verbs in alphabetical order). Recall that in our corpus analysis, a similar pattern was found for Spanish (i.e., 4 verbs for 'Run' and 3 for 'Jump') but the reverse was noted for English; English jumping verbs exceeded running verbs (i.e., 11 verbs for 'Jump' and 7 verbs for 'Run'). We attributed this to the fact that dictionary definitions were not specific about the motor pattern of many possible candidates for running verbs.

To summarise, the present study provides empirical evidence for the claim that English and Spanish organise their human locomotion verb lexicon in much the same way. Irrespective of the quantitative differences in the number of manner verbs their lexicons have, both languages have more manner verbs specifying different ways of walking than ways of running and jumping.

6.4. Categorisation of human locomotion verbs

6.4.1. Introduction

In this last part of the chapter, an experimental investigation on how English and Spanish native speakers rate a list of human locomotion verbs in terms of the three basic motor patterns 'Walk', 'Run' and 'Jump' is reported. As has been discussed in Chapter 5, the semantics of motion verbs is so intricate that even dictionaries often disagree in their definitions. While compiling and analysing our corpus of motion verbs, we came across English and Spanish motion verbs which seem to clearly denote that the Figure is either walking, running, or jumping, whereas other verbs seem just to imply a specific motor pattern (i.e., dictionaries failed to agree in on a unique motor pattern or they were not specific about one). Accordingly, the former were analysed and grouped within the 'Motor pattern' categories, while the latter were grouped in other manner categories.

The main goal of this study is to determine the specific motor pattern which is denoted or implied by a set of human locomotion verbs. The present study was carried out before the analysis of the motion verb lexicon was completed. For that reason, not all conflicting verbs within our corpus were included in this study. Additionally, this study addresses the question of whether these human locomotion verbs are better examples of the 'Walk' category than of 'Run' and 'Jump'. Drawing from our previous research (i.e., corpus analysis and the free verb listing study), our major prediction is that English and Spanish human locomotion verbs will be better examples of 'Walk' than of 'Run' and 'Jump' as the majority of human locomotion verbs seem to be walking verbs. When looking at human locomotion verbs as a whole, participants from the two language groups will give them the highest ratings

as ways of/kinds of walking; on the other hand, when looking at each verb in particular, a larger number of verbs will be rated as good exemplars of 'Walk' whereas fewer verbs will be rated as good exemplars of 'Run' and 'Jump'. Moreover, it is expected that some human locomotion verbs do not fit in only one of these three motor pattern categories as the ways of moving denoted by the verbs might occur while the Figure is walking, running or jumping.

One issue that arose when designing the study was how the question should be worded. Research by Cruse (1989, 2004) and Miller & Fellbaum (1991) has provided some interesting insights into verb taxonomies, concretely, into how they seem to be organised and what kinds of semantic relations hold among their members. Cruse (1989) remarks that the diagnostic question for noun taxonomies *Is X a kind/type of Y?* does not work for verbs as well as it does for nouns; whereas the question *Is verb X-ing a way of verb Y-ing?* seems to be more appropriate for verbs. Miller & Fellbaum (1991: 216-220), much along the same lines, state that *troponymy* (from Greek *tropos*, i.e., manner or fashion) or verb hyponymy is the most common semantic relation among verbs. Many verbs indicate more precisely the manner of doing something, for example, *march*, *strut*, *traipse*, *amble*, and *mosey* are troponyms of *to walk*, that is, they are ways of walking, mutually inclusive or temporally co-extensive with walking. Although hyponymy is quite common among verbs, taxonomy also occurs. In Cruse's own words (1989: 138), 'verbs generally seem to show hierarchical structuring to a more limited extent than nouns; however, just as hyponymy is quite common among verbs, a relation paralleling nominal taxonomy occurs, too'. Although the two notions are extremely difficult to tell apart, a troponym is not the same as a taxonym[14]. Whereas many verbs can be troponyms of a superordinate verb, only a subset of them are taxonyms of it. For example, *to travel*, *to walk* and *to run* are troponyms of *to move*; they all are ways of moving. However, according to Cruse, only *to walk* and *to run* are taxonyms of *to move*. In sum, both troponymic (i.e., a verb X is a way of verb Y) and taxonomic relations (i.e., a verb X is a kind of verb Y) are to be distinguished when exploring the nature

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[14] According to Cruse (2004: 150), taxonymy is a subtype of a hyponymy; it seems that 'a taxonym must engage with the meaning of its supeordinate in a particular way, by further specifying what is distinctive about it'.

of verb lexicons, though troponymy (or verb hyponymy) seems to be the most frequent semantic relation. Therefore, as a secondary aim we want to test which question type (the *way-of* or the *kind-of* question) seems to work better when categorising motion verbs. Thus, we predict that the *way of* question will yield higher ratings than the *kind of* question.

6.4.2. Method

Subjects

18 adult native English speakers and 18 adult native Spanish speakers volunteered or were paid for the participation. English participants were students at the University of Sussex (UK). Spanish speakers were students at the Universidad de Murcia (Spain). Participants ranged from 18 to 30 years of age.

Stimuli

Our stimuli were 111 verbs for English (108 verbs plus *walk*, *run*, *jump*) and 57 for Spanish (54 verbs plus *andar* 'to walk', *correr* 'to run', and *saltar* 'to jump') (See Appendix 5).

We created separate booklets for each language group. The instructions were given on the first page of the booklet (Appendix 3). Each booklet was divided into 3 blocks; each block consisted of questions and rating scales for each human locomotion verb with respect to one of the superordinate categories (Walk or Run or Jump). The questions were one of the following two throughout the booklet: '*Is X-ing a kind of Y-ing?*' or '*Is X-ing a way of Y-ing?*' for the English version, and '*¿Es X un tipo de Y?*' or '*¿Es X una manera de Y?*' for the Spanish version. Half the subjects received the kind-of question and the other half the way-of question. Each question was followed by a rating scale ranging from 'Definitely a kind/way' – 'Not sure a kind/way' – 'Definitely not a kind/way'. It should be noted that questions about (a) whether *walk* was a way/kind of running or jumping (in the Run and in the Jump block respectively), (b) whether *run* was a way/kind of walking or jumping (in the Walk and in the Jump block), and (c) whether *jump* was a way/kind of walking or running (in the Walk and in the Run block) were also included. For the English version, each booklet contained 330 questions in total, that is, 110 verbs x 3 blocks.

The Spanish version consisted of 168 questions in total, that is, 56 verbs x 3 blocks. Both the questions and the blocks within each booklet were randomised across subjects to avoid order effects.

Procedure

Participants were given the booklets and told to answer all the questions by marking an X on any point on the scale provided. They were told not to skip any question or look ahead in the booklet. The instructions were also given in written form on the first page of the booklet. Participants were run in a quiet room and no time limit was given.

Design

This study used a mixed design. There were three independent variables: language (English, Spanish), question (kind of, way of) and superordinate verb (Walk, Run, Jump). The language and question variables were between-subjects variables, and the superordinate verb was a within-subjects variable. The dependent variable was the *goodness of a verb as a member of a superordinate verb*, defined as the score (in millimeters) a participant gave to a particular verb with regard to a superordinate verb (either Walk, Run or Jump) by marking an X on the rating scale.

This scale was 102 millimeters long. It ranged from 'Definitely a kind/way of' on the left (score 0) to 'Not sure a kind/way of' to 'Definitely not a kind/way of' on the right (score 102). We flipped the scores for the final coding for clarity reasons: thus, 0 means 'Definitely not a kind/way of' and 102 means 'Definitely a kind/way of'. Thus, the higher the score a verb got, the better of an example of the superordinate category it was.

6.4.3. Results

Two ANOVAs, one treating participants as the random effect and the other treating items as the random effect, were carried out. The participant analysis yielded no statistically significant results because of the limited number of participants. The

item analysis is reported here instead. All reported effects were significant at the p < 0.05 level.

In addition, separate ANOVAs for each human locomotion verb were carried out to find out the motor pattern category into which the verb is best categorised.

OVERALL ANALYSIS

A 2 (Language: English, Spanish) by 2 (Question: kind of, way of) by 3 (Superordinate verb: Walk, Run, Jump) Analysis of Variance (ANOVA), in which all factors varied within-items revealed three significant main effects and one interaction.

The main effect of language on acceptability ratings was significant, $F(1, 164) = 4.38$, $p < 0.05$. This means that the two language groups differed in their ratings irrespective of question type and superordinate verb. English human locomotion verbs got higher acceptability ratings ($M = 40.70$, $SE = 1.12$) than did Spanish human locomotion verbs ($M = 36.67$, $SE = 1.57$).

The effect of superordinate verb on acceptability ratings was also significant, $F(2, 328) = 94.56$, $p < 0.05$. On average, verbs were rated higher with respect to Walk ($M = 57.26$, $SE = 1.81$) than to Run ($M = 37.03$, $SE = 1.95$) and to Jump ($M = 21.76$, $SE = 1.56$). (Figure 6.3)

The analysis also revealed that the question type had a significant effect on the ratings, $F(1, 164) = 9.38$, $p < 0.05$. On average, responses to the way-of question received higher ratings ($M = 39.67$, $SE = .99$) than did responses to the kind-of question ($M = 37.70$, $SE = 1.03$).
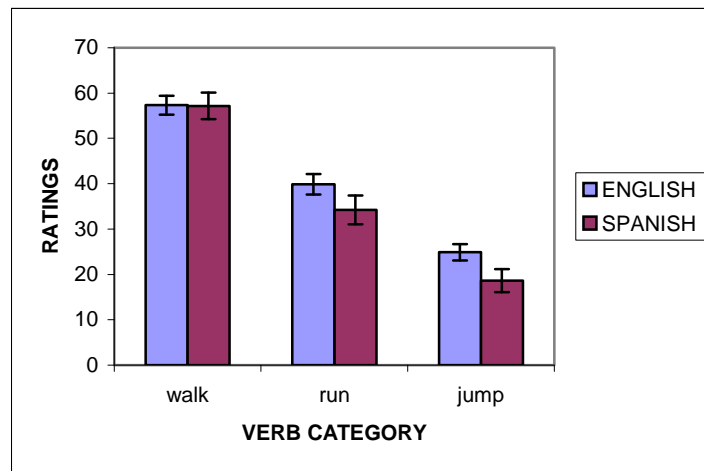
Figure 6.3. Superordinate verb effect in English and Spanish

The interaction between language and question reached significance, $F(1, 164) = 81.90$, $p < 0.05$, indicating that English and Spanish participants differed in their ratings in terms of the question type. Spanish participants gave higher ratings for the way-of question ($M = 40.56$, $SE = 1.61$) than for the kind of question ($M = 32.78$, $SE = 1.69$). English participants gave higher ratings for the kind-of question ($M = 42.62$, $SE = 1.21$) than for the way-of question ($M = 38.78$, $SE = 1.15$). (Figure 6.4).
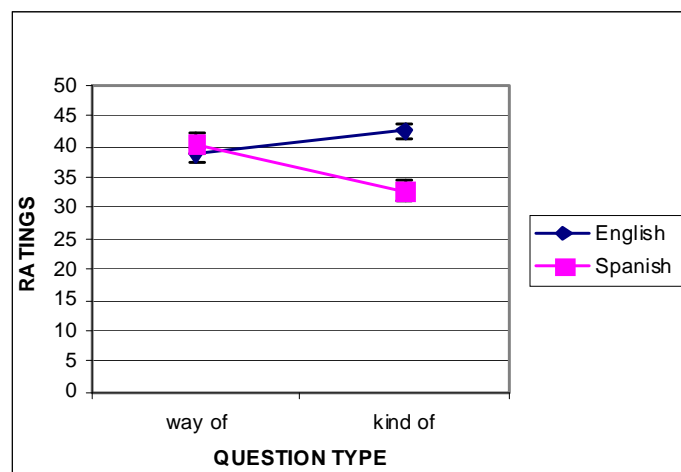
Figure 6.4. Interaction between language and question type

Further analyses of only English participants and only Spanish participants were conducted to assess these effects (i.e., verb effect and question type effect) on each language group.

English Results

A 2 (Question: kind of, way of) by 3 (Superordinate verb: Walk, Run, Jump) ANOVA in which the two factors varied within-items revealed two main effects (Figure 6.5 is included below for ease of illustration).

This analysis revealed a main effect of superordinate verb, $F(2, 218) = 52.75$, $p < 0.05$. Human locomotion verbs were rated higher with regard to Walk ($M = 57.35$, $SE = 2.18$) than to Run ($M = 39.88$, $SE = 2.24$) and to Jump ($M = 24.89$, $SE = 1.84$). Separate t-tests showed that the ratings differed significantly between the superordinate verbs Walk and Run ($t(109) = 4.87$, $p < 0.05$), Walk and Jump ($t(109) = 10.74$, $p < 0.05$), and Run and Jump ($t(109) = 5.04$, $p < 0.05$).

The results also showed that the type of question asked had a significant effect on the acceptability ratings, $F(1, 109) = 28.65$, $p < 0.05$. The kind-of questions were rated higher ($M = 42.62$, $SE = 1.09$) than the way-of questions ($M = 38.78$, $SE = 1.08$).

No interaction between question and superordinate verb was found.
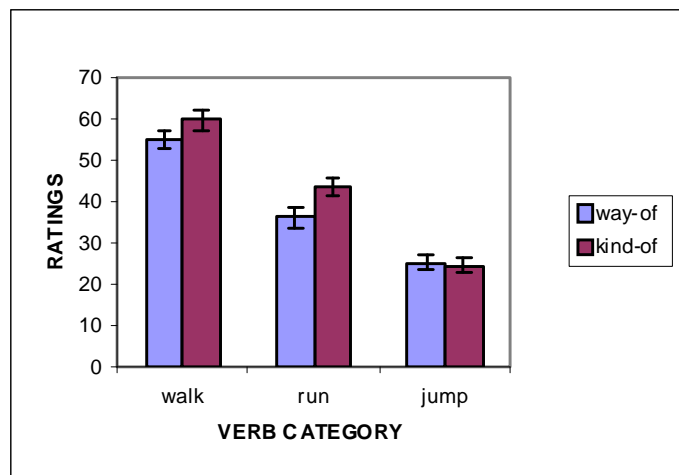
Figure 6.5. English: effects of the question type and of superordinate verb

Spanish results

A 2 (Question: kind of, way of) by 3 (Superordinate verb: Walk, Run, Jump) ANOVA in which question and superordinate verb varied within-items revealed significant effects of question and of superordinate verb, but no interaction.

There was a main effect of superordinate verb, $F(2, 110) = 53.45$, $p < 0.05$. Human locomotion verbs were rated higher with regard to Walk ($M = 57.12$, $SE = 2.89$) than to Run ($M = 34.2$, $SE = 3.24$) and to Jump ($M = 18.63$, $SE = 2.45$). Three t-tests showed that the ratings differed significantly between the superordinate verbs Walk and Run ($t(55) = 5.87$, $p < 0.05$), Walk and Jump ($t(55) = 11.07$, $p < 0.05$), and Run and Jump ($t(55) = 4.02$, $p < 0.05$). (Figure 6.6).

Furthermore, the results showed that the type of question asked had a significant effect on the acceptability ratings, $F(1, 55) = 48.40$, $p < 0.05$. The way-of questions were rated higher ($M = 40.56$, $SE = 1.8$) than the kind-of questions ($M = 32.79$, $SE = 1.98$)
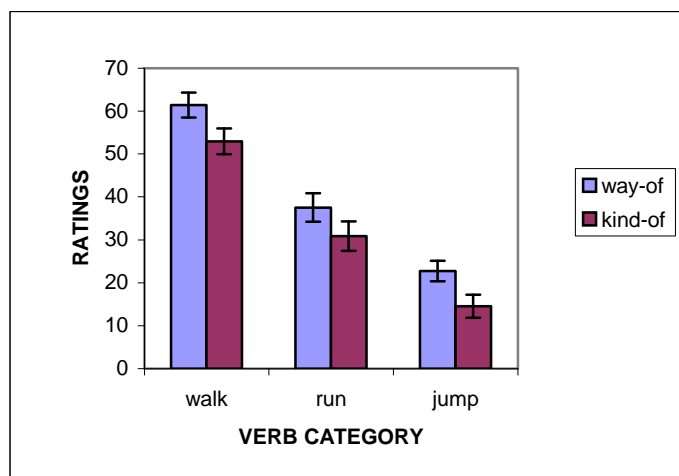
Figure 6.6. Spanish: effects of the question type and of superordinate verb

FURTHER ANALYSES

Separate one-way ANOVAs for each of the 108 English verbs as well as for the 54 Spanish verbs were performed, with supeordinate verb (Walk, Run, Jump) as the within-items variable. For verbs that did not clearly pattern as good ways/kinds of only one superordinate[15] category, t-tests with Bonferroni correction were also

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[15] When the difference between the means was equal or less than 20.

carried out to test whether the ratings differed significantly between the superordinate verbs (See Appendix 5).

These analyses revealed that (a) most verbs are good ways/kinds of one of the superordinate categories, (b) a few of them are not good ways/kinds of any of them, and (c) some verbs seem to be good ways/kinds of two superordinate categories (i.e., no significant difference was found between their ratings in terms of the two superordinate categories). Tables 6.6 and 6.7 summarise these results for English and Spanish respectively. The results of these analyses are also included in the last column of our corpus of motion verbs (in Appendices 1 and 2), where they can be easily contrasted with the results from the semantic analysis.

MOTOR PATTERN	VERBS	NUMBER OF VERBS (108)
WALK	amble, clump, crawl, creep, dodder, edge, file, goosestep, hike, hobble, inch, limp, lope, lumber, lurch, march, meander, mince, mosey, pace, paddle, parade, perambulate, plod, promenade, prowl, ramble, roam, rove, sashay, saunter, shamble, shuffle, sidle, slide, slink, sneak, stagger, stalk, stomp, stride, strut, stump, tiptoe, toddle, totter, traipse, tramp, trek, troop, trudge, waddle, wade, wander	54
RUN	bolt, canter, charge, chase, dart, dash, flee, gallop, hound, hurtle, race, scurry, sprint, streak, whisk, whiz(z), zoom	19
JUMP	bounce, hop, leap, skip, sommersault, spring, vault	7
WALK-RUN	dribble, hasten, hurry, nip, pad, reel, rush, scamper, scoot, scuttle, skedaddle, skitter, sweep, trot	14
WALK-JUMP	prance	1
RUN-JUMP		0
NONE	bound, caper, cavort, flounder, frisk, frolic, gambol, romp, scud, shoot, slog, slouch, trip	13

Table 6.7. Categorisation of English human locomotion verbs

MOTOR PATTERN	VERBS	NUMBER OF VERBS (54)
WALK	acechar 'to stalk', acompañar 'to accompany', ambular 'to wander about', anadear 'to duckwalk', arrastrarse 'to drag oneself', callejear 'to walk around the streets', caminar 'to walk', chancletear 'to walk noisily using flip-flops', contonearse 'to walk swaying one's hips', contramarchar 'to go backwards, to back', deambular 'to walk around', desandar 'to walk back to a previous path', desfilar 'to walk in file, to parade', errar 'to wander about', gatear 'to crawl', merodear 'to walk around', noctambular 'to walk around at night', patear 'to stamp, to go on foot around a place', pavonearse 'to strut', recorrer 'to move, go around a place', recorrer 'to move, go around a place', renquear 'to limp', rondar 'to be on patrol, to prowl about', serpentear 'to slither, to meander', taconear 'to tap shoes with heels', tambalearse 'to move unsteadily', vagar 'to wander about', zancajear 'to walk repeatedly from one place to another', zanquear 'to walk with crooked legs, to stride', zaparrastrar 'to move, walk dragging one's clothing', zigzaguear 'to zigzag'	31
RUN	acelerar 'to accelerate', aligerar 'to quicken, to hurry up', apresurarse 'to hurry up', esprintar 'to sprint', fugarse 'to flee, to run away', galopar 'to gallop', huir 'to flee, to run away'	7
JUMP	brincar 'to jump', tropezar 'to trip'	2
WALK-RUN	corretear 'to run about', desacelerar 'to slow down', deslizarse 'to slide', esquivar 'to avoid, to dodge', rastrear 'to track', regatear 'to dribble'	6
WALK-JUMP	zapatear 'to tap shoes'	1
RUN-JUMP	precipitarse 'to fall down from a high place; to run, hurry to'	1
NONE	encorvarse 'to bend, to curve', pisar 'to tread', pisotear 'to tread on something repeatedly', resbalarse 'to slide', retozar 'to frolic', trotar[16] 'to trot'	6

Table 6.8. Categorisation of Spanish human locomotion verbs

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[16] The analysis performed for Spanish *trotar* 'to trot' did not reach significance, suggesting that it is not a good way/kind of walking, running or jumping; however, by looking at the mean ratings (Walk, $M = 72.33$, $SD = 33.82$); Run, $M = 81.56$, $SD = 27.89$; Jump, $M = 80.22$, $SD = 32$) it might be argued that Spanish *trotar* is a good way/kind of all three superordinate verbs as it received high ratings for all three categories.

Recall that in addition to the questions about the 108 English verbs and the 54 Spanish verbs, questions about the goodness of each superordinate verb as a way/kind of either of the other two superordinates were included as well. For each superordinate verb in both languages (*walk*, *run*, *jump*, *andar* 'to walk', *correr* 'to run', *saltar* 'to jump') paired t-tests were used to determine whether the verb was a better way/kind of either of the other superordinates within the language (e.g., is walk as good of a way/kind of run as of jump?). Only one of these analyses reached significance: the Spanish superordinate verb *correr* 'to run' was rated higher with regard to *Andar* 'Walk' ($M = 74.94$, $SD = 42.04$) than to *Saltar* 'Jump' ($M = 28.33$, $SD = 39.84$), $t(17) = 3.540$, $p < 0.05$. There were no other significant differences.

6.4.4. Discussion and conclusions

In the overall analysis, our results showed a main effect of language on acceptability ratings, namely, English human locomotion verbs got higher ratings than Spanish human locomotion verbs. In spite of this language effect, both languages showed a similar pattern when rating verbs in terms of the three superordinate categories: human locomotion verbs received the highest ratings with respect to Walk, then to Run, and the lowest ones with respect to Jump. These results can be interpreted as if the category Walk includes the greatest number of human locomotion verbs, whereas Run comprises fewer verbs than Walk, and Jump is the category with less verbs. On the whole, these results support our prediction and provide further support for our previous findings: both languages exhibit a greater variety of walking verbs over running and jumping verbs.

Further analyses on how each individual verb was rated showed that, for English, 54 verbs of the set of motion verbs in this study are good examples of Walk, 19 are good instances of Run and 7 of Jump; for Spanish, 31 verbs of the set of motion verbs are good examples of Walk, 7 of Run and 2 of Jump, further supporting our previous results. In addition, these analyses revealed that (a) most verbs are good instances of one of the three motor patterns; (b) a few of them are not good instances of any of the three motor patterns (e.g., *bound*, *cavort*, *frolic*) and (c) some verbs seem to be good instances of two motor patterns (e.g., *hasten*, *hurry*, *scoot* are good

instances of walking and running). By 'a verb is a good instance of', we mean that a verb can either denote or imply a given motor pattern when the Figure performs the action depicted by the verb. For example, *flee*, *fugarse* and *huir* 'to flee' are not defined in dictionaries as related to any motor pattern, but they are good instances of running verbs according to native speakers. As pointed out in Chapter 5 (Section 5.5.1), dictionaries are not specific about the motor pattern of a large number of verbs which encode fast rate of motion: e.g., *bolt*, *canter*, *dart*, *dash*, *hasten*, *hurry*, *hurtle*, *nip*, *race*, *rush*, *scoot*, *scud*, *scurry*, *scuttle*, *shoot*, *speed*, *spring*, *streak*, *whisk*, *whiz*, and *zoom*. This study suggests that (a) *bolt*, *canter*, *dart*, *dash*, *hurtle*, *race*, *rush*, *scoot*, *scurry*, *speed*, *streak*, *whisk*, *whiz* and *zoom* are good instances of 'Run'; (b) *spring* is a good instance of 'Jump'; (c) *scud* and *shoot* are not good instances of any motor pattern categories; and (d) *hasten*, *hurry*, *nip* and *scuttle* are good instances of both 'Run' and 'Walk'. In addition, many more human locomotion verbs which denote mixed patterns have been found. This supports our prediction that some human locomotion verbs do not fit clearly in only one of these three categories as they might denote that the Figure could be walking and/or running and/or jumping when performing the action labelled by the motion verb. The most common mixed pattern in our data is that of 'Walk'-'Run' (with a total of 14 English verbs, i.e., *dribble*, *hasten*, *hurry*, *nip*, *pad*, *reel*, *rush*, *scamper*, *scoot*, *scuttle*, *skedaddle*, *scurry*, *speed*, *sprint*, *sweep* and *trot*, and 6 Spanish verbs, i.e., *corretear* 'to run about playfully', *desacelerar* 'to slow down', *deslizarse* 'to slide', *esquivar* 'to avoid, to dodge', *rastrear* 'to track', and *regatear* 'to dribble'), whereas the patterns 'Walk'-'Jump' and 'Run'-'Jump' are rarer. In English, *prance* is the only verb in the list of human locomotion verbs which seems to denote a way of walking and of jumping; Spanish *zapatear* 'to tap shoes' seems also to denote a way of walking and of jumping, and *precipitarse*[17] 'to fall down from a high place; to run, hurry to' a way of running and of jumping. Furthermore, it has been found that *trotar* 'to trot', which is defined in dictionaries as a fast walk by horses or people, seems to

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[17] Two entries for this verb were created in our corpus: *precipitarse1* (Path: downwards motion + Manner: Forced Motion (energy-high)), which is good for labelling an event in which the Figure jumps off from a high place, and *precipitarse2* (Path: to/towards G + Manner: mp-run). This might explain why this verb has been rated high in terms of both 'Jump' and 'Run'.

fit nicely in all three motor patterns as shown by its higher ratings for all three. Last, but not least important, some verbs which are defined in dictionaries as implying or denoting a specific motor pattern were not categorised by native speakers as good examples of any category. In particular, (a) posture verbs such as *slouch* (which can be found in translational motion as well), *encorvarse* 'to bend onself'; (b) verbs denoting obstructed motion while walking or running (e.g., *trip*); (c) verbs typically defined in dictionaries as walking and running playfully (e.g., *frolic*, *gambol*, *frisk*, *retozar* 'to frolic'); (d) Spanish *pisar* 'to tread', *pisotear* 'to tread repeatedly', *resbalarse* 'to slide' (which seem to occur while the Figure is walking or running); (e) English *bound* (defined as a way of jumping) and *slog* (defined as a slow and effortful way of walking) were not rated as good instances of either 'Walk', 'Run' or 'Jump'.

As a secondary aim, we also posed the question of whether one question type works better than the other when categorising verbs. Following Cruse (1989, 2004) and Miller & Fellbaum (1991), we were inclined to predict that the *way-of* question would work better (i.e., it would get higher ratings) than the kind-of question as troponymy is the most frequent semantic relation among verbs. However, our results confirmed our prediction only for Spanish. On average, Spanish participants gave higher ratings for the way-of question than for the kind-of question, whereas English participants gave higher ratings for the kind-of question. But, if we look at Figure 6.4, it can be observed that verbs from both languages got similar ratings for the way-of question, but differed significantly in the rating when the kind-of question was used: Spanish ratings for kind-of were much lower than those for the way-of question, while English ratings for kind-of were somewhat higher than those for way-of. One plausible explanation for *why* the two languages differed dramatically on the kind-of question might be the wording of the kind-of question in Spanish. One of our Spanish participants remarked that the question *¿Es X un tipo de Y?* sounded quite odd to her. Thus, the wording of the kind-of question might have been responsible for Spanish participants favouring the way-of question instead.

To conclude, this investigation provides further empirical evidence for the findings from our semantic analysis of English and Spanish motion verb lexicons: despite the fact that English has many more manner-of-motion verbs, both languages

exhibit a greater variety of walking verbs over running and jumping verbs. Furthermore, this study has shed light on the semantic nature of human locomotion verbs in various ways: by clarifying the motor pattern that a given verb denotes or implies, and by suggesting that motor-pattern category boundaries are not always clear, some motion verbs have emerged as mixed motor pattern verbs.

6.5. Conclusions

This chapter has presented three experimental studies on human locomotion verbs in English and in Spanish. As argued in the Introduction, the semantic analysis carried out in Chapter 5 does not represent speakers' mental representations of the motion verbs. However, this analysis set the much-needed solid foundations to begin experimental research into the domain of motion.

The first study (the Definition and Feature Listing Task) offers the first insights into native speakers' representations of some basic motion verbs, namely, *move* and *moverse*, *walk* and *andar*, *run* and *correr*, and *jump* and *saltar*. Generally speaking, *move* and *moverse* were defined as motion verbs which denote both translational and self-contained motion; *walk* and *andar* as the most basic human motor pattern to change one's location; *run* and *correr* as translational motion verbs characterised by a fast way of moving by using one's legs; and, *jump* and *saltar* as motion verbs defined by a Figure's pushing off the ground.

The second study (the Free Verb Listing Task) provides the first empirical evidence for some observations which resulted from our semantic analysis. Specifically it was found that English and Spanish organise their human locomotion verb lexicons in similar ways, that is, both languages possess a larger number of walking verbs over running and jumping verbs, as shown by the greater number of manner verbs which were listed for *walk* and *andar*.

In the third study (the Rating Task), further empirical evidence for these findings is provided. In addition, this study has elucidated the specific motor pattern which is denoted or implied by each English and Spanish human locomotion verb,

and has suggested, for the first time in this area of research, that some motion verbs might be considered by language users as mixed motor pattern verbs.

On the whole, our findings are explained by the fact that walking is the default way of moving for humans; it is a more basic daily activity than jumping or running. Nowadays, people might run to catch the bus or metro, or jump over an obstacle, but they most often walk from one place to another. Therefore, as also stated in Chapter 5, it could be hypothesised that the world's languages are more likely to posses a more extensive manner verb lexicon for walking activities than for running or jumping activities. Moreover, this claim might be also extended beyond manner verbs to other linguistic units which can also convey manner-of-motion information; for example, ideophones or sound symbolic expressions such as those examined by Ibarretxe-Antuñano (2006a).

To conclude, this chapter represents our first attempts to explore the English and the Spanish motion verb lexicons from a psycholinguistic perspective. A dissertation would not be enough either to uncover the semantics of all the motion verbs included in our corpus or to answer all the questions that emerged from the semantic analysis. The empirical research reported here, however, has satisfactorily dealt with an important subdomain of motion, that of human locomotion. It has provided interesting insights into how English and Spanish organise their lexicons and into the complex semantic nature of human locomotion verbs.

CHAPTER 7

CONCLUSIONS

7.1. Summary of the main points

7.2. Possible directions for future research

7.3. Applications

7.1. Summary of the main points

The work described in this dissertation has been primarily concerned with the semantics of English and Spanish motion verbs from a contrastive point of view, bearing on Talmy's theory of lexicalisation patterns for the domain of motion (Chapter 2). Talmy was one of the pioneers of the cognitive linguistics enterprise, which was born as reaction against formal approaches to language.

Talmy's seminal work has engendered a great deal of research and debate in the literature on motion event descriptions over the last two decades (Chapter 3). Linguistic research on the expression of motion has documented habitual ways of speaking and writing about motion which have served as the foundation for further investigations of how children acquire these language-specific semantic patterns, on the effects of these patterns in language processing, and on whether the effects have an influence on non-linguistic cognition. Despite this bulk of research, research on motion events has frequently overlooked the fact that motion verbs might also encode other sorts of semantic information in their verb roots apart from Path of motion and Manner of motion, and that other minor lexicalisation patterns might occur as well. Furthermore, more often than not, scholars have neglected the study of path verbs in favour of the study of manner verbs, as the expression of Manner in verbs has been so far the most interesting diverging point between satellite- and verb-framed languages. Finally, hardly any work has carried out an in-depth analysis of the semantics of motion verb lexicons of verb- and satellite-framed languages apart from those motion verbs which were found in novels or were elicited orally (e.g., Jovanovic & Martinovic-Zic, 2005; Özçalişkan, 2004; Slobin, 2005).

Research on motion verbs from different theoretical backgrounds (Chapter 4, Sections 4.2, 4.3. and 4.4) has provided valuable insights into the syntactic and semantic nature of motion verbs. The general tendency has been to separate path verbs from manner verbs in these classifications. Path verbs have been often divided into classes in terms of the trajectories they describe or in terms of whether or not they describe the achievement of an endpoint. Manner verbs have been grouped into two classes, namely, translational motion verbs and self-contained motion verbs, though much more granular classifications have been proposed as well.

This dissertation was intended to contribute to crosslinguistic research on motion events by examining a substantial part of the motion verb lexicons in English and Spanish. Special attention has been given to the sorts of conflations which could be found in these motion verbs in addition to the path notions and the fine-grained manner information conveyed by motion verbs in these two languages. In this dissertation, we have adopted an approach to the semantics of motion verbs, i.e., decompositional analysis, which has allowed uncovering both crosslinguistic differences and similarities between the two languages. This framework starts from the general components for a motion event identified by Talmy, but incorporates a list of types of path and a list of manner parameters which permits a much more granular analysis of the semantics of motion verbs. Additionally, this dissertation sets off to explore human locomotion verbs using empirical methods (Chapter 6): incorporating definition and feature listing, free verb listing, and rating tasks. These three studies have offered interesting insights into how English and Spanish organise their lexicons and into the complex semantics of human locomotion verbs; moreover, it has provided empirical support for some of the findings from the linguistic analysis and has suggested that some motion verbs might be considered as a combination of more than one motor pattern.

Comparison between the two languages has led to the identification of some tendencies or similarities: (a) conflation of Motion plus one additional semantic component, either Manner or Path, is the most characteristic lexicalisation pattern of both motion verb lexicons; (b) both languages have path verbs which express at least 13 different types of path; among them, the most frequently lexicalised types of path are 'Away from G', 'Up/Onto G – Upwards', 'To/towards G' and 'Down from/to G – Downwards', whereas the least frequent is 'Out of G'; and (c) both languages possess many more walking verbs than running and jumping verbs. These tendencies suggest that there are important similarities in how English and Spanish, and probably other verb- and satellite-framed languages, lexicalise the domain of motion in their verb roots. In addition, crosslinguistic differences have also been noted: (a) English manner-of-motion verbs outnumber those of Spanish, as previous research has also suggested, and tend to exploit some manner parameters much more often than Spanish manner verbs (e.g., manner information about the mental and physical

state of the Figure and details about the way the Figure moves its legs while walking, motion using vehicles and motion while dancing), and (b) Spanish path verbs exceed in number English path verbs, although both languages are able to express similar types of path.

7.2. Possible directions for future research

In the future, we intend to go on with our examination of the semantics of motion verbs using experimental methods. The semantic analysis carried out in Chapter 5 has raised the question of whether motion verbs mean what dictionaries say they do. In other words, the semantic representations for the English and the Spanish motion verbs that have emerged as a result of our analysis call for psycholinguistic validitation

Moreover, we have come across some conflicting cases and some problems which need to be addressed in future research. First, the group of verbs which encode Motion + Path + Manner is one of the most interesting for further research. We have argued that it is not clear for many verbs (e.g., *dive*, *plummet*, *plunge*, *fugarse* 'to flee') whether they encode both Path and Manner (besides the fact of Motion) or whether they only encode Manner, and Path is just implied (i.e., these verbs typically occur with certain trajectories). Naming and typicality judgement tasks might help to unveil the semantic nature of this set of verbs. For example, would an event be labelled by *dive* or judged as typical of *diving* if (a) the Figure does not move in a rapid, highly energetic way? or (b) if the Figure does not follow a downwards path? Second, another conflictive group of verbs which could be explored by using the same methods is *hound, pursue* and *shadow*; these verbs might denote some manner information besides Path or trajectory of motion. These verbs have been coded as path verbs (i.e., 'After G' type of path), but *hound* seems to emphasise the Figure's relentless pursuit of a second Figure, *pursue* seems to often imply that the chaser intends to capture or kill a second Figure and *shadow* appear to imply secretive motion. Third, when exploring English vehicle verbs it was noted that dictionaries do not always agree on whether these verbs also allow agentive uses, except for the

following two groups of vehicle verbs: (a) *bus*, *ferry*, *parachute*, *ship*, *shuttle* and *truck*, which seem to allow agentive use, and (b) *bobsleigh*, *bobsled*, *cab*, *dogsled*, *gondola/e*, *jeep*, *kayak*, *moped*, *motorcycle/bike*, *rickshaw*, *rollerblade*, *skate*, *skateboard*, *ski* and *yacht*, which only seem to denote that the Figure uses these vehicles or instruments as his/her means of locomotion. Further research is needed to test the hypothesis that large vehicles (i.e., the former group) might allow both agentive and self-agentive motion, as they can transport people, goods, etc, whereas small vehicles (i.e., the latter group) might just be used for Figures as means of their own locomotion. Finally, it has been noted that the boundary between self-contained and translational motion is fuzzy, especially for some manner categories such as 'Unsteady Motion'. It might be that (a) a verb inherently encodes a specific type of motion or that (b) that meaning derives from being immersed in a specific syntactic frame such as the English translational motion frame (i.e., manner verb + path satellites).

Another line of research may be needed to shed light on the semantic weight of the manner parameters which constitute a verb's meaning. When grouping motion verbs into manner categories, the question of whether some manner features are more important than others for defining a verb or whether all manner categories are on equal footing was posed. By way of illustration, *roar*, *whiz* and *zoom* encode information about the rate of motion and about the noise that results from the motion. Thus, are events designated by these verbs better categorised as (a) noisy activities, (b) fast speed activities, or (c) as both?

Last, it would be of value for crosslinguistic research to test whether the tendencies described above for English and Spanish apply to other verb- and satellite-framed languages. Specifically, do languages (a) have a preference for lexicalising some types of paths over others and (b) have a larger number of verbs depicting different ways in which the Figure walks than verbs denoting different ways of running and jumping?

7.3. Applications

This dissertation may have three main distinct applications: (1) for research in this field, (2) for language teaching and (3) for translation.

First, research on Motion may be benefited in a number of ways. The approach presented in this dissertation could be extended to the study of the motion verb lexicons of other verb- and satellite-framed languages as well as to the study of other linguistic units which can also express path and/or manner information, such as satellites, verb particles, and sound symbolic expressions. Furthermore, this field of research would benefit from the better understanding of the semantics of English and Spanish motion verbs and from the general tendencies observed across the two languages provided by this dissertation. Many psycholinguistic studies on motion, including those related to linguistic relativity, start from linguistic data that have not always been validated. Studies like the present one provide a more firm foundation for further psycholinguistic research.

Second, the semantic representations of motion verbs proposed in this dissertation may have useful applications for teaching English as a second language, in particular, for teaching English to speakers of verb-framed languages. Students of English find it very difficult to learn and master the vast amount of English manner-of-motion verbs. If manner verbs are presented to students in categories and then explored in terms of the additional manner information they encode, it will be easier for them to understand their semantics.

Finally, this dissertation may benefit the field of translation. The complex semantic nature of a vast number of English and Spanish motion verbs has been uncovered and compared. Based on this comparison, translators might either choose the most semantically equivalent verb if the context of the utterance allows its use, or they might render the motion verb by other linguistic means in order to be as faithful to the original as possible while sounding natural in the target language.

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APPENDIX 1

MOTION VERBS IN ENGLISH

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
abandon	Transl		Path	1	away from G (departure, source)		From Anglo-French abanduner, from (mettre) a bandun to hand over, put in someone's control. [transitive verb] to leave a place, thing or person forever. TFD: To give up by leaving or ceasing to operate or inhabit, especially as a result of danger or other impending threat. MW: to withdraw from often in the face of danger or encroachment.	[transitive verb] To forsake, leave, or desert (a place, person, or cause); to leave without one's presence, help, or support.	
accelerate	Transl		Manner	1		Rate- increase	[intransitive verb](MOVE FASTER) When a vehicle or its driver accelerates, the speed of the vehicle increases. If a person or object accelerates, it goes faster. TFD: [intransitive verb+ To move or act faster. [transitive verb] To increase the speed of. MW: to cause to move faster. to move faster : gain speed.	[transitive verb] To quicken, or add to the speed of (a motion or process).	
accompany	Transl		Figure + CO-MOTION	2			[transitive verb] to go with someone. To show someone how to get to somewhere. TFD: To be or go with as a companion. MW: [intransitive and transitive verb] to perform an accompaniment to or for.	[transitive verb] To go in company with, to go along with; to convoy; to escort (for safety), to attend (as a retinue).	
advance	Transl	AM	Path	1	forwards		Middle English advauncen, from Anglo-French avancer, from Vulgar Latin *abantiare, from Late Latin abante in front, from Latin ab- + ante . [intransitive and transitive verb] to go or move something forward. TFD:To go or move forward or onward. To cause to move forward. MW: to bring or move forward. to move forward.	[intransitive and transitive verb] To move forward in place.	

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[1] The first definition provided for each verb was taken from Cambridge Advanced Learners' Dictionary (CALD).

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
alight	Transl		Path	1	down onto G (arrival, endpoint)		[intransitive verb] to land on something. TFD: To get down, as from a vehicle; dismount. MW: to come down from something (as a vehicle).	[intransitive verb] Referring chiefly to the result: To land. To get down from a horse or conveyance; to dismount or descend for the time; to finish one's ride, stop.	
approach	Transl		Path	1	closer to G		Middle English approchen, from Anglo-French aprocher, from Late Latin appropiare, from Latin ad- + prope near; akin to Latin pro before . [intransitive and transitive verb] to come near or nearer to something or someone in space, time, quality or amount. TFD: To come near or nearer, as in space or time. To come or go near or nearer to. MW: to draw nearer. to draw closer to.	[intransitive verb] To come nearer (relatively), or draw near (absolutely), in space. [transitive verb] To come near to.	
amble	Transl		Manner	1		mp-walk; Rate-slow; State of Figure (relaxed)	[intransitive verb] to walk in a slow and relaxed way. TFD: [intransitive verb] To walk slowly or leisurely; stroll. To move along at an easy gait by using both legs on one side alternately with both on the other. Used of a horse. MW: o go at or as if at an amble. Saunter. LLA: To walk in a slow and relaxed way, especially when you are going a short distance, or not going anywhere in particular.	[intransitive verb] Of a horse, mule, etc.: To move by lifting the two feet on one side together, alternately with the two feet on the other; hence, to move at a smooth or easy pace. Of a person: To ride an ambling horse, to ride at an easy pace. Hence, To move in a way suggesting the motion or pace of an ambling horse.	*mp-walk*
arise1	Self-c		Manner	1		Posture (vertical-upwards)	[intransitive verb] (GET UP). TFD: To get up, as from a sitting or prone position; rise. To move upward; ascend.MW: To get up.	[intransitive verb] To get up from sitting, lying, repose.	
arise2	Transl		Path	1	Earth-based orientation: upwards		TFD: [intransitive verb] To move upward; ascend. MW: rise, ascend.	[intransitive verb] To ascend, go or come higher.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
arrive	Transl		Path	1	to/towards G (arrival, endpoint)		from Anglo-French ariver, from Vulgar Latin arripare to come to shore, from Latin ad- + ripa shore. [intransitive verb] to reach a place, especially at the end of a journey. TFD:To reach a destination. MW: to reach a destination.	[intransitive verb] To come to shore or into port; to land.To come to, land at, reach (a shore, port, etc.). To come to the end of a journey, to a destination, or to some definite place; to come upon the scene, make one's appearance.	
ascend	Transl		Path	1	Earth-based orientation: upwards		Latin ascendere, from ad- + scandere to climb [intransitive and transitive verb] to move up or climb something. TFD:To go or move upward; rise.To move upward upon or along; climb. MW: to move upward	[intransitive verb] (occas. emphasized by a redundant up) To go or come up, originally by a gradual motion, to a relatively higher position. Of voluntary agents: To climb up, travel up, walk up; to soar, mount. Of inanimate things: To rise, be raised, move to a higher level.	
back	Transl	AM	Path	1	backwards		[intransitive and transitive verb] to (cause to) move backwards. TFD: To cause to move backward or in a reverse direction. To move backward. MW: to move backward. to cause to go back or in reverse.	[intransitive verb] (for refl.) To move, go, come back. [transitive verb] To cause to move back, put back.	
backpack	Transl		Manner	1		Travelling with one's belongings	[intransitive verb] to travel or camp while carrying your clothes and other things that you need in a backpack; TFD: [intransitive verb] To hike while carrying a backpack. MW: to carry (food or equipment) on the back especially in hiking. to hike with a backpack.	A pack carried on the back; spec. one consisting of a folded parachute. [intransitive verb], to carry a pack on the back: used esp. of hiking, camping, etc. Also [transitive verb]	
balloon	Transl	AM?	Manner	1		Vehicle / Instrument	TFD: [intransitive verb] To ascend or ride in a balloon. MW: [intransitive verb] to ascend or travel in or as if in a balloon.	[intransitive verb] To ascend in a balloon. [transitive verb] To carry up in, or as in, a balloon.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
bend	Self-c	AM	Manner	1		Posture (Bend)	[intransitive and transitive verb] to (cause to) curve. TFD:To cause to assume a curved or angular shape. To assume a curved, crooked, or angular form or direction. To incline the body; stoop. MW: to curve out of a straight line or position; specifically : to incline the body in token of submission. to turn or force from straight or even to curved or angular.	[intransitive verb] To assume or receive a curved form, or a shape in which one part is inclined at an angle to the other. To bring into the shape or direction of a bent bow. [transitive verb] To put or bring into the shape of a bow; to arch.	
bicycle; bike	Transl	AM?	Manner	1		Vehicle / Instrument	[intransitive verb and transitive verb] INFORMAL to go somewhere by bicycle. To use a motorcycle to deliver something to someone. TFD: [intransitive verb] To ride or travel on a bicycle. MW: [intransitive verb]	[intransitive verb] To ride on a bicycle.	
blow	Transl	AM	CAUSE	1			[intransitive and transitive verb] to move and make currents of air, or to be moved or make something move on a current of air. TFD: [intransitive verb] To be in a state of motion. Used of the air or of wind.To move along or be carried by or as if by the wind. [transitive verb] To cause to move by means of a current of air. MW: (of air)to be in motion. to move or be carried by or as if by wind.	[intransitive verb] The proper verb naming the motion or action of the wind, or of an aerial current. [transitive verb] To drive or carry (things) by means of a current of air	
boat	Transl	AM	Manner	1		Vehicle / Instrument	AS NOUN: a small vehicle for travelling on water. TFD: [intransitive and transitive verb] To travel by boat / to transport by boat. MW: [transitive verb] to place in or bring into a boat. [intransitive verb] to go by boat.	[intransitive verb] To go in a boat, to row; to conduct a freight-boat (U.S.). [transitive verb] To place in a boat; to carry in a boat.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
bob	Self-c	AM	Manner	1		Iterative Motion (up-down)	[intransitive verb] to move up and down quickly and gently especially on the surface of water. TFD: [transitive and intransitive verb]To cause to move up and down. To move up and down. MW: [transitive and intransitive verb] to move up and down in a short quick movement. to move up and down briefly or repeatedly.	[intransitive verb] To move up and down like a buoyant body in water, or an elastic body on land; hence, to dance; to move to and fro with a similar motion, esp. said of hanging things rebounding from objects lightly struck by them. To move up or down with a bob or slight jerk. [transitive verb] To move (a thing) up or down with a bob or slight jerk.	
bobsleigh (UK); bobsled (US)	Transl	NO	Manner	1		Vehicle / Instrument	AS NOUN: a small vehicle with long metal blades under it, built for racing down ice-covered tracks. TFD: [intransitive verb] To ride or race in or as if in a bobsled. MW: NO FOUND AS MOTION VERB	AS NOUN: orig. U.S. A sled or sleigh, made of two short sleds or sleighs coupled together; used in drawing logs from the forest to a river or public road, and for various other purposes. NO FOUND AS MOTION VERB	
bolt	Transl		Manner	1		Rate-fast	[intransitive verb] to move very fast, especially as a result of being frightened. TFD: To move or spring suddenly. MW: to move suddenly or nervously. to move or proceed rapidly. to dart off or away.	[intransitive verb] To spring, move suddenly, with its causal.To move or come as with a spring or sudden bound, to dart. To dart off or away, make off with himself, take flight, escape; to rush suddenly off or away.	*mp-run*
boogie	Self-c		Manner	1		Dance	[intransitive verb] dance to pop music. TFD: To dance to rock music. MW: NO FOUND AS MOTION VERB.	[intransitive verb] To dance to boogie-woogie music.	
bop	Self-c		Manner	1		Dance	[intransitive verb] dance to pop music. TFD: NO FOUND. MW: to dance or shuffle along to or as if to bop music.	[intransitive verb] To play bop music, or in the style of this. To dance to pop music.	
bounce	Self-c	AM	Manner	1		Bounce	[intransitive and transitive verb] to (cause to) move up or away after hitting a surface. To move in an energetic and enthusiastic manner. TFD: To rebound after having struck an object or a surface. MW: to rebound or reflect after striking a surface (as the ground).	[intransitive verb] To move with a sudden bound. To bound like a ball; to throw oneself about: esp. said of an elastic or bounding movement by a heavy or bulky body. [transitive verb] To cause to rebound.	*mp-jump*

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
bound	Transl		Manner	1		mp-jump; Characteristic use of lower body (Steps-large jumps)	[intransitive verb] to move quickly with large jumping movements. LLA: To move quickly forward with long high jumps. TFD: To leap forward or upward; spring. To progress by forward leaps or springs. To bounce; rebound. MW: to move by leaping .	[intransitive verb] To spring upwards, leap; to advance with leaps or springs: said both of inanimate and animate objects.	*No significant difference*
bow	Self-c	AM	Manner	1		Posture (Bend, Twist, Curve)	[intransitive and transitive verb] to bend your head or body forward, especially as a way of showing someone respect or expressing. TFD: To bend or curve downward; stoop. To bend (the head, knee, or body) to express greeting, consent, courtesy, acknowledgment, submission, or veneration. MW: to bend the head, body, or knee in reverence, submission, or shame. to cause to incline.	Intransitive uses. To bend the body, knee, or head, in token of reverence, respect, or submission; to make obeisance. [transitive verb] To cause (a thing) to bend; to force or bring into a curved or angular shape; to inflect, curve, crook. arch. and dial.	
bowl	Transl	AM	Manner	1		Revolve, Rotate, Spin	[intransitive and transitive verb] to roll a ball along a smooth grass or artificial surface during a game. TFD: roll (a ball).move along on or as if on wheels or a wheeled vehicle. MW: to roll a ball in bowling. to roll (a ball) in bowling. to travel smoothly and rapidly (as in a wheeled vehicle).	[intransitive verb] To play at bowls; to trundle or roll a bowl, etc. along the ground. [transitive verb] To cause to roll, to send with a rolling or revolving motion (a bowl, a hoop, etc.).	
bus	Transl	AM	Manner	1		Vehicle / Instrument	AS NOUN: a large vehicle in which people are driven from one place to another. [transitive verb] to take people somewhere by bus. TFD:[intransitive and transitive verb] to transport in a bus; to travel in a bus. MW: [intransitive verb] to travel by bus. to work as a busboy. [transitive verb] to transport by bus.	[intransitive verb] To travel by bus; also in phr. to bus it. colloq. [transitive verb] To transport (people) by bus from one place to aNOther, esp. in order to encourage or achieve racial integration. Hence bus(s)ed ppl. a. U.S.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
cab	Transl	NO	Manner	1		Vehicle / Instrument	AS NOUN: a car with a driver whom you pay to take you somewhere. TFD: [intransitive and transitive verb] to ride or travel in a taxicab; to ride a taxicab. MW: [intransitive verb] to travel in a cab.	[intransitive verb] (Also to cab it). To travel or go in a cab. To drive a cab.	
cancan	Self-c		Manner	1		Dance	AS NOUN: a fast dance, originally performed in France in the 19th century, in which a row of women on a stage kick their legs high and lift their skirts. NO FOUND AS MOTION VERB	AS NOUN: A kind of dance made popular at the public balls in Paris, with extravagant and indecent gestures. NO FOUND AS MOTION VERB	
canoe	Transl	AM	Manner	1		Vehicle / Instrument	AS NOUN: a small light narrow boat, pointed at both ends and moved using a paddle (= a short pole with a flat blade). [intransitive and transitive verb] to travel in a canoe. TFD: [transitive verb] To carry or send by canoe. [intransitive verb] to travel in or propel a canoe. MW: [transitive verb] to transport in a canoe; also : to travel by canoe down (a river). [intransitive verb] to go or travel in a canoe.	[intransitive verb] To paddle or propel a canoe; to move as in a canoe.	
canter1	Transl		Manner	1		Rate-fast	Etymology: short for obsolete canterbury, noun (canter), from Canterbury, England; from the supposed gait of pilgrims riding to Canterbury. [intransitive verb] If a horse canters, it moves at a quite fast but easy and comfortable speed. TFD: To go or move at a canter. MW: [intransitive verb] to move at or as if at a canter: lope.	[intransitive verb] Of a horse, etc.: To move in a moderate gallop, raising the two fore-feet nearly at the same time with a leap or spring. Of the rider. To run or move as in a canter; to move nimbly or briskly. [transitive verb] To make (a horse) go at a canter, to ride at a canter.	*mp-run*
canter2	Transl		Manner	1		Vehicle / Instrument (on a horse); Rate-fast	TFD: To ride a horse at a canter. MW: [intransitive verb] to ride a horse at a canter	[intransitive verb] Of the rider.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
caper	Transl		Manner	1		Playful Motion	Etymology: probably by shortening & alteration from capriole. [intransitive verb] to run and jump about in an energetic, happy way. TFD: (as noun) A playful leap or hop. To leap or frisk about; frolic. MW: [intransitive verb] to leap or prance about in a playful manner.	[intransitive verb] To dance or leap in a frolicsome manner, to skip for merriment; to prance as a horse. Also with about, away.	*Low ratings. NO significant difference*
capriole	Self-c		Manner	1		mp-jump	[intransitive verb] to perform a capriole, of horses in dressage. TFD: To perform a capriole (=An upward leap made by a trained horse without going forward and with a backward kick of the hind legs at the height of the leap. A playful leap or jump; a caper.). MW: AS NOUN: a playful leap. a vertical leap with a backward kick of the hind legs at the height of the leap. [intransitive verb]	[intransitive verb] To leap, skip, caper. Also said of horses (and their riders)	
capsize	Self-c	AM	Manner	1		Upside Down	Etymology: perhaps from Spanish capuzar or Catalan cabussar to thrust (the head) underwater. [intransitive and transitive verb] to (cause a boat or ship to) turn upside down accidentally while on water. TFD: To overturn or cause to overturn. MW: to cause to overturn. To turn over.	[transitive verb] To upset, overturn (esp. on the water). [intransitive verb] (for refl.) To be upset or overturned.	
caravan	Transl	AM?	Manner	1		Vehicle / Instrument	AS NOUN: UK (US trailer) a wheeled vehicle for living or travelling in, especially for holidays, which contains beds and cooking equipment and can be pulled by a car. TFD: [intransitive verb] to travel in a caravan. MW: [intransitive verb] to travel in a caravan.	[intransitive verb] To travel or live in a caravan. [transitive verb] To convey by caravan. rare.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
careen 1	Self-c	AM	Manner	1		Posture (to one side)	TFD: [transitive verb] To cause (a ship) to lean to one side; tilt. [intransitive verb] To lean to one side, as a ship sailing in the wind.To turn a ship on its side for cleaning, caulking, or repairing. MW: [transitive verb] to put (a ship or boat) on a beach especially in order to clean, caulk, or repair the hull. to cause to heel over. [intransitive verb] to careen a boat. to undergo this process. to heel over. to sway from side to side.	[intransitive verb] [transitive verb] To turn (a ship) over on one side for cleaning, caulking, or repairing; to clean, caulk, etc. (a ship so turned over). [intransitive verb] 'A ship is said to careen when she inclines to one side, or lies over when sailing on a wind'.	
careen2	Transl		Manner	1		Rate-fast; Uncontrolled Motion/Unsteady Motion?	[intransitive verb] to go forward quickly while moving from side to side. TFD: To rush headlong or carelessly; career. MW: career. to go at top speed especially in a headlong manner.	[intransitive verb] [Influenced by CAREER] To rush headlong, to hurtle, esp. with an unsteady motion. Chiefly U.S.	
career	Transl		Manner	1		Rate-fast; Uncontrolled Motion?	[intransitive verb] (especially of a vehicle) to move fast and uncontrollably. TFD: move headlong at high speed. MW: [intransitive verb] to go at top speed especially in a headlong manner.	[intransitive verb] To gallop, run or move at full speed. [transitive verb] To make (a horse) career. To move swiftly over.	
cavort	Transl		Manner	1		Playful Motion	[intransitive verb] to jump or move around in a playful way, sometimes noisily, and often in a sexual way. TFD: To bound or prance about in a sprightly manner; caper. MW: [intransitive verb] to leap or dance about in a lively manner.	orig. U.S. [intransitive verb] To curvet, prance, caper about, frisk, bound: said of a horse, or rider, and hence transf.	*Low ratings. NO significant difference*

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
charge	Transl		Path + Manner	2	to/towards G	Rate-fast; Violent Motion	[intransitive and transitive verb] to move forward quickly and violently, especially towards something which has caused difficulty or annoyance. LLA: To run quickly and with a lot of energy, especially when you are going to attack someone or something. TFD: To rush forward in or as if in a violent attack. MW: to rush forward in or as if in assault.	[intransitive verb] To rush against or upon, with all one's force, in a hostile way; to spur one's horse against at full gallop; to bear down upon, make a violent onset on, attack or assail with impetuosity. Esp. in military use; also said of a powerful animal rushing at any opponent, of players at football, etc.	*mp-run*
chariot	Transl	AM	Manner	1		Vehicle / Instrument	AS NOUN: a two-wheeled vehicle that was used in ancient times for racing and fighting and was pulled by a horse. TFD: [intransitive and transitive verb] To convey or ride in a chariot. MW: [intransitive verb] to drive or ride in or as if in a chariot. [transitive verb] to carry in or as if in a chariot.	[transitive verb] To carry or convey in a chariot: [intransitive verb] To drive or ride in a chariot.	
chase	Transl		Path + Manner	2	after G	Rate-fast	[intransitive and transitive verb] to hurry after someone or something in order to catch them. TFD: To follow rapidly in order to catch or overtake; pursue. To go or follow in pursuit. MW: to follow rapidly. to chase an animal, person, or thing.	[intransitive verb] To pursue with a view to catching. To run with speed; to hurry or rush along. [transitive verb] To pursue for prey or sport; to hunt. [transitive verb] To pursue or run after in play.	*mp-run*
circle	Transl		Manner	1		Path-shape (circular)	[intransitive and transitive verb] to move in a circle, often around something. TFD: [transitive verb] To move in a circle around. [intransitive verb] To move in a circle. MW: to move in or as if in a circle	[transitive verb] To make the circuit of, move round. [intransitive verb] To move in a circle (around, about, etc.).	
circuit	Transl		(Motion) + Ground	1			[intransitive and transitive verb] TFD: make a circuit. MW: to make a circuit.	[transitive verb] To go, pass, move, or travel round; to make the circuit of, compass about. [intransitive verb] To go or move in a circuit.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
circulate	Transl	AM	(Motion) + Ground	1			[intransitive and transitive verb] to move around or through something, or to make something move around or through something. TFD: cause to move in a circuit or system; move in circles. MW: to move in a circle, circuit, or orbit; especially, to follow a course that returns to the starting point.	[intransitive verb] To move round, turn round, revolve, formerly round an axis (obs.), or in an orbit (arch.); Now round a circuit, circuitous course, system of pipes, or the like. [transitive verb] To go or run round; to encircle, encompass, surround.	
clamber	Transl		Manner	1		Forced Motion (Energy-low); Use of one's hands and legs	[intransitive verb] to climb up, across or into somewhere with difficulty, using the hands and the feet. TFD: To climb with difficulty, especially on all fours; scramble. MW: to climb awkwardly (as by scrambling).	[intransitive verb] To climb by catching hold with hands and feet; to creep or crawl up (or down); to climb with difficulty and effort.	
climb	Transl		Path + Manner	2	up/onto G	Use of one's hands and legs	[intransitive and transitive verb] to use your legs, or your legs and hands, to go up or onto the top of something. TFD: To move oneself upward, especially by using the hands and feet.To rise slowly, steadily, or effortfully; ascend.To move upward on or mount, especially by using the hands and feet or the feet alone; ascend. To move in a specified direction by using the hands and feet. MW: to go upward or raise oneself especially by grasping or clutching with the hands. to go about or down usually by grasping or holding with the hands.	[intransitive verb] To raise oneself by grasping or clinging, or by the aid of hands and feet; 'to mount by means of some hold or footing' (J.); to creep up; to ascend, come, or go up, a perpendicular or steep place. Often with up. to climb down: to descend by the same means	
clip	Transl		Manner	1		Rate-fast	[intransitive verb] TFD: to move rapidly. MW: NO FOUND	[intransitive verb] To move the wings rapidly; to fly rapidly. [intransitive verb] (colloq.) To move or run quickly. Cf. cut. U.S.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
clump	Transl		Manner	1		mp-walk; Noisy activity; Characteristic use of lower body (Steps-heavy, slow)?	[intransitive verb] to walk noisily with slow, heavy steps. LLA: To walk with slow, heavy, noisy steps, for example because you are wearing heavy shoes. TFD: To walk or move so as to make a heavy dull sound. MW: to walk or move clumsily and noisily.	[intransitive verb] To walk or tread heavily and clumsily. [This has associations with CLUMP, or its Dutch sources. People clump with klumpen or wooden shoes.]	*mp-walk*
coach	Transl	AM?	Manner	1		Vehicle / Instrument	AS NOUN: a long motor vehicle with comfortable seats, used to take groups of people on journeys.TFD: [intransitive and transitive verb] to transport by or ride in a coach. MW: [intransitive verb] to go in a coach.	[intransitive verb] To ride or drive in a coach or motor coach. [transitive verb]To convey in, seat in, provide with, a coach.	
coggle	Self-c		Manner	1		Unsteady Motion	TFD: [intransitive verb] to walk unsteadily; dodder, toddle. To move unsteadily; wobble. MW: NO FOUND	[intransitive verb and transitive verb] To shake from side to side; to be unsteady; to wabble.	
coil	Self-c	AM	Manner	1		Revolve, Rotate, Spin	[intransitive and transitive verb] TFD: to form concentric rings or spirals; To wind in concentric rings or spirals. MW: [intransitive verb] to move in a circular or spiral course . to form or lie in a coil. [transitive verb] to wind into rings or spirals	[transitive verb] To twist in or into a circular, spiral, or winding shape; to twist or wind round (something). [intransitive verb] (for refl.) To throw oneself into a spiral or winding form, to twist oneself round.	

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English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
come	Transl		Path	1	Deixis: towards G (speaker)		[intransitive verb] to move or travel towards the speaker or with the speaker. TFD: To advance toward the speaker or toward a specified place; approach. MW: to move toward something.	An elementary intransitive verb of motion, expressing movement towards or so as to reach the speaker, or the person spoken to, or towards a point where the speaker in thought or imagination places himself, or (when he is not himself in question) towards the person who forms the subject of his narrative. It is thus often used in opposition to go, although the latter does not primarily involve direction, and is often used without reference thereto. Come is also used merely of the accomplishment of the movement, involved in reaching or becoming present at any place or point; and sometimes the entrance upon motion, involved in issuing from a source, is alone, or at least chiefly.	
conduct	Transl		Figure + CO-MOTION	2			[transitive verb] to lead someone to a particular place. TFD: To act as a conductor.To lead. MW: to show the way.	[transitive verb] To go with, or before, and show the way to (any one); to lead, escort, guide.	
conga	Self-c		Manner	1		Dance	AS NOUN: a Latin American dance in which a chain of people hold each other around the waist and follow the leader around using simple steps and kicks. [intransitive verb] TFD: to perform this dance. MW: NO FOUND	AS NOUN: A Latin-American dance of African origin, usu. performed by several people in single file and consisting of three steps forward followed by a kick. Also as v. [intransitive verb], to dance the conga.	
convoy	Transl		Figure + CO-MOTION	2			[transitive verb] to travel with a vehicle or group of people to make certain that they arrive safely. TFD: [transitive verb] to accompany, especially for protection; to escort. MW: to escort for protection.	[transitive verb] To accompany, escort. To accompany as guide or conductor; to conduct, guide.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
crash	Transl		CONCURRENT RESULT	1			[intransitive and transitive verb] to hit something, often making a loud noise or causing damage. TFD: To undergo sudden damage or destruction on impact. To move noisily or so as to cause damage. MW: o fall, land, or hit with destructive force.	[transitive verb] To break in pieces with violence and noise; to dash in pieces, shiver, shatter, smash. [intransitive verb] To break or fall to pieces with noise, as when dashed down or violently struck; to smash, break up.	
crawl	Transl		Manner	1		Contact [between F and G]: Body close to ground; Rate-slow	[intransitive verb] to move slowly or with difficulty, especially (of a person) with the body stretched out along the ground or on hands and knees. TFD: To move slowly on the hands and knees or by dragging the body along the ground; creep. MW: To move slowly in a prone position without or as if without the use of limbs.	[intransitive verb] To move slowly in a prone position, by dragging the body along close to the ground, as a child upon its hands and knees, any short-limbed quadruped or reptile, an insect, serpent, worm, slug.	*mp-walk*
creep1	Transl		Manner	1		Furtive Motion; mp-walk?	[intransitive verb] to move slowly, quietly and carefully, usually in order to avoid being noticed. TFD: [intransitive verb] To move stealthily or cautiously. MW: to go timidly or cautiously so as to escape notice. LLA: To walk quietly and carefully because you do not want anyone to notice you.	[intransitive verb] To move softly, cautiously, timorously, or slowly; to move quietly and stealthily so as to elude observation; to steal (into, away, etc.).	*mp-walk*
creep2 [crawl]	Transl		Manner	1		Contact [between F and G]: Body close to ground	TFD: [intransitive verb] To move with the body close to the ground, as on hands and knees. MW: [intransitive verb] to move along with the body prone and close to the ground. to move slowly on hands and knees.	[intransitive verb] To move with the body prone and close to the ground, as a short-legged reptile, an insect, a quadruped moving stealthily, a human being on hands and feet, or in a crouching posture. [Formerly said of snakes, worms, and other creatures without limbs, for which crawl is now more usual, though in some cases either may be used.]	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
cross	Transl		Path	1	pass/cross G		from Latin cruc-, crux [intransitive and transitive verb] to go across from one side of something to the other. TFD: To go or extend across; pass from one side of to the other. MW: to move, pass, or extend across something.	[transitive and intransitive verb] To pass over a line, boundary, river, channel, etc.; to pass from one side to the other of any space.	
crouch	Self-c		Manner	1		Posture (vertical-downwards; Bend)	[intransitive verb] to bend your knees and lower yourself so that you are close to the ground and leaning forward slightly. TFD: To stoop, especially with the knees bent. MW: to lower the body stance especially by bending the legs.	[intransitive verb] To stoop or bend low with general compression of the body, as in stooping for shelter, in fear, or in submission; to cower with the limbs bent. Formerly often applied to the act of bowing low in reverence or deference. Now said also of the depressed and constrained posture assumed by a beast in fear or submission, or in order to make a spring.	
cruise	Transl		Manner	1		Vehicle / Instrument (ship)	[intransitive verb] to travel on ships for pleasure. TFD: To sail or travel about, as for pleasure or reconnaissance. MW: To sail about touching at a series of ports.	[intransitive verb] To sail to and fro over some part of the sea without making for a particular port or landing-place, on the look out for ships, for the protection of commerce in time of war, for plunder, or (in modern times) for pleasure. [transitive verb] To sail to and fro over.	
curvet	Self-c	AM	Manner	1		mp-jump	[intransitive verb] TFD: to leap in a curvet, to prance; [transitive verb] to cause to leap in a curvet [i.e., a light leap by a horse in which both hind legs leave the ground before the forelegs come down. MW: [intransitive verb] To make a curvet; also : prance, caper.	[intransitive verb] Of a horse: To execute a curvet, leap in a curvet. Said also of the horseman. [transitive verb] To cause to curvet.	
cycle	Transl		Manner	1		Vehicle / Instrument (bike, bicycle)	[intransitive verb] to ride a bicycle. TFD: [intransitive verb] To ride a bicycle, motorcycle, or similar vehicle. MW: [intransitive verb] to ride a cycle.	[intransitive verb]To ride a bicycle or tricycle, to travel by cycle.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
dance	Self-c		Manner	1		Dance	[intransitive and transitive verb] to move the body and feet to music. TFD:To move rhythmically usually to music, using prescribed or improvised steps and gestures. [transitive verb] To engage in or perform (a dance). to cause to dance. MW: to engage in or perform a dance. to cause to dance.	[intransitive verb] To leap, skip, hop, or glide with measured steps and rhythmical movements of the body, usually to the accompaniment of music, either by oneself, or with a partner or in a set. [transitive verb] with the name or description of a dance or measure as cognate object.	
dart	Transl		Manner	1		Rate-fast	[intransitive verb] to move quickly or suddenly. TFD:To move suddenly and rapidly. MW: to move suddenly or rapidly.	[intransitive verb] To move like a dart; to spring or start with a sudden rapid motion; to shoot.	*mp-run*
dash	Transl		Manner	1		Rate-fast	[intransitive verb] to go somewhere quickly. TFD: [intransitive verb] To move with haste; rush. MW: [intransitive verb] to move suddenly or rapidly. LLA: To run very quickly for a short distance especially because you have to do something urgently.	[intransitive verb] to go, run, or rush with sudden impetuosity, or with spirited or brilliant action.	*mp-run*
dawdle	Transl		Manner	1		Rate-slow	[intransitive verb] to do something or go somewhere very slowly, taking more time than is necessary. TFD: To move aimlessly or lackadaisically. MW: to move lackadaisically (= lacking life, spirit, or zest : languid).	[intransitive verb] To idle, waste time; to be sluggish or lazy; to loiter, linger, dally.	
decelerate	Transl		Manner	1		Rate-decrease	[intransitive verb] to go more slowly; to reduce speed. TFD: To decrease the velocity of. To decrease in velocity. MW: to move at decreasing speed. to reduce the speed of : slow down.	[intransitive and transitive verb] To diminish the speed of; to cause to go slower.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
depart	Transl		Path	1	away from G (departure, source)		from Anglo-French departir, from de- + partir to divide, from Latin partire, from part-, pars part . [intransitive verb] to go away or leave, especially on a journey. TFD: To go away; leave. MW: To go away; leave.	[intransitive verb] To go apart or away, with its derived senses.	
descend	Transl		Path	1	Earth-based orientation: downwards		from Anglo-French descendre, from Latin descendere, from de- + scandere to climb. [intransitive verb] to go or come down. [intransitive and transitive verb] TFD: To move from a higher to a lower place; come or go down. MW: to pass from a higher place or level to a lower one. to pass, move, or climb down or down along.	[intransitive verb] To move or pass from a higher to a lower position in space; to come or go down, fall, sink. (The general word, including all kinds of downward motion, vertical or oblique; the opposite of ascend.)	
desert	Transl		Path	1	away from G (departure, source)		French déserter, from Late Latin desertare, frequentative of Latin deserere. [intransitive and transitive verb] to leave someone without help or in a difficult situation and not come back. TFD:leave someone who needs or counts on you; leave in the lurch. MW: to withdraw from or leave usually without intent to return.	[intransitive and transitive verb] To abandon, forsake, relinquish, give up (a thing); to depart from (a place or position).	
disembark	Trans	AM	Path + Ground (ship)	2	down from/away from G (departure, source)		Middle French desembarquer, from des- dis- + embarquer to embark. TFD: [intransitive verb] To go ashore from a ship. To leave a vehicle or aircraft. [transitive verb] To take ashore from a ship. MW: to go ashore out of a ship.	[intransitive verb] To go on shore from a ship; to land. [transitive verb] trans. To put ashore from a ship; to land.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
dive	Transl		Path + Manner	2	down into G	Forced Motion; Head first	[intransitive verb] to jump into water, especially with your head and arms going in first, or to move down under the water. LLA: To jump into water. TFD: To plunge, especially headfirst, into water. To go toward the bottom of a body of water; submerge. To fall head down through the air. MW: to plunge into water intentionally and especially headfirst. to come or drop down precipitously.	[Iintransitive verb] To descend or plunge into or under water or other liquid. (Usually, unless otherwise stated, to plunge head-foremost.). To descend or fall precipitously with increasing momentum.	
divert	Transl	AM	Path	1	Change Direction		from Middle French & Latin; Middle French divertir, from Latin divertere to turn in opposite directions. [transitive verb] to cause something or someone to change direction. TFD: To turn aside from a course or direction. MW: to turn aside : deviate.	[transitive verb] To turn aside (a thing, as a stream, etc.) from its (proper) direction or course; to deflect (the course of something); to turn from one destination or object to another.	
dodder	Self-c / Transl		Manner	1		Unsteady Motion	[intransitive verb] TFD: to shake or tremble, as from old age; totter. To progress in a feeble, unsteady manner. MW: to tremble or shake from weakness or age. to progress feebly and unsteadily.	[intransitive verb] To tremble or shake from frailty. To proceed or move unsteadily or with tottering gait; to totter; to potter.	*mp-walk*
dodge1	Self-c		Manner	1		Posture (to one side)	[intransitive and transitive verb] to avoid being hit by something by moving quickly to one side. TFD: [intransitive verb] To move aside or in a given direction by shifting or twisting suddenly. MW: an act of evading by sudden bodily movement.	[intransitive verb] To avoid an encounter with (a person or thing) by changes of position, shifts, or doublings; to elude (a pursuer, etc.) by shifts or sideward movements.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
dodge2	Transl		Path	1	away from		[intransitive and transitive verb] to avoid being hit by something by moving quickly to one side. TFD: [intransitive verb] To move aside or in a given direction by shifting or twisting suddenly. MW: an act of evading by sudden bodily movement.	[intransitive verb] To avoid an encounter with (a person or thing) by changes of position, shifts, or doublings; to elude (a pursuer, etc.) by shifts or sideward movements.	
dogsled	Transl	NO	Manner	1		Vehicle / Instrument	AS NOUN: a sledge pulled by dogs. TFD: [intransitive verb] travel with a dogsled, to ride (on) a dogsled. MW: NO FOUND AS MOTION VERB.	AS NOUN: dog-sled, -sledge, a sledge drawn by dogs, as in the Arctic regions.	
dribble	Transl		Manner	1		Motion in sports	[intransitive or transitive verb] (in football or hockey) to move a ball along the ground with repeated small kicks or hits, or (in basketball) to move a ball by repeatedly hitting it against the floor with your hand. TFD: [intransitive verb] To dribble a ball or puck. [transitive verb] To move (a ball or puck) by repeated light bounces or kicks, as in basketball or soccer. MW: to dribble a ball or puck.	[transitive verb] In Assoc. Football, etc. To keep (the ball) moving along the ground in front of and close to one by a rapid succession of short pushes, instead of sending it as far as possible by a vigorous kick.	*mp-walk / mp-run*
drift	Transl	AM	CAUSE	1			[intransitive verb] to move slowly, especially as a result of outside forces, with no control over direction. TFD: [intransitive verb] To be carried along by currents of air or water. [transitive verb] To cause to be carried in a current. MW: to become driven or carried along (as by a current of water, wind, or air). to cause to be driven in a current. to move or float smoothly and effortlessly.	[intransitive verb] To move as driven or borne along by a current; to float or move along with the stream or wind. [transitive verb] To drive or carry along, as by a current of water or air.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
drive	Transl	AM	Manner	1		Vehicle / Instrument	[intransitive and transitive verb] to move or travel on land in a motor vehicle, especially as the person controlling the vehicle's movement. TFD: [intransitive verb] To operate a vehicle, such as a car.To go or be transported in a vehicle. [transitive verb] To convey or transport in a vehicle. MW: To operate a vehicle. to have oneself carried in a vehicle. to convey in a vehicle.	[intransitive and transitive verb] To guide a vehicle or the animal that draws it, to act as driver; also, to travel or be conveyed in a carriage under one's own direction or at one's disposal. Also [intransitive verb] (for pass.), of the vehicle. [transitive verb] To carry or convey in a vehicle.	
drop	Transl	AM	Path	1	Earth-based orientation: downwards		[intransitive and transitive verb] to fall or to allow something to fall. TFD: To fall from a higher to a lower place or position. To let fall by releasing hold of. MW: to fall unexpectedly or suddenly. To let fall : cause to fall.	[intransitive verb] To fall vertically, like a single drop, under the simple influence of gravity; to descend. To have an abrupt descent in position. [transitive verb] To let fall	
edge	Transl	AM	Manner	1		Gradual stages	[intransitive and transitive verb] to move slowly with gradual movements or in gradual stages, or to make someone or something move in this way. TFD: [intransitive verb] To move gradually or hesitantly. MW: to advance by short moves. LLA: To walk slowly and carefully, especially sideways, along or through a small space because you do not have enough room to walk normally.	[intransitive verb] To move edgeways; to advance (esp. obliquely) by repeated almost imperceptible movements.	*mp-walk*
embark	Transl	AM	Path + Ground (ship)	2	up/onto G		[intransitive verb] to go onto a ship. TFD: [transitive verb] To cause to board a vessel or aircraft. [intransitive verb] To go aboard a vessel or aircraft, as at the start of a journey. MW: to go on board a vehicle for transportation. to cause to go on board (as a boat or airplane).	[intransitive verb] To go on board ship; to take ship. [transitive] To put on board ship, make to go on board. Of the ship: To receive on board.	

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English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
emigrate	Transl		Path + Ground (country)	2	away from G (departure, source)		[intransitive verb] to leave a country permanently and go to live in another one. TFD: To leave one country or region to settle in another. MW: to leave one's place of residence or country to live elsewhere.	[intransitive verb] To remove out of a country for the purpose of settling in another. [transitive verb] To cause or assist to emigrate; to send out to settle in a foreign country.	
enter	Transl		Path	1	into G		Middle English entren, from Anglo-French entrer, from Latin intrare, from intra within. [intransitive verb] to come or go into a particular place. TFD: [intransitive and transitive verb]To come or go in; make an entry. MW: to go or come in.	[intransitive verb] To go or come in.To go or come into a place, building, room, etc.; to pass within the boundaries of a country, region, portion of space, medium, etc.	
escape	Transl		Path	1	away from G (departure, source)		from Anglo-French escaper, eschaper, from Vulgar Latin *excappare, from Latin ex- + Late Latin cappa head covering, cloak. [intransitive and transitive verb] to get free from something, or to avoid something. TFD:To break loose from confinement; get free MW: to get away (as by flight).	[intransitive verb] To gain one's liberty by flight; to get free from detention or control, or from an oppressive or irksome condition. [transitive verb] To effect one's flight from (prison); to free oneself from (a person's grasp or control); to get safely out of (painful or dangerous conditions).	
escort	Transl		Figure + CO-MOTION	2			[transitive verb] to go with someone or a vehicle especially to make certain that they arrive safely or that they leave a place. TFD, MW: To accompany as an escort.	[transitive verb] To act as escort to. a. Mil. of armed men; Naut. of a convoy. b. In wider sense: To accompany for the purpose of protecting or conducting, or of showing civility.	
exit	Transl		Path	1	out of G		Latin, he goes out, from exire to go out, from ex- + ire to go. [intransitive and transitive verb] TFD: To go out of; leave. MW: To go out or away.	[intransitive verb] To make one's exit, depart, disappear	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
fall	Transl		Path	1	Earth-based orientation: downwards		from Old English feallan [intransitive verb] to come down onto the ground or from a high position to a lower position. TFD:To drop or come down freely under the influence of gravity. MW: to descend freely by the force of gravity.	[intransitive verb] To descend freely (primarily by 'weight' or gravity): opposed to 'rise'. To drop from a high or relatively high position. To drop, come or go down, in a given direction or to a required position.	
ferry	Transl	AM	Manner			Vehicle / Instrument	AS NOUN: a boat or ship for taking passengers and often vehicles across an area of water, especially as a regular service. [transitive verb] to transport people or goods in a vehicle, especially regularly and often. TFD: [intransitive verb] To cross a body of water on or as if on a ferry. [transitive verb] To cross a body of water on or as if on a ferry. MW: [transitive verb] to carry by boat over a body of water. to cross by a ferry. to convey (as by aircraft or motor vehicle) from one place to another.	[transitive verb] To carry, convey, transport, take from one place to another. esp. To transport or convey over water (now only over a stream, canal, etc., formerly also over the sea) in a boat or ship, etc. Often to ferry (a person, etc.) over or across. [intransitive verb] To convey oneself, go; now only, to pass over water in a boat or by a ferry. Of a boat: To pass to and fro.	
file	Transl		Manner	1		Motion in file; mp-walk?	[intransitive verb] to walk in a line, one behind another. TFD: To march or walk in a line. MW: to march or proceed in single file.	[intransitive verb] To march or move in file.	*mp-walk*
flap	Self-c	AM	Manner	1		Shake, Swing, Vibrate	[intransitive and transitive verb] to wave something, especially wings when or as if flying. TFD: [intransitive verb] To move or sway while fixed at one edge or corner; flutter. [transitive verb] To cause to move or sway with a fluttering or waving motion. MW: To beat or pulsate wings or something suggesting wings. To progress by flapping. To flutter ineffectively.	[transitive verb] Of a bird: To strike with the flat of the wing; also to drive off (etc.) by flapping. [intransitive verb] Of anything attached at one extremity or loosely fastened: To swing or sway about loosely; to flutter or oscillate as when moved by the wind.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
flee	Transl		CAUSE + Path + Manner	3	away from G (departure, source)	mp-run	[intransitive and transitive verb] to escape by running away, especially because of danger or fear. TFD:To run away, as from trouble or danger. MW: to run away often from danger or evil.	[intransitive verb] To run away from or as from danger; to take flight; to try to escape or seek safety by flight.	*mp-run*
flick	Self-c	AM	Manner	1		Shake, Swing, Vibrate (short, sudden movement)	[intransitive and transitive verb] to move or hit something with a short sudden movement. TFD: To twitch or flutter. MW: to go or pass quickly or abruptly. to move or propel with or as if with a flick.	[intransitive verb] To move with quick vibrations. Of a bird: To flutter; in quot. with out. Of a wound: To palpitate, throb. [transitive verb] To remove (something) with a smart stroke of something flexible.	
flip	Self-c	AM	Manner	1		Upside Down	[intransitive and transitive verb] If you flip something, you turn it over quickly one or more times, and if something flips, it turns over quickly. TFD: To turn over. To turn over or around, especially with a light quick motion. MW: to change from one position to another and especially turn over. To cause to turn and especially to turn over.	[intransitive verb] To make a flip or fillip with the fingers. Also quasi-transitive verb, To give a flip with (the finger). [transitive verb] To move or throw about with a flip or sudden jerk. [transitive verb] To put into motion with a flip or fillip, to 'shoot'; to toss (a coin) with a flip.	
flit	Transl		Manner	1		Rate-fast; Light motion	[intransitive verb] to fly or move quickly and lightly. TFD: To move about rapidly and nimbly. MW: to move in an erratic fluttering manner.	[intransitive verb] To move along, pass, proceed; to pass lightly or softly and (usually) with rapidity or suddenness. Of a bird or other winged creature: To fly lightly and swiftly; also, to make short and swift flights, to flutter.	

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English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
float	Self-c / Transl	AM	Manner	1		Smooth Motion	[intransitive verb] to stay on the surface of a liquid and not sink. [intransitive and transitive verb] to (cause to) move easily through, or along the surface of a liquid, or to (cause to) move easily through air. TFD: To remain suspended within or on the surface of a fluid without sinking.To be suspended in or move through space as if supported by a liquid. To cause to remain suspended without sinking or falling. MW: to rest on the surface of or be suspended in a fluid. to drift on or through or as if on or through a fluid. to cause to float in or on the surface of a fluid.	[intransitive verb] To rest on the surface of any liquid; to be buoyed up; to be or become buoyant. To move quietly and gently on the surface of a liquid, participating in its motion. To move freely and gently in or through the air, as if buoyed up or carried along by it.	
flounder	Self-c		Manner	1		Unsteady Motion; Ackward Motion	[transitive verb] TFD: To make clumsy attempts to move or regain one's balance. MW: [intransitive verb] to struggle to move or obtain footing. CAE: to move awkwardly.	[intransitive verb] In early use, to stumble. Subsequently, to struggle violently and clumsily; to plunge, roll and tumble about in or as in mire.	*Low ratings. NO significant difference*
flutter	Self-c	AM	Manner	1		Shake, Swing, Vibrate	[intransitive and transitive verb] to make a series of quick delicate movements up and down or from side to side, or to cause something to do this. TFD: To wave or flap rapidly in an irregular manner. To vibrate or beat rapidly or erratically. To cause to flutter. MW: to flap the wings rapidly. to move with quick wavering or flapping motions. To cause to flutter.	[intransitive verb] Of birds, etc.: To move or flap the wings rapidly without flying or with short flights; to move up and down or to and fro in quick irregular motions, or hang upon wing in the air. To move with a light quivering motion through the air. [intransitive verb] To move about or to and fro with quick vibrations or undulations; to quiver. [transitive verb] (causatively) To cause to flutter; to move (a thing) in quick irregular motions; to agitate, ruffle.	

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English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
fly	Transl		Ground (air)	1			[intransitive verb] When a bird, insect or aircraft flies, it moves through the air. [intransitive and transitive verb] to travel by aircraft, or to go somewhere or cross something in an aircraft. TFD: To move through the air by means of wings or winglike parts. To travel by air. MW: to move in or pass through the air with wings b: to move through the air or before the wind or through outer space.	[intransitive verb] To move through the air with wings. [intransitive and transitive verb] To travel by aircraft. Also [transitive verb], to cover, traverse, or perform by aircraft (also said of the machine).	
follow	Transl		Path	1	after G		[intransitive and transitive verb] to move behind someone or something and go where they go. TFD: To come or go after; proceed behind. MW: to go, proceed, or come after.	[transitive verb] To go or come after (a person or other object in motion); to move behind in the same direction. To go forward along (a path), to keep in (a track) as one goes. [intransitive verb] To go or come after a person or thing in motion; to move behind some object; also, to go as a person's attendant or companion.	
ford	Transl		Path + Ground (river) + Manner	3	pass/cross G	mp-walk; Obstructed motion?	[transitive verb] to cross a river, where it is not deep, on foot or in a vehicle. TFD: cross a river where it's shallow. MW: to cross (a body of water) by wading (=to step in or through a medium (as water) offering more resistance than air).	[transitive verb] To cross (water) by means of a ford; to wade through (To walk through water or any liquid or soft substance which impedes motion).	
foxtrot	Self-c		Manner	1		Dance	AS NOUN: (a piece of music for) a type of formal ballroom dance that combines short quick steps with longer ones in various patterns. [intransitive verb] TFD: To dance the fox trot. MW: to dance the fox-trot.	v. [intransitive verb], to dance a fox-trot	
frisk	Transl		Manner	1		Playful Motion	[intransitive verb] TFD: To move about briskly and playfully; frolic. MW: to leap, skip, or dance in a lively or playful way.	[intransitive verb] Of living beings: To move briskly and sportively; to dance, frolic, gambol, jig.	*Low ratings. NO significant difference*

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
frolic	Transl		Manner	1		Playful Motion	[intransitive verb] to behave in a happy and playful way. TFD: To behave playfully and uninhibitedly; romp. MW: to play and run about happily : romp.	[intransitive verb] To make merry; in later use, to play pranks, gambol, caper about.	*Low ratings. NO significant difference*
gallop1	Transl	AM	Manner	1		mp-run; Rate-fast	[intransitive and transitive verb](of a horse) to run fast so that all four feet come off the ground together in each act of forward movement. TFD: To move or progress swiftly. To cause to gallop. MW: to run fast. to cause to gallop.	[intransitive verb] Of a horse (occas. of other quadrupeds): to go at a gallop. [transitive verb] To make (a horse, etc.) go at full speed.	*mp-run*
gallop2	Transl		Manner	1		Vehicle / Instrument (on a horse); Rate-fast	[intransitive and transitive verb] (of a person) to ride a horse that is running in this way. TFD: To ride a horse at a gallop. MW: to progress or ride at a gallop.	[intransitive verb] Of a horseman: To ride at full speed.	*mp-run*
gambol	Transl		Manner	1		Playful Motion	[intransitive verb] to run and jump in a happy and playful way. TFD: To leap about playfully; frolic. MW: to skip about in play.	[intransitive verb] To leap or spring, in dancing or sporting; Now chiefly of animals or children.	*Low ratings. NO significant difference*
gimp *[limp, hobble]*	Transl		Manner	1		mp-walk; State of the Figure (injured) → Unsteady Motion; Forced Motion (Energy-low)	[intransitive verb] TFD: to walk with a limp. MW: [intransitive verb] limp, hobble. MW: limp, hobble.	NO found as motion verb	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
glide1	Transl	AM	Manner	1		Contact [between F and G]; Smooth Motion	[intransitive verb] to move easily without stopping and without effort or noise. TFD: To move in a smooth, effortless manner. To move silently and furtively. [transitive verb] To cause to move or pass smoothly, silently, or imperceptibly. MW: to move smoothly, continuously, and effortlessly. to cause to glide.	[intransitive verb] To pass from one place to another by a smooth and continuous movement, without effort or difficulty. Along the surface of, or through, a liquid. in general. Now often applied to the progression of a person walking or riding, of a carriage, etc., to express extreme smoothness of movement and the absence of perceptible motion of the limbs, wheels, etc. Said of the mode of progression of reptiles. [transitive verb] to cause to glide (in different senses).	
glide2	Transl	AM	Manner	1		Furtive Motion	TFD: [intransitive verb] To move silently and furtively. [transitive verb] To cause to move or pass smoothly, silently, or imperceptibly. MW: to go or pass imperceptibly.	[intransitive verb] To go unperceived, quietly, or stealthily; to insinuate oneself, steal, 'slip' into, out of a place.	
go	Transl		Path	1	Deixis: away from G (speaker)		[intransitive verb] to travel or move to another place. TFD: To move or travel; proceed. To move away from a place; depart. MW: o move on a course. to move out of or away from a place expressed or implied.	An intransitive verb of motion, serving as the most general expression (I) for a movement viewed without regard to its point of departure or destination; (II) for a movement away from the speaker, or from the point at which he mentally places himself; and (III) for a movement to or towards a place which is neither in fact nor in thought that occupied by the speaker.	
gondola - gondole [verb]	Transl	NO	Manner			Vehicle / Instrument	AS NOUN: a narrow boat with a raised point at both ends, which is used on canals in Venice and is moved by a man with a pole. TFD, MW: NO FOUND AS MOTION VERB	[intransitive verb] To travel in a gondola. [transitive verb] to propel (a gondola).	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
goosestep	Transl		Manner	1		mp-walk; Characteristic use of lower body (Steps-regular; Legs-lifted high)	[intransitive verb] a special way of marching with the legs lifted high and straight. TFD: NO FOUND AS MOTION VERB. MW: to march in a goose step.	AS NOUN: An elementary drill in which the recruit is taught to balance his body on either leg alternately, and swing the other backwards and forwards. b. A balance step, practised esp. by various armies in marching on ceremonial parades, in which the legs are alternately advanced without bending the knees. [jntransitive verb] to practise this drill	*mp-walk*
grovel	Transl		Manner	1		Contact [between F and G]: Body close to ground: State fo Figure (humiliated)	[intransitive verb] to move close to or on the ground. TFD: To lie or creep in a prostrate position, as in subservience or humility. MW: to creep with the face to the ground. to lie or creep with the body prostrate in token of subservience or abasement.	[intransitive verb] to move with the body prostrate upon the ground. To grovel in the dust or dirt (fig.): to humble oneself, perform an act of humiliation.	
guide	Transl		Figure + CO-MOTION	2			[transitive verb] to show people round a place. TFD: To serve as a guide for; conduct.MW: to act as a guide to : direct in a way or course.	[transitive verb] To act as guide to; to go with or before for the purpose of leading the way	
hare	Transl		Manner	1		Rate-fast; mp-run; Uncontrolled Motion?	[intransitive verb] to run or go very quickly, usually in an uncontrolled way. TFD: To move hurriedly, as if hunting a swift quarry. MW: to go swiftly .	[intransitive verb] To run or move with great speed.	
hasten	Transl	AM	Manner	1		Rate-increase	TFD: [intransitive verb] To move or act swiftly. [transitive verb] To cause to hurry. To speed up; accelerate. MW: to move or act quickly.	[intransitive verb] To make haste; to come, go, or act quickly. [transitive verb] To cause to make haste; to urge on; to accelerate, expedite, hurry.	*mp-run / mp-walk*

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
helicopter	Transl	AM	Manner	1		Vehicle / Instrument	AS NOUN: a type of aircraft without wings, that has one or two sets of large blades which go round very fast on top. TFD: [intransitive and transitive verb] To go or transport by helicopter. MW: [intransitive verb] to travel by helicopter. [transitive verb] to transport by helicopter.	[intransitive and transitive verb] to fly with or as with a helicopter; to transport by helicopter	
hike	Transl		Manner	1		mp-walk; Leisurely Motion	[intransitive verb] to go for a long walk in the countryside. LLA: To take a long walk in the countryside. TFD: To go on an extended walk for pleasure or exercise. MW: to go on a hike.	[intransitive verb] To walk or march vigorously or laboriously. To walk for pleasure; to go for a long walk, or walking tour, spec. in the country.	*mp-walk*
hobble	Transl		Manner	1		mp-walk; State of Figure (injured) → Unsteady Motion; Forced Motion (Energy-low)	[intransitive verb] to walk in an awkward way, usually because the feet or legs are injured. LLA: To walk with difficulty in a slow and unsteady way because it is painful for you to walk. TFD: o walk or move along haltingly or with difficulty; limp. MW: to move along unsteadily or with difficulty; especially : to limp along.	[intransitive verb]To walk with an unsteady rising and falling gait, as one whose limbs give way under him; to walk lamely and with difficulty; to limp.	*mp-walk*

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
hop	Self-c / Transl ?		Manner	1		mp-jump; Characteristic use of lower body	[intransitive verb] to jump on one foot or to move about in this way. If a small animal, bird or insect hops, it moves by jumping on all or two of its feet at the same time. LLA: To jump or move forward on one leg rather than two. TFD: To move with light bounding skips or leaps. MW: to move by a quick springy leap or in a series of leaps; also : to move as if by hopping.	[intransitive verb] Of a person: To spring or leap on one foot, or move onwards by a succession of such leaps. To spring a short way upon the ground or any surface with an elastic or bounding movement, or a succession of such movements: said of persons, animals, and things. Formerly a general synonym of leap; now implying a short or undignified leap. Of animals: To move by leaps with both or all the feet at once, as opposed to walking or running: said esp. of small birds, frogs, grass-hoppers, sand-hoppers, fleas, and the like.	*mp-jump*
hound	Transl		Path	1	after G		[transitive verb] to chase someone or refuse to leave them alone, especially because you want to get something from them. TFD: To pursue relentlessly and tenaciously. MW: to pursue with or as if with hounds.	[transitive verb] To hunt, chase, or pursue with hounds, or as a dog does.	*mp-run*
hover	Self-c		Ground (on air)	1			[intransitive verb] to stay in one place in the air, usually by moving the wings quickly. TFD: To remain floating, suspended, or fluttering in the air. MW: to hang fluttering in the air or on the wing.	[intransitive motion] Of a winged creature: To hang or remain suspended in the air over or about a particular spot, as by flapping the wings (to which action the word is sometimes restricted by naturalists: cf. 4), esp. when preparing to dart or swoop in some direction. Of a helicopter or other aircraft: to remain stationary in the air, relative to the ground.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
hurl	Transl	AM	Manner	1		Rate-fast; Forced Motion (Energy-high)	[intransitive verb] to move very fast, especially in what seems a dangerous way. TFD: [intransitive verb] To move with great speed, force, or violence; hurtle. [transitive verb] to throw something with a lot of force, usually in an angry or violent way. MW: rush, hurtle. to throw down with violence.	[intransitive verb] To move, or be carried or driven with violence or impetuosity; to rush impetuously; to dash. [transitive verb] To drive or impel with impetuous force or violence.	
hurry	Transl	AM	Manner	1		Rate-increase	[intransitive and transitive verb] to move or do things more quickly than normal or to make someone do this. TFD: To move or act with speed or haste.To cause to move or act with speed or haste. MW: to move or act with haste. To carry or cause to go with haste.	[intransitive verb] To move or act with excited haste, or with an evident or apparent effort at speed. [transitive verb] To carry, convey, or cause to go with excessive haste, under the influence of external pressure or of excitement.	*mp-run / mp-walk*
hurtle	Transl	AM	Manner	1		Rate-fast; Forced Motion (Energy-high)	[intransitive verb] to move very fast, especially in what seems a dangerous way. TFD: [intransitive verb] To move with or as if with great speed and a rushing noise. [transitive verb] To fling with great force; hurl. MW: to move rapidly or forcefully. [transitive verb] hurl, fling.	[intransitive verb] To strike together or against something, esp. with violence or noise; to come into collision; to dash, clash, impinge; to meet in shock and encounter. To dash, rush, hurry; esp. with noise. [transitive verb] To drive violently or swiftly; to dash, dart, shoot, fling, cast. App. often confounded with hurl.	*mp-run*
immigrate	Transl	AM	Path + Ground (country)	2	into G		[intransitive verb] TFD: To enter and settle in a country or region to which one is not native. [transitive verb] To send or introduce as immigrants. MW: To enter and settle in a country or region to which one is not native. [transitive verb] to bring in or send as immigrants	[intransitive verb] To come to settle in a country (which is not one's own); to pass into a new habitat or place of residence . [transitive verb] trans. To bring in or introduce as settlers.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
inch	Transl	AM	Manner	1		Gradual stages	[intransitive and transitive verb] to move very slowly or in a lot of short stages. TFD: To move or cause to move slowly or by small degrees. MW: to move by small degrees: progress slowly . [transitive verb] to cause to move slowly.	[intransitive verb] To move, advance, or retreat, by inches or small degrees. [transitive verb] To drive by inches or small degrees.	*mp-walk*
jeep	Transl	NO	Manner	1		Vehicle / Instrument	AS NOUN: a small strong vehicle used for travelling over rough ground, especially by the army. TFD: NO FOUND AS MOTION VERB. MW: [intransitive verb] to travel by jeep.	[intransitive verb] To travel by jeep.	
jet	Transl	AM?	Manner	1		Vehicle / Instrument	AS NOUN: an aircraft with a jet engine, which is able to fly very fast. [intransitive verb] to travel somewhere by plane. TFD: [intransitive verb] fly a jet plane. MW: [intransitive verb] to travel by jet airplane.	[intransitive verb] To travel by jet plane. [transitive verb] to convey by jet plane or jet engine.	
jig1	Self-c		Manner	1		Dance	AS NOUN: an energetic traditional dance of Great Britain and Ireland, or the music that is played for such a dance. TFD: To dance or play a jig. MW: to dance a jig.	[transitive verb] To dance (a jig or other lively dance). [intransitive verb] To dance a jig; to dance in a rapid, jerky, lively fashion.	
jig2	Self-c	AM	Manner	1		Shake, Swing, Vibrate	[intransitive and transitive verb] to move quickly up and down or from side to side, or to make someone or something do this. TFD: To move or bob up and down jerkily and rapidly. MW: to move with rapid jerky motions.	[intransitive verb] To move up and down or to and fro with a rapid jerky motion. [transitive verb] To move (any thing) with a light jerky motion; to jerk to and fro or up and down.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
jitterbug	Self-c		Manner	1		Dance	AS NOUN: TFD: A strenuous dance performed to quick-tempo swing or jazz music and consisting of various two-step patterns embellished with twirls and sometimes acrobatic maneuvers. [intransitive verb] to perform this dance. MW: to dance the jitterbug.	[intransitive verb] To dance the jitterbug.	
jive	Self-c		Manner	1		Dance	AS NOUN: a fast dance which was very popular with young people in the 1940s and 1950s. [intransitive verb] dance to jive music. TFD:To play or dance to jive music. MW: to dance to or play jive.	[intransitive verb] To dance the 'jive'	
jog	Transl		Manner	1		mp-run; Rate-slow, regular	[intransitive verb] to run at a slow regular speed, especially as a form of exercise. LLA: To run fairly slowly for a long distance, for exercise, and to keep healthy. TFD: To run or ride at a steady slow trot. Sports To run in such a way for sport or exercise. MW: to run or ride at a slow trot.	[intransitive verb] To walk or ride with a jolting pace, 'to move with small shocks like those of a low trot' (J.); to move on at a heavy or laboured pace, to trudge; hence, to move on, go on, be off. More recently, to run at a gentle pace (esp. as part of a 'keep-fit' schedule).	*mp-run*
journey	Transl		Manner	1		Vehicle / Instrument	[intransitive verb] to travel somewhere. TFD, MW: [intransitive and transitive verb] To make a journey; travel. To travel over or through.	[intransitive verb] To make or proceed on a journey; to travel.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
jump	Self-c / Transl ?		Manner	1		mp-jump	[intransitive verb] to push yourself suddenly off the ground and into the air using your legs. [intransitive and transitive verb] to push yourself suddenly off the ground in order to go over something. LLA: To push yourself off the ground or away from something, using your legs.To go over something by jumping. TFD: [intransitive verb] To spring off the ground or other base by a muscular effort of the legs and feet. To move suddenly and in one motion. [transitive verb] To leap over or across. MW: to spring into the air : leap; especially: to spring free from the ground or other base by the muscular action of feet and legs. To move suddenly or involuntarily. [transitive verb] to leap over.	[intransitive verb] To make a spring from the ground or other base by flexion and sudden muscular extension of the legs (or, in the case of some animals, as fish, of the tail, or other part); to throw oneself upward, forward, backward, or downward, from the ground or point of support; to leap, spring, bound; spec. to leap with the feet together, as opposed to hopping on one leg. To move suddenly with a leap, bound, or the like movement; to 'spring', 'dart', 'shoot'. [transitive verb] To pass clear over by a leap; to leap or spring over; to clear.	
kayak	Transl	NO	Manner	1		Vehicle / Instrument	AS NOUN: a light narrow canoe with a covering over the top. TFD: [intransitive verb] To go, travel, or race in a kayak. [transitive verb] To go or travel on (a body of water) by kayak. MW: [intransitive verb]	[intransitive verb] to travel by kayak	
keel	Self-c	AM	Manner	1		Upside Down	[intransitive verb] (a person) to fall over suddenly. If a boat keels over, it turns upside down in the water. TFD: [intransitive and transitive verb] To capsize or cause to capsize. MW: [intransitive verb] to fall in or as if in a faint —usually used with over.	[intransitive verb] To turn or be turned over; to be upset; to fall over or be felled as if by a shock. [transitive verb] To turn up the keel of, show the bottom of. to keel over, to turn over, 'turn wrong side uppermost', turn (a man or beast) upon his back; to upset, capsize.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
kick	Self-c		Figure (body part: feet, legs)	1			[intransitive and transitive verb] to hit someone or something with the foot, or to move the feet and legs suddenly and violently. TFD: To strike out with the foot or feet.To strike with the foot. MW: to strike out with the foot or feet. to strike, thrust, or hit with the foot.	[intransitive verb] To strike out with the foot. [transitive verb] To strike (anything) with the foot.	
kneel	Self-c		Manner	1		Posture (vertical-downwards)	[intransitive verb] to go down into, or stay in, a position where one or both knees are on the ground. TFD: To go down or rest on one or both knees. MW: to bend the knee : fall or rest on the knees.	[intransitive verb] To fall on the knees or a knee; to assume, or remain in, a posture in which the body is supported on the bended knees or on one of them, as in supplication or homage.	
land	Transl	AM	Path + Ground (land)	2	down onto G (arrival, endpoint)		[intransitive and transitive verb] to (cause to) arrive at a place after moving down through the air. TFD: To come to shore.To disembark. To descend toward and settle onto the ground or another surface. [transitive verb] To bring to and unload on land. MW: to go ashore from a ship. to come to the end of a course or to a stage in a journey. to alight on a surface. [transitive verb] to set or put on shore from a ship.	[intransitive verb] To come to land; to go ashore from a ship or boat; to disembark. To arrive at a place, a stage in a journey, or the like; to come to a stage in a progression; to end in something. To alight upon the ground, e.g. from a vehicle, after a leap, etc. Esp. of an aircraft or spacecraft, or a person in one: to alight upon or reach the ground, or some other surface, after a flight. [transitive verb] To bring to land; to set on shore; to disembark. To bring into a specified place, e.g. as a stage in or termination of a journey; to bring into a certain position. To bring (an aircraft) to earth from the air; to place (an aircraft or spacecraft, or its contents) on the ground or some other surface after a flight.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
lead	Transl		Figure + CO-MOTION	1			[intransitive verb] to show the way to a group of people, animals, vehicles, etc. by going in front of them. TFD: To show the way to by going in advance. MW: to guide on a way especially by going in advance. to guide someone or something along a way.	[transitive verb] To conduct. To cause to go along with oneself.	
lean	Self-c	AM	Manner	1		Posture (towards horizontal; Bend)	[intransitive and transitive verb] to (cause to) slope in one direction, or to move the top part of the body in a particular direction. TFD: To bend or slant away from the vertical.To incline the weight of the body so as to be supported. To cause to incline. MW: to incline, deviate, or bend from a vertical position b: to cast one's weight to one side for support. to cause to lean.	[intransitive verb] To recline, lie down, rest. [transitive verb] To cause to bend or incline.	
leap	Self-c / Transl ?		Manner	1		mp-jump; Characteristic use of lower body (Long or high jump)	[intransitive verb] to make a large jump or sudden movement, usually from one place to another. LLA: To jump as far or high as you can. To go over something with a long or high jump. [intransitive and transitive verb] TFD: To spring or bound upward from or as if from the ground; jump. To jump over. MW: to spring free from or as if from the ground. to pass over by leaping.	[intransitive verb] To rise with both (or all four) feet suddenly from the ground or other standing-place, alighting in some other position; to jump, spring. To spring suddenly to or upon one's feet; to rise with a bound from a sitting or recumbent position. [transitive verb] To spring over; to pass from one side to the other by leaping.	*mp-jump*

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
leap-frog	Transl		Manner	1		Animal-like → mp-jump	AS NOUN: a children's game in which a number of children bend down and another child jumps over them one at a time. TFD: [transitive verb] To jump over in or as if in leapfrog. [intransitive verb] To move forward or progress in or as if in leapfrog. MW: to leap or progress in or as if in leapfrog.	[intransitive verb and transitive verb] To leap or vault as at leap-frog.	
leave	Transl		Path	1	away from G (departure, source)		Middle English leven, from Old English lǣfan; akin to Old High German verleiben to leave, Old English belīfan to be left over. [intransitive and transitive verb] to go away from someone or something, for a short time or permanently. TFD:To go out of or away from. MW: to go away from.	[transitive verb] To depart from, quit, relinquish. To go away from, quit (a place, person, or thing); to deviate from (a line of road, etc.).	
limp	Transl		Manner	1		mp-walk; State of Figure (injured) → Unsteady Motion; Forced Motion (Energy-low)	[intransitive verb] to walk unevenly and slowly because of having an injured or painful leg or foot. LLA: To walk with difficulty because you have hurt one of your legs. TFD: To walk lamely, especially with irregularity, as if favoring one leg. MW: to walk lamely; especially : to walk favoring one leg. To go unsteadily. to proceed slowly or with difficulty.	[intransitive verb] To walk lamely, to halt.	*mp-walk*
lope	Transl		Manner	1		mp-run; Rate-slow; Characteristic use of lower body (Steps-long)?	[intransitive verb] (of a person or animal) to run taking long relaxed steps. TFD: To run or ride with a steady, easy gait. MW: to move or ride at a lope.	[intransitive verb] To leap, jump, spring. To run with a long, bounding stride.	*mp-walk*

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
lumber	Transl		Manner	1		Rate-slow; Awkward Motion	[intransitive verb] to move slowly and awkwardly. TFD: move heavily or clumsily. MW: to move ponderously (=clumsily).	[intransitive verb] To move in a clumsy or blundering manner.	*mp-walk*
lunge	Transl	AM	Path + Manner	2	to/towards G	Forced Motion (Energy-high)	[intransitive verb] to move forward suddenly and with force, especially in order to attack someone. [intransitive and transitive verb] TFD: To move with a sudden thrust.To cause (someone) to lunge. MW: to make a lunge : move with or as if with a lunge. to thrust or propel (as a blow) in a lunge.	[intransitive verb] To move with a lunge; to make a sudden forward movement; to rush. [transitive verb] To drive or thrust with or as with a lunge.	
lurch	Self-c		Manner	1		Unsteady Motion; Jerky, Sudden movement	[intransitive verb] to move in an irregular way, especially making sudden movements backwards or forwards or from side to side. LLA: To walk very unsteadily, moving forward or from side to side with sudden, irregular movements. TFD: To stagger. MW: to move with a lurch (=an abrupt jerking, swaying, or tipping movement)	[intransitive verb] To move suddenly, unsteadily, and without purpose in any direction, as, e.g. a person staggering.	*mp-walk*

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
march1	Transl	AM	Manner	1		mp-walk; Characteristic use of lower body (Steps-regular)	[intransitive and transitive verb] to walk with regular steps keeping the body stiff, usually in a formal group of people who are all walking in the same way. LLA: If soldiers march, they all walk together with regular steps. TFD: [intransitive verb] To walk steadily and rhythmically forward in step with others. To participate in an organized walk, as for a public cause. [transitive verb] To cause to move or otherwise progress in a steady rhythmical manner. MW: [intransitive verb] to move along steadily usually with a rhythmic stride and in step with others. [transitive verb] to cause to march.	[intransitive verb] To walk in a military manner with regular and measured tread. Of a body of men or troops: to walk in step and in time with a regular and uniform movement. [transitive verb] To cause (a person, army) to march or move in military order.	*mp-walk*
march2	Transl		Manner	1		mp-walk; State of Figure (angry, determined)?	[intransitive verb] to walk somewhere quickly and in a determined way, often because you are angry. LLA: To walk quickly and with firm steps, especially because you feel angry or determined. TFD: To proceed directly and purposefully. MW: to move in a direct purposeful manner.	[intransitive verb] To walk in a steady, measured, or deliberate manner; to go, proceed.	*mp-walk*
meander1	Transl		Manner	1		Path-shape	[intransitive verb] If a river, stream or road meanders, it follows a route which is not straight or direct. To walk slowly without any clear direction. TFD: To follow a winding and turning course. MW: to follow a winding or intricate course.	[intransitive verb] Of a river, stream, etc.: to flow in meanders; to follow a winding course.	*mp-walk*
meander2	Transl		Manner	1		mp-walk; No aim in motion	[intransitive verb] To walk slowly without any clear direction. TFD: To move aimlessly and idly without fixed direction. MW: to wander aimlessly or casually without urgent destination.	[intransitive verb] Of a person: to wander aimlessly; to follow a circuitous course.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
mince	Transl		Manner	1		mp-walk; Characteristic use of lower body (Steps-short)	[intransitive verb] to walk in an artificial way, with small delicate steps. TFD: To walk with very short steps or with exaggerated primness. MW: to walk with short steps in a prim affected manner.	[intransitive verb] To walk with short steps and an affected preciseness or daintiness; to walk or move in an affected or effeminate manner.	*mp-walk*
moonwalk1	Transl		Manner + Ground	2		mp-walk	AS NOUN: a kind of dance step in which the dancer seems to be sliding on the spot. TFD: [intransitive verb] To walk on the surface of the moon. MW: NO FOUND	[intransitive verb] To walk on the moon. rare.	
moonwalk2	Self-c		Manner	1		Dance	TFD: NO FOUND. MW: [intransitive verb] to dance by gliding backwards while appearing to make forward walking motions.	[intransitive verb] To perform the moonwalk. [transitive verb] To make (one's way) as if doing the moonwalk; to convey (an object) by this means.	
moped	Transl	NO	Manner	1		Vehicle / Instrument	AS NOUN: a small motorcycle which also has pedals which can be used when starting it or travelling up a hill. CALD, TFD, MW: NO FOUND AS MOTION VERB.	AS NOUN: Originally: a motorized pedal cycle. Now usually: a light two-wheeled motor vehicle with a small engine. NO FOUND AS MOTION VERB.	
mosey	Transl		Manner	1		mp-walk; Leisurely Motion; No aim in Motion	[intransitive verb] to walk or go slowly, usually without a special purpose. TFD: To move in a leisurely, relaxed way; saunter. MW: to move in a leisurely or aimless manner.	[intransitive verb] Originally: to go away quickly or promptly; to make haste (now rare). Later usually: to walk in a leisurely or aimless manner; to amble, wander.	*mp-walk*
motor	Transl	AM?	Manner	1		Vehicle / Instrument	[intransitive verb] UK OLD-FASHIONED to drive; TFD: [intransitive verb] To drive or travel in a motor vehicle. [transitive verb] To carry by motor vehicle. MW: [transitive verb] to travel by automobile. [transitive verb] to transport by automobile.	[intransitive verb] To travel or drive in a motor vehicle.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
motorbike, motorcycle	Transl	NO	Manner	1		Vehicle / Instrument	AS NOUN: US a small light motorcycle. A vehicle with two wheels and an engine. TFD: [intransitive verb] to ride a motorcycle. MW: [intransitive verb]	[intransitive verb] To ride on a motorcycle. [intransitive verb] To ride a motorcycle.	
mount	Transl		Path	1	Earth-based orientation: upwards; up / onto G		[transitive verb] to go up or onto. TFD: to climb or to ascend. MW: [intransitive and transitive verb] rise, ascend. To get up on something above the level of the ground; especially: to seat oneself (as on a horse) for riding.	**Senses relating to elevation or upward movement.** [intransitive verb] To fly upwards, to soar, to ascend. Of a missile: to rise in its flight. [intransitive verb] To travel or proceed in an upward direction; to ascend or climb. [intransitive verb] To ascend to a higher level in rank, estimation, power, excellence, completeness. [transitive verb] To cause to ascend or rise; to raise, elevate, lift, draw or drive up. **Senses relating to upward motion on to something.** [intransitive verb] To get up on to the back of a horse or other animal (occas. on a person's shoulders) for the purpose of riding. [transitive verb] To set on the back of a horse or other animal.	
move	Self-c + Transl	AM	(Motion)				[intransitive and transitive verb] to (cause to) change position. to go to a different place to live or work. TFD: [intransitive verb] To change in position from one point to another. To change posture or position. [transitive verb] To change the place or position of. To cause to go from one place to another. MW: [intransitive verb] to go or pass to another place or in a certain direction with a continuous motion. to change position or posture. [transitive verb] to change the place or position of.	To go from one place, position, state, etc., to another. [intransitive verb] Of a person, a part of the body, etc.: to change position or posture; to exhibit motion or physical activity. [transitive verb] To change the place or position of (a thing; occas. a person); to cause to change from one place, position, or situation to another; to shift, remove; to dislodge or displace (something fixed).	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
nip	Transl		Manner	1		Rate-fast	[intransitive verb] to go somewhere quickly or be somewhere for only a short time. TFD: To move quickly; dart. MW: to move briskly, nimbly, or quickly.	[intransitive verb] colloq. (chiefly Brit.). To move rapidly or nimbly; to go quickly; to make a brief excursion.	*mp-walk / mp-run*
nod	Self-c		Figure (body part: head)	1			[intransitive and transitive verb] to move your head down and then up, sometimes repeatedly, especially to show agreement, approval or greeting or to show something by doing this. TFD: To lower and raise the head quickly, as in agreement or acknowledgment. To let the head fall forward when sleepy. MW: to make a quick downward motion of the head whether deliberately (as in expressing assent or salutation) or involuntarily (as from drowsiness).	[intransitive verb] To make a brief inclination of the head, esp. in salutation, assent, or command, or to draw attention to something. [transitive verb] To incline (the head) briefly in a nod.	
oar	Transl		Manner	1		Vehicle / Instrument	[intransitive and transitive verb] TFD: To propel with or as if with oars or an oar. To move forward by or as if by rowing. MW: to propel with or as if with oars. to progress by or as if by using oars.	[intransitive verb] To row; to move or advance as if by means of oars.	
outrun	Transl		Manner + Co-Motion / Action correlation	2		mp-run; Rate-faster than	[transitive verb] to move faster or further than someone or something. TFD: To run faster than. MW: to run faster than.	[transitive verb] To outdo in running; to run faster or further than. Also: to leave behind by greater speed; to escape, elude.	
overturn	Self-c	AM	Manner	1		Upside Down	[intransitive and transitive verb] to (cause to) turn over. TFD: To turn over or capsize. To cause to turn over or capsize; upset. MW: Turn over. to cause to turn over.	[intransitive verb] To tip or topple over; to turn upside down, capsize. [transitive verb] To tip or throw over on to one side or face, esp. violently; to upset or capsize (a thing); to cause to fall over or down.	

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English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
pace	Transl		Manner	1		mp-walk; State of Figure (anxious, worried)	[intransitive and transitive verb] to walk with regular steps in one direction and then back again, usually because you are anxious or worried. LLA: To walk backwards and forwards within a small area, especially because you are nervous, bored, or angry. TFD: [transitive verb] To walk or stride back and forth across. [intransitive verb] To walk with long deliberate steps. MW: to walk with often slow or measured tread.to go at a pace —used especially of a horse.	[intransitive verb] To move with a measured or regular step; to walk or stride along steadily. Also: to move in this way as an expression of anxiety, frustration, etc.	*mp-walk*
pad	Transl		Manner	1		mp-walk; Furtive Motion ?	[intransitive verb] LLA: to walk quietly and steadily, without shoes or with soft shoes, or on a soft surface. TFD: walk heavily and firmly, as when weary, or through mud. MW: to go on foot : walk; especially : to walk with or as if with padded feet.	[intransitive verb] To journey on foot, esp. as an itinerant or a person seeking work. [transitive verb] and [intransitive verb] travel on foot; to go tramping or wandering. [intransitive verb] Of a person: to walk with soft, steady steps, esp. without shoes, etc., putting each foot down quietly in a single motion. Of an animal: to walk softly, stealthily, or calmly. Also with the feet as subject.	*mp-walk / mp-run*
paddle1	Transl		Manner + Ground (water)	2		mp-walk; Playful Motion	[intransitive and transitive verb] to walk with bare feet through shallow water, often at the edge of the sea. LLA: British, American wade, to walk in water that is not very deep, for enjoyment. MW: [intransitive verb] to move the hands or feet about in shallow water.	[intransitive verb] To wade, walk about, or play in shallow water or mud; to agitate water with one's feet; to dabble one's feet or hands in water. Also transitive verb: to dabble (a finger or toe) in water, a pond, etc.	*mp-walk*
paddle2	Transl		Manner	1		Vehicle / Instrument	TFD: [intransitive verb] To propel a watercraft with paddles or a paddle. [transitive verb] To propel (a watercraft) with paddles or a paddle. To convey in a watercraft propelled by paddles. MW: NO FOUND	[intransitive verb] Of a person in a canoe, small boat, etc.: to move forward by means of a paddle or paddles. Also with canoe, etc., as subject. To row lightly or gently with oars.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
paddle3	Transl		Manner	1		mp-walk; Unsteady Motion	TFD: NO FOUND. MW: [intransitive verb] toddle.	[intransitive verb] To walk with short, unsteady, or uncoordinated steps like a child, often with a rocking motion; to toddle, doddle.	*mp-walk*
parachute	Transl	AM	Manner	1		Vehicle / Instrument	[intransitive verb] to jump from an aircraft using a parachute. [transitive verb] to drop someone or something from an aircraft by parachute. TFD: [transitive verb] To drop (supplies or troops, for example) by means of a parachute. [intransitive verb] To descend by means of a parachute. MW: [transitive verb] to convey by means of a parachute. [intransitive verb] to descend by means of a parachute.	[transitive verb] To convey or drop down or into a place by means of a parachute. [intransitive verb] To descend by parachute; to use a parachute.	
parade	Transl		Manner	1		mp-walk; State of the Figure (proud)	[intransitive and transitive verb](of a group) to walk or march somewhere, usually as part of a public celebration. LLA: To walk proudly around a place, in a way that shows you want people to notice and admire you. TFD: To take part in a parade; march in a public procession. MW: to march in or as if in a procession. To show off.	[intransitive verb] To march in procession or with great display or ostentation; to walk up and down, promenade, etc., in a public place, esp. in order to be seen; to show off. [transitive verb] To march through (a place) in procession or with great display; to walk up and down, promenade along (a street, etc.) or through (a place), esp. in order to be seen.	*mp-walk*

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
pass	Transl	AM	Path	1	pass/cross G (traversal, milestone)		Anglo-French passer, from Vulgar Latin *passare, from Latin passus step. [intransitive and transitive verb] to go past something or someone or move in relation to it. TFD: To move on or ahead; proceed.To move by. [transitive verb] To go beyond; surpass. To go across; go through. To go by without stopping; leave behind. To cause to go by. MW: move, proceed, go. to move in a path so as to approach and continue beyond something. to go or make one's way through. [transitive verb] to go beyond. to go past (one moving in the same direction). to go by : proceed or extend beyond.	I. To excel or surpass. [transitive verb] To go beyond (a point or place). II. To proceed, move forward, depart. to cause to do this. [intransitive verb] Of a person or animal: to go by or past. To go on, move onward; to make one's way. [transitive verb] To cause or enable (a person or thing) to go or proceed somewhere; to carry, convey, or send, esp. to convey across a river or land; to transport. Usu. with preposition or adverb of direction. intr. To go or be transported from one place or set of circumstances to (unto) or into another.	
pedal	Transl	AM	Manner	1		Vehicle / Instrument	[intransitive and transitive verb] to push the pedals of a bicycle round with your feet. TFD: To use or operate a pedal or pedals.To ride a bicycle. MW: to ride a bicycle. to use or work a pedal.	[intransitive verb] To push the pedals of a bicycle or similar vehicle in a circular motion with one's feet, so as to propel oneself forward. [transitive verb] To propel (a bicycle, etc.) by pushing pedals with the feet; (also) to convey by pedalling.	
penetrate	Transl		Path	1	into G		Latin penetratus, past participle of penetrare, from penitus deep within, far. [intransitive and transitive verb] to move into or through something. TFD: To pierce or enter into something; make a way in or through something.To enter or force a way into; pierce. MW: to pass, extend, pierce, or diffuse into or through something. to pass into or through.	[transitive verb] To get into or through, gain entrance or access to, esp. with force, effort, or difficulty; to pierce. [intransitive verb] Usu. with into, through, to.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
perambulate	Transl		Manner	1		mp-walk	[intransitive verb] to walk about for pleasure. OLD USE. TFD: [intransitive verb] To walk about; roam or stroll. [transitive verb] To walk through.To inspect (an area) on foot. MW: [intransitive verb] to stroll. [transitive verb] to travel over or through especially on foot.	[transitive verb] To walk through, over, or about (a place or space). In early use more generally: to travel or pass through, to traverse. [intransitive verb] To walk, wander, or travel from place to place; to move. Also with about, around.	*mp-walk*
pirouette	Self-c		Manner	1		Revolve, Rotate, Spin	[intransitive verb] a fast turn of the body on the toes or the front part of the foot, performed especially by a ballet dancer. TFD: [intransitive verb] to perform a pirouette. MW: [intransitive verb]	[intransitive verb] To perform a pirouette; to spin or walk on the points of the toes; to move with a whirling motion.	
plod	Transl		Manner	1		mp-walk; Rate-slow; Forced Motion (Energy-low); Characteristic use of lower body (Steps-heavy)	[intransitive verb] to walk taking slow steps, as if your feet are heavy. TFD: To move or walk heavily or laboriously; trudge. MW: to walk heavily or slowly. to proceed slowly or tediously.	[intransitive verb] To walk heavily or without elasticity; to move or progress doggedly or laboriously; to trudge (along, on, etc.).	*mp-walk*
plummet	Transl		Path + Manner	2	Earth-based orientation: downwards	Rate-fast; Shape of Path (straight)?	[intransitive verb] to fall very quickly and suddenly. TFD: To fall straight down; plunge. MW: to fall perpendicularly.	[intransitive verb] To drop or fall rapidly or precipitously; to plunge down.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
plunge	Transl	AM	Path + Manner	2	forward/ down/ into G; to/towards G	Rate-fast; Forced Motion	[intransitive and transitive verb] to (cause someone or something to) move or fall suddenly and often a long way forward, down or into something. TFD: To fall or throw oneself into a substance or place. To move forward and downward violently. [transitive verb] To thrust or throw forcefully into a substance or place. MW: [intransitive verb] to thrust or cast oneself into or as if into water.	[intransitive verb] To throw or hurl oneself into water or the like; to dive; to fall abruptly and involuntarily, esp. from a great height, into a depth; to descend. Also: to enter suddenly into or pass rapidly through something which surrounds one completely, as a forest, a crowd, etc. Usu. with in, into, through.	
polka	Self-c		Manner	1		Dance	AS NOUN:a fast active dance that was popular in the 19th century, or a piece of music that can be used for this dance. [intransitive verb] TFD: to dance the polka. MW: [intransitive verb]	[intransitive verb] To dance the polka.	
pop	Transl		Manner	1		Rate-fast; Sudden movement	[intransitive verb] to move quickly and suddenly, especially from an enclosed space. [intransitive verb] to go to a particular place. TFD: To move quickly or unexpectedly; appear abruptly. MW: to go, come, or appear suddenly —often used with up.	[intransitive verb] To move or go somewhere quickly or unexpectedly, esp. for a short time. Usu. with in, off, out, up, etc.	
pounce	Transl		Path + Manner	2	to/towards G	Rate-fast	[intransitive verb] to jump or move quickly in order to catch or take hold of something. TFD: To spring or swoop with intent to seize someone or something. To attack suddenly. MW: to swoop upon and seize something with or as if with talons. to make a sudden assault or approach.	[intransitive verb] Of an animal, bird, etc.: to spring or swoop suddenly so as to catch (prey).	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
prance	Transl		Manner	1		State of the Figure (proud)	[intransitive verb] to walk in an energetic way and with more movement than necessary. [intransitive verb] When a horse prances it takes small, quick steps and raises its legs higher than usual. TFD: To spring forward on the hind legs. Used of a horse. To spring or bound forward in a manner reminiscent of a spirited horse. To ride a horse moving in such a fashion. To walk or move about spiritedly; strut. MW: to spring from the hind legs or move by so doing. to ride on a prancing horse. to walk or move in a spirited manner.	[intransitive verb] To dance, gambol, caper. To move, walk, or behave in an ostentatious or arrogant manner; to swagger; to flounce. [intransitive verb] Of a person: to ride a prancing horse; to ride proudly or ostentatiously. [intransitive verb] Of an animal, esp. a horse: to rise by springing from the hind legs; to move by a succession of such springs.	*mp-walk / mp-jump*
promenade	Transl		Manner	1		mp-walk; Leisurely Motion; State of Figure (relaxed)	[intransitive verb] to walk slowly along a road or path for relaxation and pleasure. TFD: [intransitive verb] To go on a leisurely walk. [transitive verb] To take a promenade along or through. MW: [intransitive verb] to take or go on a promenade. [transitive verb] to walk about in or on. As noun = a place for strolling, a leisurely walk or ride especially in a public place for pleasure or display.	[intransitive verb] To take a leisurely walk (or a ride or drive), esp. in a public place so as to meet or be seen by others. [transitive verb] To make a promenade through; to walk about (a place) in a leisurely or ostentatious way.	*mp-walk*
pronk	Self- c / Transl		Manner	1		mp-jump; Characteristic use of lower body (using all legs)	[intransitive verb] TFD: jump straight up. MW: NOFOUND	[intransitive verb] Of a springbok or other antelope: to leap in the air with an arched back and stiff legs (using all four legs simultaneously in the leap), esp. as a form of display.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
prowl	Transl		Manner	1		mp-walk; Furtive Motion	[intransitive and transitive verb] to move around quietly in a place trying not to be seen or heard, such as when hunting. LLA: to quietly walk around an area or building, trying not to be seen or heard. TFD: To rove furtively or with predatory intent. To roam through stealthily, as in search of prey or plunder. MW: to move about or wander stealthily in or as if in search of prey. to roam over in a predatory manner.	[intransitive verb] To go or move about, esp. in search of or looking for something; (hence) to roam or wander about in search of plunder, prey, etc., or with predatory intent; to move about, around stealthily or restlessly.	*mp-walk*
punt	Transl	AM?	Manner	1		Vehicle / Instrument	AS NOUN: a long narrow boat with a flat bottom and a square area at each end, which is moved by a person standing on one of the square areas and pushing a long pole against the bottom of the river. [intransitive verb] to travel in a punt. TFD: [transitive verb] To propel (a boat) with a pole. To carry in a punt. [intransitive verb] To go in a punt. MW: [transitive verb] to propel (as a punt) with a pole.	[transitive verb] To propel (a punt or other boat) by pushing against the bed of a river, etc., with a pole; to propel in the manner of a punt. To convey in a punt or by punting. [intransitive verb] To push with a punt pole; to propel a punt or other boat in this way; to travel in a punt.	
pursue	Transl		Path	1	after G		from Anglo-French pursure, pursiure, from Latin prosequi, from pro-forward + sequi to follow. [transitive verb] to follow someone or something, usually to try to catch or kill them. [intransitive and transitive verb] TFD: To follow in an effort to overtake or capture; chase. MW: to follow in order to overtake, capture, kill, or defeat. to go in pursuit.	To follow or go in pursuit (chiefly involving physical movement). [intransitive verb] To go in chase or pursuit; to give chase. [transitive verb] Originally: to follow (a person, animal, or thing) with intent to overtake and capture, harm, or kill; to hunt. Later usu. more generally: to chase, go after.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
quake	Self-c		Manner	1		Shake, Swing, Vibrate	[intransitive verb] to shake because you are very frightened or very amused, or to feel or show great fear. TFD: To shake or tremble, as from instability or shock.To shiver, as with cold or from strong emotion. MW: to shake or vibrate usually from shock or instability. to tremble or shudder usually from cold or fear	[intransitive verb] Of a thing, esp. the earth: to shake or tremble as a result of an external or internal impulse, natural instability, etc.	
quickstep	Self-c		Manner	1		Dance	AS NOUN: a dance with a lot of quick steps, or a piece of music for this. TFD: perform a quickstep. MW: NO FOUND AS MOTION VERB	[intransitive verb] To step quickly, esp. to perform a quick step or quick march. [intransitive verb] To dance the quickstep.	
quiver	Self-c		Manner	1		Shake, Swing, Vibrate	[intransitive verb] to shake slightly, often because of strong emotion. TFD:To shake with a slight, rapid, tremulous movement. MW: to shake or move with a slight trembling motion.	[intransitive verb] To shake, tremble, or vibrate, with a slight but rapid agitation. (Said of persons, esp. under the influence of some emotion, of things, light, etc.) [transitive verb] To cause to vibrate or tremble.	
race	Transl	AM	Manner	1		Rate-fast	[intransitive and transitive verb] to move or go fast. TFD: [intransitive verb] to compete in a race. To move rapidly or at top speed. [transitive verb] To transport rapidly or at top speed; rush. MW: [intransitive verb] to compete in a race. to go, move, or function at top speed or out of control. [transitive verb] to transport or propel at maximum speed.	[intransitive verb] To run a race (with), to compete (with) in speed. [intransitive verb] To run, ride, sail, etc. swiftly. [transitive verb] To race with; to try to beat in running. To cause to move swiftly or to make rapid progress; to cause to run a race or races.	*mp-run*

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
raft	Transl	AM	Manner	1		Vehicle / Instrument	AS NOUN: a flat floating structure for travelling across water, often made of pieces of wood tied roughly together and moved along with a paddle (= pole with a flat end). [intransitive and transitive verb] to travel or transport something on a raft. TFD: [transitive verb] to convey on a raft. To make into a raft. [intransitive verb]To travel by raft. MW: [transitive verb] to transport in the form of or by means of a raft. [intransitive verb] to travel by raft.	[transitive verb] To transport by water: in the form of a raft, on, or by means of, a raft. To go upon or cross (a river) by means of a raft. [intransitive verb] To use a raft for some purpose; to work on or direct a raft.	
ramble	Transl		Manner	1		mp-walk; No aim in Motion	[intransitive verb] to walk for pleasure, especially in the countryside. TFD: To move about aimlessly.To walk about casually or for pleasure. MW: to move aimlessly from place to place. to wander over.	[intransitive verb] Of persons: To wander, travel, make one's way about (now usually to walk) in a free unrestrained manner and without definite aim or direction. [transitive verb] To wander over. rare.	*mp-walk*
reach	Transl		Path	1	to/towards G (arrival, endpoint)		[transitive verb] to arrive at a place, especially after spending a long time or a lot of effort travelling. TFD: To arrive at. To travel as far as. MW: to arrive at or come to something.	[transitive verb] To come to, arrive at (a place, object, or point in space), to get up to or as far as.	
recede	Transl		Path	1	away from G (departure, source)		from Latin recedere to go back, from re- + cedere to go. [intransitive verb] to move further away into the distance, or to become less clear or less bright. TFD:To move back or away from a limit, point, or mark. MW: to move back or away.	[intransitive verb] To go back or further off; to remove to or towards a more distant position. Of persons. Usually = to retreat, retire.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
recline	Self-c	AM	Manner	1		Posture (towards horizontal; Bend; backwards)	[intransitive and transitive verb] to lean or lie back with the upper part of your body in a nearly horizontal position. TFD: [transitive verb] To cause to assume a leaning or prone position. [intransitive verb] to lie back or down. MW: [transitive verb] to cause or permit to incline backwards. [intransitive verb] to lean or incline backwards.	[intransitive verb] Of persons or parts of the body: To rest in a recumbent or inclined position, lean or repose on or upon something. [transitive verb] To lay down, or make to lie down (properly on the back); to cause to incline (backwards); to place in a recumbent or leaning position; to rest (the head, etc.) in this way.	
recoil	Transl		Path	1	backwards		from Anglo-French reculer, recuiler, from re- + cul backside [intransitive verb] to move back because of fear or disgust. TFD: To spring back, as upon firing.To shrink back, as in fear or repugnance. To fall back; return. MW: to fall back under pressure. to shrink back physically or emotionally. to spring back to or as if to a starting point .	[intransitive verb] To retreat, retire, go or draw back (or aback) before an enemy or opposing force. To stagger back, from the effects of a blow. To start or spring back in fear, horror, disgust, or the like.	
reel1	Self-c / Transl		Manner	1		Unsteady Motion	[intransitive verb] to walk moving from side to side, looking like you are going to fall. TFD: To stagger, lurch, or sway, as from drunkenness. MW: to walk or move unsteadily.	[intransitive verb] Of persons (or animals): To sway or stagger as the result of a blow or encounter. Often with back, backward.	*mp-walk / mp-run*
reel2	Self-c / Transl ?	AM	Manner	1		Revolve, Rotate, Spin	[intransitive verb] If the place where you are reels, what you are looking at seems to go round and round in front of you. TFD: To go round and round in a whirling motion. [transitive verb] To cause to reel. MW: to turn or move round and round.	[intransitive verb] To whirl round or about; to go with a whirling motion. [transitive verb] To cause to roll, whirl.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
retire	Transl	AM	Path	1	away from G (departure, source)		Middle French retirer, from re- + tirer to draw. [intransitive verb] FORMAL to leave a room or group of people and go somewhere quiet or private. TFD: To withdraw, as for rest or seclusion.To move back or away; recede. [transitive verb] To lead (troops, for example) away from action; withdraw. MW: to withdraw from action or danger. to withdraw especially for privacy. to move back. [transitive verb] to march (a military force) away from the enemy.	[intransitive verb] To withdraw to or into a place (or way of life) for the sake of seclusion, shelter, or security. [transitive verb] To withdraw, lead back (troops, etc.), esp. before a superior force.	
retreat	Transl	AM?	Path	1	away from G (departure, source)		From Anglo-French retrait, from past participle of retraire to withdraw, from Latin retrahere, from re- + trahere to draw . [intransitive verb] to go away from a place or person in order to escape from fighting or danger. TFD: To fall or draw back; withdraw or retire. MW: to make a retreat: withdraw. [transitive verb] to draw or lead back: remove.	[intransitive verb] To withdraw, retire, draw back. Of an army or a combatant: To retire before superior force or after a defeat. [transitive verb] To draw or lead back; to remove, take away.	
return	Transl	AM	Path	1	back to G		From Anglo-French returner, from re- + turner, tourner to turn [intransitive verb] to come or go back to a previous place. TFD: [intransitive verb]To go or come back, as to an earlier condition or place. [transitive verb] To send, put, or carry back. MW: to go back or come back again. [transitive verb] to bring, send, or put back to a former or proper place.	[intransitive verb] To come or go back to a place or person. [transitive verb] To bring or convey back to a place or person	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
revolve	Self-c	AM	Manner	1		Revolve, Rotate, Spin	[intransitive and transitive verb] to move or cause something to move round a central point or line. TFD: To orbit a central point. To turn on an axis; rotate. To cause to revolve. MW: Middle English, from Latin revolvere to roll back, cause to return, from re- + volvere to roll. to move in a curved path round a center or axis b: to turn or roll round on an axis. to cause to go round in an orbit.	[intransitive verb] To perform a circular motion; to move in a regular orbit about or round a fixed point. [transitive verb] To cause (something) to travel in an orbit around a central point; to rotate (something) upon an axis.	
rickshaw	Transl	NO	Manner	1		Vehicle / Instrument	AS NOUN: a small covered passenger vehicle with two wheels which is usually pulled by one person. TFD, MW: AS NOUN.	AS NOUN: jinricksha: A light two-wheeled hooded vehicle having springs and two shafts, drawn by one or more men. First used in Japan c1870, but now common in other parts of the world; colloq. shortened to rickshaw. [intransitive verb] to ride in a jinricksha.	
ride	Transl		Manner	1		Vehicle / Instrument (horse, bike, vehicle)	[intransitive and transitive verb] to sit on a horse or a bicycle and travel along on it controlling its movements. TFD: To be carried or conveyed, as in a vehicle or on horseback. To sit on and move in a given direction. MW: to sit and travel on the back of an animal that one directs. to travel in or on a conveyance. to travel on.	[intransitive verb] To sit upon, and be carried by, a horse or other animal; to move about, make one's way, or journey upon horseback (or, in mod. use, on a cycle). To sit or be carried on or upon something after the manner of one on horseback. [transitive verb] To sit or be carried upon, to go or travel upon (a horse, or other animal of burden); to manage or control while seated on. To travel in or on (a train, public transport vehicle, etc.), to be a passenger on.	
rise1	Transl		Path	1	Earth-based orientation: upwards		[intransitive verb] to move upwards. TFD: [intransitive verb] To move from a lower to a higher position; ascend. MW: To move upward: ascend.	[intransitive verb] To ascend, mount up. Of the heavenly bodies: To come above the horizon. Of smoke, vapour, or the like: To ascend into the air, mount up. To move or be carried upwards; to ascend.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
rise2	Self-c		Manner	1		Posture (vertical-upwards)	[intransitive verb] to stand, especially after sitting. TFD: To assume a standing position after lying, sitting, or kneeling. MW: to assume an upright position especially from lying, kneeling, or sitting. to get up from sleep or from one's bed	[intransitive verb] To get up from sitting, lying, or repose. To get up from a sitting, kneeling, or lying posture; to assume a standing position; to get upon one's feet.	
roam	Transl		Manner	1		mp-walk; No aim in motion	[intransitive and transitive verb] to move about or travel, especially without a clear idea of what you are going to do. LLA: to walk round freely with no particular aim. TFD: To move about without purpose or plan; wander. To wander over or through. MW: to go from place to place without purpose or direction : wander. to range or wander over.	[intransitive verb] To wander, rove, or ramble; to walk about aimlessly, esp. over a wide area. [transitive verb] To wander over or through (a place).	*mp-walk*
roar	Transl		Manner	1		Rate-fast; Noisy Activity	[intransitive verb] If a vehicle or aircraft roars somewhere, it moves there very quickly making a lot of noise. TFD: NO FOUND AS MOTION VERB. MW: to proceed or rush with great noise or commotion.	[intransitive verb] To travel on a vehicle which is making a loud noise; to motor rapidly.	
rock	Self-c	AM	Manner	1		Shake, Swing, Vibrate	[intransitive and transitive verb] to (cause someone or something to) move backwards and forwards or from side to side in a regular way. TFD: move back and forth or sideways. [transitive verb] to cause to move back and forth. MW: To become moved backward and forward under often violent impact. to move gently back and forth. to move back and forth in or as if in a cradle. [transitive verb] to cause to sway back and forth.	[intransitive verb] To sway to and fro under some impact or stress; to move or swing from side to side; to oscillate. [transitive verb] To move (a child) gently to and fro in a cradle, in order to soothe or send it to sleep.To move or sway (one) to and fro, esp. in a gentle or soothing manner. To cause to sway to and fro or from side to side; to move backwards and forwards.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
rocket1	Transl	AM	Manner	1		Vehicle / Instrument	AS NOUN: a large cylindrical object which moves very fast by forcing out burning gases, and which is used for space travel or as a weapon. TFD: [intransitive and transitive verb] To soar or rise rapidly. To carry by means of a rocket. MW: [transitive verb] to convey or propel by means of or as if by a rocket. [intransitive verb] to travel rapidly in or as if in a rocket.	[transitive verb] To propel (someone) at speed, as by a rocket; to send by rocket.	
rocket2	Transl		Path + Manner	2	Earth-based orientation: upwards	Rate-fast	TFD: [intransitive verb] To move swiftly and powerfully, as a rocket. to soar or rise rapidly. MW: [intransitive verb] to rise up swiftly, spectacularly, and with force.	[intransitive verb] In general use: to move like a rocket, to speed.	
roll	Self-c /Transl	AM	Manner	1		Revolve, Rotate, Spin	[intransitive and transitive verb] to (cause to) move somewhere by turning over and over or from side to side. To (cause something to) turn over onto itself to form a cylinder or a sphere. TFD: To move forward along a surface by revolving on an axis or by repeatedly turning over. To travel or be moved on wheels or rollers. To cause to move forward along a surface by revolving on an axis or by repeatedly turning over. To move or push along on wheels or rollers MW: to move along a surface by rotation without sliding. to turn over and over. to impel forward by causing to turn over and over on a surface. to cause to revolve by turning over and over on or as if on an axis. to cause to move in a circular manner.	[Intransitive verb] To move by revolving or rotating on (or as on) an axis; to move forward on a surface by turning over and over. Of vehicles: To move or run on wheels. [transitive verb] To move or impel forward (an object) on a surface by making it turn over and over; to shift about, to send down to a lower level, etc., in this manner. To drive or draw (a vehicle); to wheel (a cycle); to move by means of rollers. To convey in a wheeled vehicle.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
rollerblade	Transl	NO	Manner	1		Vehicle / Instrument	AS NOUN: one of two boots with a single row of small wheels on the bottom which you wear in order to travel along quickly for enjoyment. [intransitive verb] to move on a surface, using Rollerblades. TFD: [intransitive verb] travel on shoes with a single line of rubber wheels attached to their soles. MW: no found as motion verb.	[intransitive verb] to roller-skate using skates of this type	
romp	Transl		Manner	1		Playful Motion	[intransitive verb] to play in a rough, excited and noisy way. TFD: To play or frolic boisterously. To run or advance in a rapid or easy manner. MW: to run or play in a lively, carefree, or boisterous manner. to move or proceed in a brisk, easy, or playful manner.	[intransitive verb] To play, sport, or frolic in a very lively, merry, or boisterous manner.	*Low ratings. No significant difference*
rotate	Self-c	AM	Manner	1		Revolve, Rotate, Spin	[intransitive and transitive verb] to (cause to) turn in a circle, especially around a fixed point. TFD: To turn around on an axis or center. To cause to turn on an axis or center. MW: to turn about an axis or a center : revolve. to cause to turn or move about an axis or a center.	[intransitive verb] To move round a centre or axis; to perform one or more revolutions. [transitive verb] To cause (a thing) to turn round or revolve on a centre or axis.	
rove	Transl		Manner	1		mp-walk; No aim in motion	[intransitive verb] to move, travel or look around especially a large area. TFD: To wander about at random, especially over a wide area; roam. To roam or wander around, over, or through. MW: to move aimlessly. to wander through or over.	[intransitive verb] To wander about with no fixed destination; to move hither and thither at random or in a leisurely fashion; to stray, roam, ramble.	*mp-walk*

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
row	Transl		Manner	1		Vehicle / Instrument	[intransitive and transitive verb] to cause a boat to move through water by pushing against the water with oars. TFD: To propel a boat with or as if with oars. To propel (a boat) with or as if with oars. To carry in or on a boat propelled by oars. MW: to propel a boat by means of oars. to propel with or as if with oars. to transport in an oar-propelled boat.	[intransitive verb] Of persons: To use oars, sweeps, or similar means, for the purpose of propelling a boat or other vessel.	
rumba	Self-c		Manner	1		Dance	AS NOUN: a type of dancing, originally from Cuba, or the music for this. TFD: dance the rhumba. MW: NO FOUND AS MOTION VERB	[intransitive verb] To dance the rumba. Also, to move as though dancing the rumba.	
run	Transl		Manner	1		mp-run	[intransitive and transitive verb] (of people and some animals) to move along, faster than walking, by taking quick steps in which each foot is lifted before the next foot touches the ground. TFD: To move swiftly on foot so that both feet leave the ground during each stride. MW: to go faster than a walk; specifically : to go steadily by springing steps so that both feet leave the ground for an instant in each step.	[intransitive verb] To move the legs quickly (the one foot being lifted before the other is set down) so as to go at a faster pace than walking; to cover the ground, make one's way, rapidly in this manner.	
rush	Transl	AM	Manner	1		Rate-fast	[intransitive and transitive verb] to (cause to) go or do something very quickly. TFD: To move or act swiftly; hurry.To cause to move or act with unusual haste or violence. MW: to move forward, progress, or act with haste or eagerness or without preparation. to push or impel on or forward with speed, impetuosity, or violence.	[intransitive verb] Of persons or animals: To run, dash, or charge with violence or impetuous rapidity. [transitive verb] To cause to move with great speed and force; to send or impel violently.	*mp-run/mp-walk*

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
sail	Transl		Manner	1		Vehicle / Instrument	[intransitive verb] When a boat or a ship sails, it travels on the water. To control a boat that has no engine and is pushed by the wind. TFD: To move across the surface of water, especially by means of a sailing vessel. To navigate or manage (a vessel). MW: to travel on water by the action of wind upon sails or by other means. to travel on (water) by means of motive power (as sail).	[intransitive verb] Of persons: To travel on water in a vessel propelled by the action of the wind upon sails; now often in extended sense, to travel on water in a vessel propelled by any means other than oars; to navigate a vessel in a specified direction. Of a ship or other vessel: To move or travel on water by means of sails, or (in modern use) by means of steam or any other mechanical agency. [transitive verb] Of persons, also of a vessel: To sail over or upon, to navigate (the sea, a river, etc.). Now somewhat arch.	
samba	Self-c		Manner	1		Dance	AS NOUN: an energetic dance originally from Brazil, or music for dancing this dance. [intransitive verb] TFD: to perform this dance. MW: [intransitive verb]	[intransitive verb] To dance the samba.	
sashay	Transl		Manner	1		mp-walk; State of Figure (proud)	[intransitive verb] to walk confidently while moving your hips from side to side in a way that attracts attention. TFD: To walk or proceed, especially in an easy or casual manner.To strut or flounce in a showy manner. To perform the chassé in dancing. To move in a sideways manner. MW: to make a chassé. To strut or move about in an ostentatious or conspicuous manner. to proceed or move in a diagonal or sideways manner.	[intransitive verb] To perform a chassé, esp. in square dancing; freq. transf., to perform a movement similar to the chassé. To glide, walk, or travel, usu. in a casual manner. To move diagonally or sideways; to travel an irregular path; to wander or saunter. To move or walk ostentatiously, conspicuously, or provocatively; to strut or parade.	*mp-walk*

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
saunter	Transl		Manner	1		mp-walk; Leisurely Motion; State of the Figure (relaxed)	[intransitive verb] to walk in a slow and relaxed way, often in no particular direction. LLA: To walk in a slow and lazy way, often when you should be hurrying to do something. TFD: To walk at a leisurely pace; stroll. MW: to walk about in an idle or leisurely manner : stroll.	[intransitive verb] To walk with a leisurely and careless gait; to stroll. Also, to travel by vehicle in a slow and leisurely manner.	*mp-walk*
scale	Transl		Path	1	up / onto G		from Late Latin scala ladder, staircase, from Latin scalae, plural, stairs, rungs, ladder; akin to Latin scandere to climb [transitive verb] to climb up a steep surface, such as a wall or the side of a mountain, often using special equipment. TFD: To climb; ascend. To climb up or over; ascend. MW: to climb by or as if by a ladder.	[transitive verb] To climb, get over (a wall or the like); to ascend (a mountain); to get to or reach the top of.	
scamper	Transl		Manner	1		mp-run; Playful Motion; Characteristic use of lower body (Steps-small)?	[intransitive verb] When small children and animals scamper, they run with small quick steps, in a playful or frightened way. LLA: To run with short quick steps, especially when running in a group and often in a playful way. TFD: To run or go quickly and lightly. MW: to run nimbly and usually playfully about.	[intransitive verb] To run or caper about nimbly; to go or journey hastily from place to place.	*mp-run / mp-walk*
scatter	Transl	AM	Path	1	Multiple directions from a unique start		[intransitive and transitive verb] to (cause to) move far apart in different directions. TFD: To separate and go in different directions; disperse.To cause to separate and go in different directions. MW: to separate and go in various directions : disperse. to cause to separate widely.	[intransitive verb] To separate and disperse; to go dispersedly or stragglingly. [transitive verb] To separate and drive in various directions (a body of men or animals, a collection of things); to disperse, dissipate (a quantity of matter); to dispel (clouds, mists).	
scoot	Transl		Manner	1		Rate-fast	[intransitive verb] INFORMAL to go quickly. TFD: To go suddenly and speedily; hurry. MW: to move swiftly.	[intransitive verb] To go suddenly and swiftly, to dart; to go away hurriedly.	*mp-run / mp-walk*

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
scram	Transl		Path + Manner	2	away from G (departure, source)	Rate-fast	[intransitive verb] INFORMAL to go away quickly. TFD: To leave a scene at once; go abruptly. MW: to go away at once.	[intransitive verb] To depart quickly.	
scramble	Transl		Manner	1		Rate-fast; Forced Motion (energy-high); Use of one's hands and legs	[intransitive verb] to move or climb quickly but with difficulty, often using your hands to help you. TFD: [intransitive verb] To move or climb hurriedly, especially on the hands and knees. MW: to move with urgency or panic. To move or climb hastily on all fours.	[intransitive verb] To raise oneself to an erect posture, to get through or into a place or position, by the struggling use of the hands and feet; hence, to make one's way by clambering, crawling, jumping, etc. over difficult ground or through obstructions.	
scud	Transl		Manner	1		Rate-fast; Smooth Motion?	[intransitive verb] (especially of clouds and ships) to move quickly and without stopping in a straight line. TFD: [intransitive verb] To run or skim along swiftly and easily. MW: to move or run swiftly especially as if driven forward.	[intransitive verb] To run or move briskly or hurriedly; to dart nimbly from place to place.	*Low ratings. No significant difference*
scurry	Transl		Manner	1		Rate-fast; Characteristic use of lower body (Steps-short)?	[intransitive verb] to move quickly, with small short steps. LLA: To run with short quick steps, especially when you need to move quickly to escape from danger. TFD: To go with light running steps; scamper. MW: to move in or as if in a brisk pace : scamper. to move around in an agitated, confused, or fluttering manner.	[intransitive verb] To go rapidly, move hurriedly.	*mp-run*
scuttle	Transl		Manner	1		Rate-fast; Characteristic use of lower body (Steps-short)?	[intransitive verb] to move quickly, with small short steps, especially in order to escape. LLA: To run with short quick steps, especially to escape from something- use this especially about small animals. TFD: To move about or proceed hurriedly. MW: scurry.	[intransitive verb] To run with quick, hurried steps.	*mp-run / mp-walk*

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
seesaw	Self-c		Manner	1		Vehicle / Instrument (seesaw)	AS NOUN: a long board that children play on. The board is balanced on a central point so that when a child sits on each end they can make the board go up and down by pushing off the ground with their fee. [intransitive verb] TFD: To play on a seesaw. MW: [intransitive verb] to move backward and forward or up and down. to play at seesaw	[intransitive verb] To move up and down, or backwards and forwards; to undergo a see-saw motion; also to play see-saw.	
shadow	Transl		Path	1	after G		[transitive verb] to follow closely. TFD: To follow, especially in secret; trail. MW: to follow especially secretly : trail.	[transitive verb] To follow (a person) like a shadow; in mod. journalistic language said of a detective who dogs the steps of a person under surveillance.	
shake	Self-c	AM	Manner	1		Shake, Swing, Vibrate	[intransitive and transitive verb] to move backwards and forwards or up and down in quick, short movements, or to make something or someone do this. TFD: To move to and fro in short, irregular, often jerky movements. To tremble, as from cold or in anger. To cause to move to and fro with jerky movements.To cause to quiver, tremble, vibrate, or rock. MW: to move irregularly to and fro. to vibrate especially as the result of a blow or shock. to tremble as a result of physical or emotional disturbance. to cause to move to and fro, up and down, or from side to side especially in a repetitive, rhythmic, or quick jerky manner.	[intransitive verb] Of things having more or less freedom of movement: To move irregularly and quickly to and fro, up and down, or from side to side; to quiver, quake, vibrate, waver. [transitive verb] To cause to vibrate, agitate.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
shamble	Transl		Manner	1		mp-walk; Rate-slow; Awkward Motion; Unsteady Motion?	[intransitive verb] to walk slowly and awkwardly, without lifting your feet correctly. LLA: To walk slowly and rather awkwardly, bending forwards in a tired or lazy way. TFD: To walk in an awkward, lazy, or unsteady manner, shuffling the feet. MW: To walk awkwardly with dragging feet : shuffle.	[intransitive verb] To go with an awkward ungainly gait, to walk awkwardly or unsteadily.	*mp-walk*
ship	Transl	AM	Manner	1		Vehicle / Instrument	[transitive verb] to send something, usually a large object or a large quantity of objects or people, to a distant place. TFD: [intransitive and transitive verb] To travel by ship. To cause to be transported by or as if by ship. MW: [intransitive verb] to embark on a ship. to go or travel by ship. [transitive verb] to place or receive on board a ship for transportation by water. to cause to be transported.	[intransitive verb] To go by ship to, into, or from a place. [transitive verb] To put or take (persons or things) on board ship; to cause (a person) to embark; to place (goods) in a ship for transportation.	
shiver	Self-c		Manner	1		Shake, Swing, Vibrate	[intransitive verb] When people or animals shiver, they shake slightly because they feel cold, ill or frightened. TFD: To shake with or as if with cold; tremble. MW: to undergo trembling : quiver.	[intransitive verb] To tremble, shake, quiver; esp. to tremble with cold or fear.	
shoot	Transl		Manner	1		Rate-fast	[intransitive verb] to move in a particular direction very quickly and directly. TFD: To move swiftly; dart. MW: o go or pass rapidly and precipitately.	[intransitive verb] To go swiftly and suddenly. Of an inanimate thing (or of a living being moving involuntarily): To go or pass with a sudden swift movement through space; to rush, be precipitated; to fly as an arrow from a bow.	*Low ratings. No significant difference*

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
shudder	Self-c		Manner	1		Shake, Swing, Vibrate	[intransitive verb] to shake suddenly with very small movements because of a very unpleasant thought or feeling. TFD: To shiver convulsively, as from fear or revulsion. To vibrate; quiver. MW: to tremble convulsively : shiver, quiver.	[intransitive verb] To have a convulsive tremor of the body caused by fear, abhorrence, or cold; hence, to tremble with horror or dread.	
shuffle	Transl		Manner	1		mp-walk; Rate-slow; Characteristic use of lower body (contact feet and ground); Noisy Motion?	[intransitive verb] to walk by pulling your feet slowly along the ground rather than lifting them. LLA: To walk slowly and noisily, without lifting your feet off the ground properly. TFD: To move with short sliding steps, without or barely lifting the feet. To slide (the feet) along the floor or ground while walking. MW: to move or walk in a sliding dragging manner without lifting the feet. to move (as the feet) by sliding along or back and forth without lifting.	[intransitive verb] To move the feet along the ground without lifting them, so as to make a scraping noise; to walk with such a motion of the feet; to go with clumsy steps or a shambling gait; also said of the feet.	*mp-walk*
shuttle	Transl	AM	Manner	1		Vehicle / Instrument	[intransitive and transitive verb] to travel or take people regularly between the same two places. TFD: [intransitive verb] To go, move, or travel back and forth by or as if by a shuttle. [transitive verb] To transport by or as if by a shuttle. MW: [transitive verb] to cause to move or travel back and forth frequently. to transport in, by, or as if by a shuttle. [intransitive verb] to move or travel back and forth frequently. to move by or as if by a shuttle.	[intransitive verb] To go or move backwards and forwards like a shuttle; to travel quickly to and fro. Also, to travel in one direction using a shuttle service. [transitive verb] To transport in a vehicle or craft operating a shuttle service.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
sidle	Transl		Manner	1		Furtive Motion; mp-walk?	[intransitive verb] to walk towards or away from someone, trying not to be noticed. TFD: To advance in an unobtrusive, furtive, or coy way. MW: to go or move with one side foremost especially in a furtive advance.	[intransitive verb] To move or go sideways or obliquely; to edge along, esp. in a furtive or unobtrusive manner, or while looking in another direction; to make advances in this manner.	*mp-walk*
sink	Transl	AM	Path	1	downwards		from Old English sincan. [intransitive and transitive verb] to (cause something or someone to) go down below the surface or to the bottom of a liquid or soft substance. TFD: To descend to the bottom; submerge.To fall or drop to a lower level, especially to go down slowly or in stage. To cause to descend beneath a surface: sink a ship.To cause to drop or lower. MW: to go to the bottom. to fall or drop to a lower place or level. to cause to sink.	[intransitive verb] To become submerged in water; to go under or to the bottom; (of ships) to founder. To become partly or completely submerged in quicksand, marshy ground, snow, etc. To subside or go down into, to be swallowed up by, the earth, etc. [transitive verb] To cause (a vessel, etc.) to plunge or go down beneath the water; to submerge by rendering incapable of floating. To submerge; to put or thrust under water. To cause (a thing) to descend or fall to a lower plane or level; to force, press, or weigh down in any way.	
skate	Transl	NO	Manner	1		Vehicle / Instrument	AS NOUN: a special boot with a thin metal bar fixed to the bottom that you wear to move quickly on ice, or a boot with four small wheels fixed to the bottom so that you can move over a hard surface. [intransitive and transitive verb] to move, or make a particular movement on a surface, using skates. MW: [intransitive and transitive verb] to glide along on skates propelled by the alternate action of the legs.	[intransitive verb] To glide over ice upon skates; to use skates as a means of exercise or pastime.	

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English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
skateboard	Transl	NO	Manner	1		Vehicle / Instrument	AS NOUN: a flat narrow board with two small wheels under each end, which a person stands on and moves forward by pushing one foot on the ground. [intransitive verb] TFD: To ride or perform stunts on a skateboard. MW: [intransitive verb] to ride or perform stunts on a skateboard.	[intransitive verb] to ride on a skateboard.	
skedaddle	Transl		Path + Manner	2	away from G	Rate-fast	[intransitive verb] INFORMAL to run away quickly. TFD: To leave hastily; flee. MW: run away, scram; especially : to flee in a panic.	[intransitive verb] In general use: To go away, leave, or depart hurriedly; to run away, 'clear out'.	*mp-walk / mp-run*
ski	Transl	NO	Manner	1		Vehicle / Instrument	[intransitive and transitive verb] to move over snow on skis. TFD: [intransitive and transitive verb] To travel or glide on skis, especially as a sport. MW: [intransitive and transitive verb] to glide on skis in travel or as a sport. to travel or pass over on skis.	[intransitive verb] To travel on skis. [transitive verb] To travel over (a slope, etc.) on skis; to ski at (a place).	
skid	Transl		Manner	1		Contact [between F and G]; Uncontrolled Motion	[intransitive verb] to slide along a surface so that you have no control. TFD: To slide sideways while moving because of loss of traction. To slide without revolving. MW: to slide without rotating (as a wheel held from turning while a vehicle moves onward). To fail to grip the roadway.	[intransitive verb] Of a wheel: To slip or be dragged along without revolving, esp. as the effect of having a skid or brake applied to it. To slip obliquely or sideways, esp. owing to the muddy, wet, or dusty state of the road; to side-slip. Usually said of cycle or motor-car wheels, but also of horse-vehicles or persons. Also, of the vehicle itself.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
skim	Transl		Manner	1		Contact [between F and Ground]: slight contact; Rate-fast	[intransitive and transitive verb] to move quickly just above a surface without touching it. TFD: To move or pass swiftly and lightly over or near a surface; glide. MW: to pass lightly or hastily : glide or skip along, above, or near a surface.	[intransitive verb][intransitive verb] To sail, glide, float, fly, run, etc., with a light and easy motion, on or close to some surface, or through the air. [transitive verb] To move, glide, fly or float, lightly and rapidly over or along (the ground, etc.). To pass over (a surface) with close approach or very slight contact.	
skip	Transl		Manner	1		mp-jump; Characteristic use of lower body (jump after each step); Instrument (rope)	[intransitive verb] to move lightly and quickly, making a small jump after each step. LLA: If someone, especially a child, skips along, they move along with a little jump between their steps. TFD: To move by hopping on one foot and then the other.To leap lightly about. MW: To move or proceed with leaps and bounds or with a skip (= a gait composed of alternating hops and steps)	[intransitive verb] To raise oneself off the ground by a light and graceful movement; to spring or leap lightly and easily, spec. in the exercise of skipping with a rope. To spring or leap lightly in a certain direction or to a certain point; to move or advance by a skip or skips.	*mp-jump*
skitter	Transl		Manner	1		Contact [between F and Ground]: slight contact; Rate-fast	[intransitive verb] (especially of a small animal, bird or insect) to move very quickly and lightly. TFD: To move rapidly along a surface, usually with frequent light contacts or changes of direction. MW: to glide or skip lightly or quickly.	[intransitive verb] To move or run rapidly; to hurry about; to scamper off. To skip or skim along a surface, with occasional rapid contact.	*mp-walk / mp-run*
skulk	Transl		Manner	1		Furtive Motion	[intransitive verb] to hide or move around as if trying not to be seen, usually with bad intention. TFD: To move about stealthily. MW: to move in a stealthy or furtive manner.	[intransitive verb] To move in a stealthy or sneaking fashion, so as to escape notice.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
skydive	Transl		Ground (on air) + Path + Manner	3	Earth-based orientation: downwards	mp-jump; Motion in sports	AS NOUN: a sport in which a person jumps from an aircraft and falls for as long as possible before opening a parachute. TFD: To jump and fall freely from an airplane, performing various maneuvers before pulling the ripcord of a parachute. MW: [intransitive verb] no definition is provided.	[intransitive verb] No definition is provided.	
sledge (UK); sled (US); sleigh	Transl	AM	Manner	1		Vehicle / Instrument	AS NOUN:an object used for travelling over snow and ice which has long narrow strips of wood or metal under it instead of wheels, and which is either a low frame, or (also sleigh) a carriage-like vehicle pulled by horses or dogs; a type of sledge pulled by animals, especially horses or dogs. [intransitive and transitive verb] to ride or travel on snow using a sledge. TFD: [intransitive and transitive verb] To convey or travel on a sledge. MW: [intransitive verb] to travel with a sledge. British : to ride in a sleigh. [transitive verb] to transport on a sledge.	[intransitive verb] To travel in a sledge. [transitive verb] To carry or convey on a sledge. [intransitive verb] To travel in a sledge. [transitive verb] To convey on a sled or sleds. [intransitive verb] To travel or ride in a sleigh.	
sleepwak	Transl		Manner	1		mp-walk; State of the Figure (slept)	[intransitive verb] a person who gets out of bed and walks around while they are sleeping. TFD: To walk or perform other motor acts while asleep; somnambulate. MW: to walk while or as if while asleep.	[intransitive verb] To walk while asleep; to be in a state resembling that of a sleep-walker.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
slide	Transl	AM	Manner	1		Contact [between F and G]: Smooth Motion	[intransitive and transitive verb] to (cause to) move easily and without interruption over a surface. TFD: To move over a surface while maintaining smooth continuous contact. to cause to glide or slip. MW: to move smoothly along a surface : slip. to cause to glide or slip	[intransitive verb]To pass from one place or point to another with a smooth and continuous movement, esp. through the air or water or along a surface. [transitive verb] To cause to move with a smooth, gliding motion; to push over a level surface.	*mp-walk*
slink	Transl		Path + Manner	2	away from G (departure, source)	Furtive Motion	[intransitive verb] to walk away from somewhere quietly so that you are not noticed. TFD: To move in a quiet furtive manner; sneak. MW: to go or move stealthily or furtively.	[intransitive verb] Of persons or animals: To move, go, walk, etc. in a quiet, stealthy, or sneaking manner.	*mp-walk*
slip1 *[slide]*	Transl		Manner	1		Contact [between F and G]: Smooth Motion; Uncontrolled Motion	[intransitive verb] to slide unintentionally. TFD: [intransitive verb] To slide involuntarily and lose one's balance or foothold. [transitive verb] To cause to move in a smooth, easy, or sliding motion. MW: to move with a smooth sliding motion.	[intransitive verb] To slide or glide, esp. on a smooth or slippery surface; to lose one's foothold.	
slip2	Transl		Manner	1		Furtive Motion	TFD: [intransitive verb] To move smoothly, easily, and quietly. To move stealthily; steal. MW: to move quietly and cautiously.	[intransitive verb] To pass or go lightly or quietly; to move quickly and softly, without attracting notice; to glide or steal. Used with various advs. and preps. In some cases the prominent idea is that of escape; more usually it is that of quick, easy motion.	
slither	Transl	AM	Manner	1		Contact [between F and G]: Smooth Motion; Path-shape	[intransitive verb] to move easily and quickly across a surface while twisting or curving. TFD: [intransitive verb] To glide or slide like a reptile. To walk with a sliding or shuffling gait. To slip and slide, as on a loose or uneven surface.	[intransitive verb] To slip, slide, glide, esp. on a loose or broken slope or with a clattering noise. [transitive verb] To make or cause to slide. Of reptiles: To creep, crawl, glide.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
slog	Transl		Manner	1		mp-walk; Forced Motion (Energy-low)	[intransitive verb] to travel or move with difficulty, for example through wet, sticky soil or snow, or when you are very tired. TFD: To walk or progress with a slow heavy pace; plod. MW: To plod heavily : tramp.	[intransitive verb] To walk heavily or doggedly [i.e., very determined to do something, even if it is very difficult].	*Low ratings. No significant difference*
slouch	Self-c / Transl		Manner	1		Posture (Bend)	[intransitive verb] to stand, sit or walk with the shoulders hanging forward and the head bent slightly over so that you look tired and bored. TFD: [intransitive verb] To sit, stand, or walk with an awkward, drooping, excessively relaxed posture. MW: to walk, stand, or sit with a slouch : assume a slouch. to go or move slowly or reluctantly.	[intransitive verb] To move or walk with a slouch or in a loose and stooping attitude. To carry oneself with a slouch or stoop; to droop the head and shoulders.	*Low ratings. No significant difference*
sneak	Transl		Manner	1		Furtive Motion; mp-walk?	[intransitive and transitive verb] to go somewhere secretly, or to take someone or something somewhere secretly. LLA: To walk quietly so that no-one notices you, especially because you are doing something wrong and do not want to be caught. TFD: To go or move in a quiet, stealthy way. MW: to go stealthily or furtively : slink.	[intransitive verb] To move, go, walk, etc., in a stealthy or slinking manner; to creep or steal furtively, as if ashamed or afraid to be seen; to slink, skulk.	*mp-walk*
soar	Transl		Path + Manner	2	Earth-based orientation: upwards	Rate-fast	[intransitive verb] to rise very quickly to a high level; to rise high in the air while flying without moving the wings or using power. TFD: To rise, fly, or glide high and with little apparent effort. To climb swiftly or powerfully. To ascend suddenly above the normal or usual level. MW: to ascend to a higher or more exalted level.	[intransitive verb] Of birds: To fly or mount upwards; to ascend to a towering height; also loosely, to sail or skim at a great height. Occas. with up. Of inanimate objects: To ascend, rise up to a height. [transitive verb] To cause to soar.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
somersault	Self-c		Manner	1		mp-jump; Revolve, Rotate, Spin (turn over)	AS NOUN: a rolling movement or jump, either forwards or backwards, in which you turn over completely, with your body above your head, and finish with your head on top again. An acrobatic stunt in which the body rolls forward or backward in a complete revolution with the knees bent and the feet coming over the head. TFD: [intransitive verb] To execute a somersault. MW: [intransitive verb] no definition is provided.	[intransitive verb] to make or turn a somersault; to turn over and over.	*mp-jump*
somnambulate	Transl		Manner	1		mp-walk; State of the Figure (slept)	[intransitive verb] TFD: To walk or perform another act while asleep or in a sleeplike condition. MW: to walk when asleep.	[intransitive verb] to walk during sleep; [transitive verb], to walk along (a place) while asleep.	
speed	Transl	AM	Manner	1		Rate-fast	[intransitive and transitive verb] to (cause to) move, go or happen fast. TFD: To go, move, or proceed quickly. To cause to go, move, or proceed quickly; hasten. MW: to move, work, or take place faster. to cause to move quickly.	[intransitive verb]To go or move with speed. [transitive verb] To send with speed or haste; to hurry (a person, etc.) out or away; also, to force to go. To give speed to (a course, etc.); to hasten; to cause to be rapid in movement.	*mp-run*
spin	Self-c	AM	Manner	1		Revolve, Rotate, Spin	[intransitive and transitive verb] to (cause to) turn around and around, especially fast. TFD: To rotate rapidly; whirl. To cause to rotate swiftly; twirl. MW: to revolve rapidly : gyrate. to cause to whirl: impart spin to.	[intransitive verb] To revolve or gyrate; to whirl round. [transitive verb] To cause to turn or revolve rapidly; to twirl or whirl.	
spring	Transl		Manner	1		Rate-fast; Sudden movement?	[intransitive verb] to move quickly and suddenly towards a particular place. TFD: To move upward or forward in a single quick motion or a series of such motions; leap. MW: dart, shoot. To make a leap or series of leaps	[intransitive verb] Of persons or animals: To bound or leap. Of things: To change place or position by sudden and rapid movement without contact; to move with a sudden jerk or bound (in later use esp. by resilient force)	*mp-jump*

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
sprint	Transl		Manner	1		mp-run; Rate-fast	[intransitive verb] to run as fast as you can over a short distance, either in a race or because you are in a great hurry to get somewhere. LLA: To run as fast as you can over a short distance, usually in a race. TFD: To move rapidly or at top speed for a brief period, as in running or swimming. MW: to run or go at top speed especially for a short distance.	[intransitive verb] To run, row, etc., at full speed, esp. for a short distance; to race in this manner.	*mp-run*
squat	Self-c		Manner	1		Posture (vertical-downwards)	[intransitive verb] to position yourself close to the ground balancing on the front part of your feet with your legs bent under your body. TFD: To sit in a crouching position with knees bent and the buttocks on or near the heels. MW: to assume or maintain a position in which the body is supported on the feet and the knees are bent so that the buttocks rest on or near the heels.	[reflexive verb] To seat (oneself) upon the hams or haunches; to take one's seat in a crouching attitude or posture. [intransitive verb] Of persons: To sit down with the legs closely drawn up beneath the hams or in front of the body; esp. to sit on the ground in this way or in a crouching attitude. Also jocularly, to sit (down).	
squaredance	Self-c		Manner	1		Dance	AS NOUN: in the US, a traditional dance in which four pairs of dancers dance together. TFD: NO FOUND AS MOTION VERB. MW: [intransitive verb] no definition is provided.	[intransitive verb] No definition is provided.	
stagger	Self-c / Transl		Manner	1		Unsteady Motion	[intransitive verb] to walk or move with a lack of balance as if you are going to fall. LLA: To walk very unsteadily, with your body moving from side to side and almost falling, especially because you are injured, very tired, or drunk. TFD: To move or stand unsteadily, as if under a great weight; totter. MW: to reel from side to side : totter b: to move on unsteadily.	[intransitive vern] Of a person or animal: To sway involuntarily from side to side when trying to stand or walk erect; to totter or reel as if about to fall; to walk with a swaying movement of the body and unsteady and devious steps, as from weakness, giddiness, intoxication, or the carrying of a heavy burden. Often with adv. or phrase indicating the direction of movement.	*mp-walk*

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
stalk1	Transl		Path + Manner	2	after G	Furtive Motion	[transitive verb] to follow an animal or person as closely as possible without being seen or heard, usually in order to catch or kill them. TFD: to follow stealthily or recur constantly and spontaneously to. MW: to pursue quarry or prey stealthily. to pursue by stalking.	[intransitive verb] To go stealthily to, towards (an animal) for the purpose of killing or capturing it (obs.). Hence, to pursue game by the method of stealthy approach, esp. by the use of a stalking-horse or of some device for concealing oneself from the view of the hunted animal.	*mp-walk*
stalk2	Transl		Manner	1		mp-walk; State of Figure (annoyed or proud)	[intransitive verb] to walk in an angry or proud way. TFD: walk stiffly. MW: to walk stiffly or haughtily.	[intransitive verb] To walk with stiff, high, measured steps, like a long-legged bird. Usually with disparaging notion, implying haughtiness, sullenness, indifference to one's surroundings, or the like. [i.e., angry, proud attitude]. [transitive verb] To march proudly through (a country, etc.).	*mp-walk*
stamp	Self-c / Transl		Figure (body part: foot) + Manner	2		Noisy activity; State of Figure (annoyed)?	[intransitive and transitive verb] to put a foot down on the ground hard and quickly, making a loud noise, often to show anger. TFD: To walk with forcible, heavy steps. MW: to strike or thrust the foot forcibly or noisily downward.	[intransitive verb] To bring down the foot heavily.To bring the sole of one's foot suddenly and forcibly down (upon the ground or floor, or some other object), with the object of crushing or beating down something. [intransitive verb] To walk with a heavy, 'pounding' tread; to walk noisily or laboriously, tramp.	
stampede	Transl		Path + Manner	2	away from G (departure, source)	Rate-fast; State of the Figure (frightened)	[intransitive and transitive verb] No definition is provided. TFD: To flee in a headlong rush. MW: to flee headlong in panic.	[transitive verb] To cause a stampede amongst (cattle); to cause a stampede of (a person's) cattle. [intransitive verb] Of a herd of cattle: To become panic-stricken and take to flight. Of a company of persons: To rush with common impulse.	

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English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
step	Transl		Figure (body part: foot) + Manner	2		mp-walk	[intransitive verb] to move by lifting your foot and putting it down in a different place. [intransitive verb] to put your foot on or in something. TFD: To shift or move slightly by taking a step or two. To walk a short distance to a specified place or in a specified direction. To move with the feet in a particular manner. MW: to move by raising the foot and bringing it down elsewhere or by moving each foot in succession. to go on foot.	[intransitive verb] To lift the foot and set it down again on the ground in a new position; to lift and set down the feet alternately in walking; to pace, tread. To move to a new position by extending the foot to a higher or lower level or across an intervening object or space (e.g. in entering or leaving a carriage or boat, ascending or descending stairs)	
stomp	Transl / Self-c		Manner	1		mp-walk; State of Figure (annoyed); Characteristic use of lower body (Steps-heavy)	[intransitive verb] to walk with intentionally heavy steps, especially as a way of showing that you are annoyed. LLA: To walk with heavy steps, making a lot of noise to show that you are angry. TFD: [intransitive verb] To tread or trample heavily or violently. [transitive verb] To tread or trample heavily or violently on. MW: to walk with a loud heavy step usually in anger.	[intransitive verb] = STAMP; [transitive verb] To stamp or trample on (a person, etc.). To tramp or trudge between (a series of places).	*mp-walk*
stoop	Self-c		Manner	1		Posture (vertical-downwards)	[intransitive verb] to bend the top half of the body forward and down. TFD: To bend forward and down from the waist or the middle of the back. To walk or stand, especially habitually, with the head and upper back bent forward. MW: To bend the body or a part of the body forward and downward sometimes simultaneously bending the knees. to stand or walk with a forward inclination of the head, body, or shoulders	[intransitive verb]To bow down, to descend. Of a person: To lower the body by inclining the trunk or the head and shoulders forward, sometimes bending the knee at the same time. Often with down.	

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storm	Transl		Manner	1		State of Figure (annoyed); Violent Motion	[intransitive verb] to enter or leave a place in a way that shows that you are angry. TFD: To move or rush tumultuously, violently, or angrily. MW: to rush about or move impetuously, violently, or angrily.	[intransitive verb] To rush with the violence of a storm.	
stray	Transl		Path	1	away from G (departure, source)		from Anglo-French estraier, from Vulgar Latin *extravagare, from Latin extra- outside + vagari to wander [intransitive verb] to travel along a route that was not originally intended, or to move beyond a limited area. TFD: To move away from a group, deviate from the correct course, or go beyond established limits. MW: to wander accidentally from a fixed or chosen route.	[intransitive verb] To escape from confinement or control, to wander away from a place, one's companions. [intransitive verb] To wander from the direct way, deviate.	
streak	Transl		Manner	1		Rate-fast	[intransitive verb] to move somewhere extremely quickly, usually in a straight line. TFD: To move at high speed; rush. MW: to move swiftly.	[intransitive verb] To go or advance quickly; to go at full speed, to rush. [transitive verb] To cause to move fast or like lightning.	*mp-run*
stretch	Self-c		Manner	1		Posture (unspecified orientation)	[intransitive and transitive verb] to straighten your body or your arms or legs so that they are as long as possible, in order to exercise the joints after you have been in the same place or position for a long time. TFD: To become lengthened, widened, or distended. MW: to become extended in length or breadth or both.	[transitive verb] To prostrate (oneself, one's body); to extend (one's limbs) in a reclining posture; refl. to recline at full length. To extend (the arms) laterally; to expand (the wings), esp. for flight. [reflexive verb] To straighten oneself; to rise to full height (also with up); also, to draw up the body, as from a stooping, cramped, or relaxed posture; to straighten the body and extend the arms, as a manifestation of weariness or langour (chiefly coupled with yawn).	

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stride	Transl		Manner	1		mp-walk; Rate-fast; Characteristic use of lower body (Steps-long)	[intransitive verb] to walk somewhere quickly with long steps. LLA: To walk quickly, taking big steps, in an angry, determined or confident way. TFD: To walk with long steps, especially in a hasty or vigorous way. [transitive verb] To walk with long steps on, along, or over. MW: to move with or as if with long steps.	[intransitive verb] To walk with long or extended steps; to stalk. Often with implication of haste or impetuosity, of exuberant vigour, or of haughtiness or arrogance.	*mp-walk*
stroll	Transl		Manner	1		mp-walk; Leisurely Motion; State of Figure (relaxed)	[intransitive verb] to walk in a slow relaxed manner, especially for pleasure. LLA: To walk in a slow and relaxed way, especially for pleasure. TFD: To go for a leisurely walk. MW: to walk at leisure along or about.	[intransitive verb] To walk or ramble in a careless, haphazard, or leisurely fashion as inclination directs; often simply to take a walk.	
strut	Transl		Manner	1		mp-walk; State of Figure (proud)	[intransitive verb] to walk in a proud way trying to look important. LLA: To walk proudly with your head high, shoulders back, and chest pushed forward in a way that shows you think you are important or impressive.TFD: To walk with pompous bearing; swagger. MW: to walk with a proud gait b: to walk with a pompous and affected air.	[intransitive verb] To walk with an affected air of dignity or importance, stepping stiffly with head erect.	*mp-walk*
stumble	Transl		Manner	1		Obstructed Motion; mp-walk/mp-run	[intransitive verb] to step awkwardly while walking or running and fall or begin to fall. LLA: To walk unsteadily, often hitting things with your feet and almost falling, especially because it is dark, the ground is uneven, or because you are tired or drunk. TFD: To miss one's step in walking or running; trip and almost fall. To proceed unsteadily or falteringly; flounder. MW: to trip in walking or running. to walk unsteadily or clumsily.	[intransitive verb] To miss one's footing, or trip over an obstacle, in walking or running, so as to fall or be in danger of falling.	

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stump	Transl		Manner	1		mp-walk; State of Figure (annoyed); Characteristic use of lower body (Steps-heavy)	[intransitive verb] stomp = to walk with intentionally heavy steps, especially as a way of showing that you are annoyed. TFD: To walk heavily or clumsily. MW: to walk heavily or clumsily.	[intransitive verb] To walk clumsily, heavily, or noisily, as if one had a wooden leg. To knock on the floor in walking.	*mp-walk*
swagger	Transl		Manner	1		mp-walk; State of Figure (proud)	[intransitive verb] to walk, especially with a swinging movement, in a way that shows that you are very confident and think that you are important, or to act in that way. LLA: To walk proudly, swinging your shoulders, in a way that shows too much self confidence. TFD: To walk or conduct oneself with an insolent or arrogant air; strut. MW: to conduct oneself in an arrogant or superciliously pompous manner; especially: to walk with an air of overbearing self-confidence.	[intransitive verb] To behave with an air of superiority, in a blustering, insolent, or defiant manner; now esp. to walk or carry oneself as if among inferiors, with an obtrusively superior or insolent air.	
sway	Self-c		Manner	1		Shake, Swing, Vibrate	[intransitive verb] to move slowly from side to side. TFD: To swing back and forth or to and fro. MW: to swing slowly and rhythmically back and forth from a base or pivot.	[intransitive verb] To move or swing first to one side and then to the other, as a flexible or pivoted object: often amplified by phr., e.g. backwards and forwards, to and fro, from side to side. [transitive verb] To cause to move backward and forward or from side to side	

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sweep	Transl		Manner	1		Contact [between F and G]	[intransitive verb] to move, especially quickly and powerfully. If a road, river, range of mountains, set of steps, etc. sweeps in a particular direction, they follow a particular curved path. [transitive verb] to quickly spread through and influence an area. To travel across all of an area, especially when looking for something. TFD: To move swiftly with strong, steady force. To move swiftly in a lofty manner, as if in a trailing robe. MW: to touch in passing with a swift continuous movement.	[transitive verb] To move swiftly and evenly or with continuous force over or along the surface of. [intransitive verb] To move with a strong or swift even motion; to move along over a surface or region, usu. rapidly, or with violence or destructive effect; sometimes, to come with a sudden attack, to swoop. a. of a person, an animal, a ship (or the like). To move or walk in a stately manner, as with trailing garments.	
swerve	Transl		Path	1	Change direction		[intransitive verb] to change direction, especially suddenly. TFD: o turn aside or be turned aside from a straight course. MW: to turn aside abruptly from a straight line or course : deviate.	[intransitive verb] To turn aside, deviate in movement from the straight or direct course.	
swim	Transl		Manner + Ground (water)	2		mp-swim	[intransitive and transitive verb] to move through water by moving the body or parts of the body. TFD: To move through water by means of the limbs, fins, or tail. MW: to propel oneself in water by natural means (as movements of the limbs, fins, or tail).	[intransitive verb] To move along in or on water by movements of the limbs or other natural means of progression.	

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swing	Self-c	AM	Manner	1		Shake, Swing, Vibrate	[intransitive and transitive verb] to move easily and without interruption backwards and forwards or from one side to the other, especially from a fixed point, or to cause something or someone to do this. TFD: To move back and forth suspended or as if suspended from above. To cause to move back and forth, as on a swing. MW: to move freely to and fro especially in suspension from an overhead support. to cause to move vigorously through a wide arc or circle. to cause to sway to and fro.	[intransitive verb] To move freely backwards and forwards, as a body suspended from a support above; to oscillate below a point of support, as a pendulum or the like. Of a person: To move backwards and forwards through the air upon a suspended rope or a swing. [transitive verb] To cause to oscillate, as a body suspended from a support above; to move or sway (something) to and fro in this or a similar manner.	
swirl	Self-c	AM	Manner	1		Revolve, Rotate, Spin	[intransitive and transitive verb] to (cause to) move quickly with a twisting circular movement. TFD: To move with a twisting or whirling motion; eddy. To cause to move with a twisting or whirling motion. MW: to move with an eddying or whirling motion. To cause to swirl.	[intransitive verb] Of water or of objects borne on water: To move in or upon eddies or little whirlpools. Of other objects: To move rapidly in eddies or in a whirling or circular course. [transitive verb] To give a whirling or eddying motion to; to bring into some position by a whirling motion; to whirl, brandish.	
swoop	Transl		Path + Manner + Ground	3	down towards G	Rate-fast	[intransitive verb] to move very quickly and easily through the air, especially down from a height in order to attack. to make a sudden attack on a place or group of people in order to surround and catch them. TFD: To move in a sudden sweep. To make a rush or an attack with or as if with a sudden sweeping movement. Often used with down. MW: to move with a sweep.	[intransitive verb] To make a rapid sweeping descent through the air upon its prey, as a bird. To come down upon suddenly with a sweeping movement, esp. with the intention of seizing, as a body of troops.	

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tack	Transl		Path	1	Change direction		[intransitive verb] No definition is provided. TFD: To change the direction or course of a vessel. MW: to change to an opposite tack by turning the bow to the wind.	[intransitive verb] To shift the tacks and brace the yards, and turn the ship's head to the wind, so that she shall sail at the same angle to the wind on the other side; to go about in this way.	
tail	Transl		Path+ Manner	2	after G	Furtive Motion	[transitive verb] to follow and watch someone very closely, especially in order to get information secretly.TFD: To follow. MW: to form or move in a straggling line.	[transitive verb] To follow someone closely; spec. to follow secretly as a detective or spy, etc.	
tango	Self-c		Manner	1		Dance	AS NOUN: an energetic dance of South American origin for two people, or the music for this dance. [intransitive verb] TFD: to perform this dance. MW: to dance the tango.	[intransitive verb]To dance the tango.	
tapdance	Self-c		Manner	1		Dance	AS NOUN: a type of dance in which the rhythm is marked by the noise of the dancer's shoes on the floor. TFD: dance and make rhythmic clicking sounds by means of metal plates nailed to the sole of the dance shoes. MW: [intransitive verb] no definition is provided.	[intransitive verb] No definition is provided.	
taxi	Transl	AM	Manner	1		Vehicle / Instrument	AS NOUN: a car with a driver whom you pay to take you somewhere. TFD: [intransitive and transitive verb] To be transported by taxi. To transport by or as if by taxi. MW: [intransitive verb] to ride in a taxicab. [transitive verb] to transport by or as if by taxi.	[intransitive verb] To travel in a taxi. [transitive verb] To convey in a taxi.	
tear	Transl		Manner	1		Rate-fast	[intransitive verb] to move very quickly. LLA: To run very quickly and without really looking where you are going, because you are in a hurry. TFD: To move with heedless speed; rush headlong. MW: to move or act with violence, haste, or force.	[intransitive verb] To move with violence or impetuosity; to rush or 'burst' impetuously or violently. colloq. Sometimes with the notion of a force that would tear its way through obstacles.	

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teeter	Self-c / Transl	AM	Manner	1		Unsteady Motion	[intransitive verb] to appear to be about to fall while moving or standing. TFD: [intransitive and transitive verb] To walk or move unsteadily or unsurely; totter. To cause to teeter or seesaw. MW: to move unsteadily.	[intransitive verb] To see-saw. To move like a see-saw; to sway from side to side; to move unsteadily; esp. of a person or animal, to walk with a swaying motion; to balance oneself unsteadily on alternate feet. [transitive verb] To move (anything) with a see-saw motion.	
throw	Transl	AM	Manner	1		Forced Motion (Energy-high); Rate-fast	[intransitive verb] to (cause to) move/act quickly or carelessly. [intransitive and transitive verb] to send something through the air with force, especially by a sudden movement of the arm. TFD: To cast, fling, or hurl something. To propel through the air with a motion of the hand or arm. To discharge into the air by any means. MW: to fling (oneself) precipitately. to propel through the air by a forward motion of the hand and arm.	[reflexive verb] To fling or cast oneself; to precipitate oneself. [transitive verb] To project (anything) with a force of the nature of a jerk, from the hand or arm, so that it passes through the air or free space; to cast, hurl, fling; spec. to cast by a sudden jerk or straightening of the arm, esp. at the level of or over the shoulder	
thrust	Transl	AM	Path + Manner	2	forwards	Forced Motion (Energy-high)	[intransitive and transitive verb] to push suddenly and strongly. TFD: To force one's way. MW: to push forward.	[intransitive verb] To push or force one's way, as through a crowd; to crowd in; to make one's way or advance as against obstacles; to press onwards or into a place, etc. [transitive verb] To cause (anything, esp. something grasped in the hand) to enter, pierce, or penetrate some thing or place by or as by pushing; to put, drive, or force into some place or position.	
thunder	Transl		Manner	1		Noisy activity	[intransitive verb] to move, making a lot of noise. TFD, MW: NO FOUND AS MOTION VERB.	[intransitive verb] To make a loud resounding noise like thunder; to sound very loudly; to roar. Sometimes connoting violent movement: To rush or fall with great noise and commotion.	

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tiptoe	Transl		Manner	1		mp-walk; Characteristic use of lower body (on tiptoes): Furtive Motion?	[intransitive verb] on tiptoe(s) on your toes with the heel of your foot lifted off the ground. LLA: To walk on your toes because you do not want to make any noise. TFD: To walk or move quietly on one's toes. MW: to stand or raise oneself on tiptoe. To walk or proceed quietly or cautiously on or as if on tiptoe.	[intransitive verb] To raise oneself or stand on tiptoe. To go or walk on tiptoe; to step or trip lightly.	*mp-walk*
tittup	Transl		Manner	1		State of the Figure (proud)	[intransitive verb] TFD: To move in a lively, capering manner; prance. to walk with a lofty proud gait, often in an attempt to impress others; MW: to move in a lively manner often with an exaggerated or affected action.	[intransitive verb] To walk or go with an up-and-down movement; to walk in an affected manner; to mince or prance in one's gait; of a horse or other animal, to canter, gallop easily; also, to prance; hence of a rider, or one driving a vehicle; of a boat, to toss with abrupt jerky movements.	
toboggan	Transl		Manner	1		Vehicle / Instrument	AS NOUN: an object used for sliding over snow and ice which consists of a low frame on which a person or people sit. [intransitive verb] TFD: To coast, ride, or travel on a toboggan. MW: to coast on or as if on a toboggan	[intransitive verb] To ride on a toboggan or sleigh; esp. to 'coast' or slide down a snowy (or other) slope on a toboggan.	
toddle	Transl		Manner	1		mp-walk; Unsteady Motion	[intransitive verb] (especially of a young child) to walk with short steps, trying to keep the body balanced. TFD: To walk with short, unsteady steps. To walk leisurely; stroll. MW: to walk with short tottering steps in the manner of a young child. To take a stroll.	[intransitive verb] To walk or run with short unsteady steps, as a child just beginning to walk, an aged or invalid person; also said of a similar walk or run of any animal.	*mp-walk*
topple	Transl	AM	Cause + Path	2	Earth-based orientation: downwards		[intransitive and transitive verb] to (cause to) lose balance and fall down. TFD: To totter and fall. MW: to fall from or as if from being top-heavy.	[intransitive verb] To fall top foremost, or as if top-heavy; to fall headlong, tumble or pitch over. [intransitive verb] To lean over unsteadily, as if on the point of falling; to overhang threateningly.	

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totter	Self-c / Transl		Manner	1		Unsteady Motion; mp-walk?	[intransitive verb] to walk in a shaky way that looks as if you are about to fall. TFD: To sway as if about to fall. To walk unsteadily or feebly; stagger. MW: to tremble or rock as if about to fall. to move unsteadily.	[intransitive verb] To walk or move with unsteady steps; to go shakily or feebly; to toddle; also, to walk with difficulty; to reel, stagger.	*mp-walk*
tour	Transl		Manner	1		Leisurely Motion	[intransitive and transitive verb] to go on a tour somewhere. TFD: To travel from place to place, especially for pleasure. MW: to make a tour (of).	[intransitive verb] To make a tour or circuitous journey, in which many places are visited, usually without retracing one's steps; to make a prolonged excursion for recreation or business; spec. of an actor, a theatrical company, or the like: to go 'on tour', to travel from town to town fulfilling engagements. [transitive verb] To make the tour or round of, to tour in (a country or district).	
track	Transl		Path + Manner	2	after G	Furtive Motion	[transitive verb] to follow a person or animal by looking for proof that they have been somewhere, or by using electronic equipment. TFD: To follow the tracks of; trail. To follow a course; travel. MW: To follow the tracks or traces of : trail. to search for by following evidence until found.	[transitive verb] To follow up the track or footsteps of; to trace the course or movements of; to pursue by or as by the track left; with down, out, up, to follow up or trace until found or caught.	

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trail	Transl	AM	Path + Manner	2	after G	Furtive Motion?; Contact [between F and G]?	[intransitive and transitive verb] to (allow something to) move slowly along the ground or through the air or water, after someone or something. [transitive verb] to follow the trail of someone or something. TFD: [intransitive verb] To drag or be dragged along, brushing the ground. MW: to walk or proceed draggingly, heavily, or wearily: plod, trudge. To follow a trail. To follow upon the scent or trace of : track. To follow in the footsteps of : pursue. To follow along behind. To lag behind (as a competitor).	[intransitive verb] To follow the trail or track of the game. [transitive verb] To draw behind one; to drag along upon the ground or other surface (esp. something hanging loosely, as a long garment); also, to drag (a person) roughly, to hale; to haul. To carry or convey by drawing or dragging, as in a vehicle or ship.	
traipse	Transl		Manner	1		mp-walk; No aim in motion	[intransitive verb] to walk from one place to another, often feeling tired or bored. LLA: To walk a very long way, especially when you are looking for something or visiting different places, so that you become tired. TFD: To walk or tramp about. MW: to go on foot. to walk or travel about without apparent plan but with or without a purpose.	[intransitive verb] To walk in a trailing or untidy way; e.g. to walk or 'trail' through the mud; to walk with the dress trailing or bedraggled; to walk about aimlessly or needlessly. (Usually said of a woman or child.)	*mp-walk*
tram	Transl	AM	Manner	1		Vehicle / Instrument	AS NOUN: an electric vehicle that transports people, usually in cities, and goes along metal tracks in the road. [transitive verb] TFD: To move or convey in a tram. MW: [transitive verb] to haul in a tram or over a tramway.	[intransitive verb] To travel by a tramway or on a tram-car. [transitive verb] To convey (coal, ore, etc.) by a tram or trams.	
tramp	Transl		Manner	1		mp-walk; Steps-heavy	[intransitive and transitive verb] to walk, especially long distances or with heavy steps. TFD: To walk with a firm, heavy step; trudge. MW: to walk, tread, or step especially heavily.	[intransitive verb] To tread or walk with a firm, heavy, resonant step; to stamp.	*mp-walk*

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trample	Transl		Figure (body part: feet) + Manner	2		mp-walk; Violent Motion	[intransitive and transitive verb] to step heavily on something or someone, causing damage or injury. TFD: To tread heavily or destructively. MW: tramp; especially : to tread heavily so as to bruise, crush, or injure.	[intransitive verb] To tread or walk heavily; to stamp.	
travel	Transl		Manner	1		Leisurely Motion	From Anglo-French travers (as in a travers, de travers across), from Latin transversum (as in in transversum set crosswise) [transitive verb] to move or travel through an area. TFD: To travel or pass across, over, or through. MW: to go or travel across or over. to move or pass along or through.	[intransitive verb] To make a journey; to go from one place to another; to journey.	
traverse	Transl		Path	1	pass/cross G (traversal)		[transitive verb] to move or travel through an area. TFD: To travel or pass across, over, or through. MW: to go or travel across or over. to move or pass along or through.	[transitive verb] To run across or through; to cross.	
tread	Transl		Figure (body part: feet) + Manner	2		mp-walk; Violent Motion	[intransitive and transitive verb] MAINLY UK to put your foot on something or to press something down with your foot. TFD: To go on foot; walk. To set down the foot; step. MW: o step or walk on or over. o beat or press with the feet : trample.	[intransitive verb] To walk, go, pace; to set down the feet in walking; to step. Also said of the foot. To step or walk upon or along; to follow, pursue (a path, track, or road)	
trek	Transl		Manner	1		mp-walk; Forced motion?	[intransitive verb] to walk a long distance, usually over land such as hills, mountains or forests. LLA: Especially British, to walk a very long way especially in the mountains. TFD: To make a slow or arduous journey. To journey on foot, especially to hike through mountainous areas. MW: to make one's way arduously; broadly : journey.	[intransitive verb] To make a journey by ox-wagon; hence, to travel, migrate; also, to go, proceed; to go away, depart (slang). [transitive verb] To cover (ground, a distance) by 'trekking'.	*mp-walk*

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tremble	Self-c		Manner	1		Shake, Swing, Vibrate	[intransitive verb] to shake slightly, usually because you are cold, frightened, or very emotional. TFD:To shake involuntarily, as from excitement or anger; quake.To vibrate or quiver. MW: to shake involuntarily (as with fear or cold) : shiver.	[intransitive verb] Of persons (less commonly of animals), or of the body or a limb: To shake involuntarily as with fear or other emotion, cold, or weakness; to quake, quiver, shiver.	
trip	Transl	AM	Manner	1		Obstructed Motion; mp-walk/mp-run;	[intransitive and transitive verb] to lose your balance after knocking your foot against something when you are walking or running, or to cause someone to do this. TFD: To stumble. MW: to catch the foot against something so as to stumble.	[intransitive verb] To strike the foot against something, so as to hop, stagger, or fall; to stumble over an obstacle; to make a false step. [transitive verb] To cause to stumble or fall by suddenly arresting or catching the foot.	*Low ratings. No significant difference*
trolley	Transl	AM	Manner	1		Vehicle / Instrument	AS NOUN: a small vehicle with two or four wheels that you push or pull to transport large or heavy objects on. US for tram. [intransitive and transitive verb] TFD: To convey (passengers) or travel by trolley. MW: [transitive verb] to convey by a trolley. [intransitive verb] to ride on a trolley.	[transitive verb] to convey by trolley; [intransitive verb] to travel by trolley	
troop	Transl		Manner	1		mp-walk; Motion in file?	[intransitive verb] to walk somewhere in a large group, usually with one person behind another. TFD: To assemble or move in crowds. MW: to move or gather in crowds. to move in large numbers.	[intransitive verb] To march in rank; to walk or pass in order.	*mp-walk*

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
trot	Transl	AM	Manner	1		mp-run; Rate-slow	[intransitive verb] a way in which a four-legged animal moves which is faster than walking, in which a front leg and the back leg on the opposite side move together. LLA: To run fairly slowly, taking short steps. TFD: To go or move at a trot. To proceed rapidly; hurry. [transitive verb]To cause to move at a trot. MW: to ride, drive, or proceed at a trot. to proceed briskly : hurry. [transitive verb] to cause to go at a trot.	[intransitive verb] Of a horse, and occasionally other quadrupeds: To go at the gait called the trot. Also said of a man. [intransitive verb] To go or move quickly; to go briskly or busily; to bustle; to run. [transitive verb] To cause to trot; to lead or ride at the trot.	*mp-run / mp-walk*
truck	Transl	AM				Vehicle / Instrument	[intransitive verb] to transport something somewhere in a truck. TFD: [intransitive and transitive verb] To drive a truck. To transport by truck. To carry goods by truck. MW: [intransitive and transitive verb] to be employed in driving a truck. to transport goods by truck.	[intransitive verb] To drive or take charge of a truck, to act as a truck-driver. [transitive verb] To put on or into a truck; to convey by means of a truck or trucks.	
trudge	Transl		Manner	1		mp-walk; Rate-slow; Forced Motion (Energy-low); Characteristic use of lower body (Steps-heavy)	[intransitive verb] to walk slowly with a lot of effort, especially over a difficult surface or while carrying something heavy. LLA: To walk slowly and with heavy steps, especially because you are tired, it is difficult to walk, or you do not want to go somewhere. TFD: To walk in a laborious, heavy-footed way; plod. MW: o walk or march steadily and usually laboriously.	[intransitive verb] To walk laboriously, wearily, or without spirit, but steadily and persistently	*mp-walk*
trundle	Transl	AM	Manner	1		Revolve, Rotate, Spin	[intransitive and transitive verb](to cause something) to move slowly and unevenly on wheels. TFD: To move along by or as if by rolling or spinning. MW: to progress by revolving. To move on or as if on wheels.	[intransitive verb] To move along on a surface by revolving; to roll. [transitive verb] To cause to roll along upon a surface, as a ball, hoop, or other globular or circular object; to roll, bowl.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
tumble	Transl	AM	Path + Manner	2	Earth-based orientation: downwards	Rate-fast; Uncontrolled Motion	[intransitive verb] to fall quickly and without control. TFD:To topple, as from power or a high position; fall. [transitive verb] To cause to fall; bring down. MW: to fall suddenly and helplessly. [transitive verb] to cause to tumble (as by pushing or toppling).	[intransitive verb] To fall; esp. to fall in a helpless way, as from stumbling or violence; to be precipitated, fall headlong; also said of a stream falling in a cataract. To fall prone, fall to the ground; often const. down, over. Also, to stumble by tripping over an object. [transitive verb] To cause to fall suddenly or violently; to throw or cast down.	
turn1	Self-c	AM	Manner	1		Revolve, Rotate, Spin	[intransitive and transitive verb] to (cause to) move in a circle round a fixed point or line. TFD: To move around an axis or center; rotate or revolve. To cause to move around an axis or center; cause to rotate or revolve. MW: o move around on an axis or through an arc of a circle : rotate. to cause to move around an axis or a center : make rotate or revolve.	[intransitive verb] To move round on an axis or about a centre; to rotate, revolve, whirl, spin, as a wheel; to move partly round in this way, as a door or the like upon hinges, a key, a weathercock, etc. [transitive verb] To cause to move round on an axis or about a centre; to cause to rotate or revolve, as a wheel.	
turn2	Transl	AM	Path	1	Change direction		[intransitive and transitive verb] to (cause to) change the direction in which you are facing or moving. TFD: To change or reverse one's way, course, or direction. To change the direction or course of. MW: to reverse a course or direction. To present by a change in direction or position.	[intransitive verb] To move or shift (by a rotary motion, or through an angle) so as to change one's posture or position; esp. to shift the body (as on an axis) from side to side; to twist or writhe about.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
twine	Self-c	AM	Manner	1		Revolve, Rotate, Spin (wrap around, turn around)	[intransitive and transitive verb] to wrap round an object several times. TFD: To become twisted, interlaced, or interwoven. To go in a winding course; twist about. MW: to coil about a support. to stretch or move in a sinuous manner : meander. To twist together. to form by twisting : weave	[intransitive verb] To wind or twist (about, over, or round something); almost always of a plant: to grow in a twisting or spiral manner; spec. to become twisted or wreathed together in growing; to grow in spiral convolutions. [transitive verb] To turn (something) about, away, round, etc.; to twist or wring. To cause (one thing) to encircle or embrace another; to twist, wreathe, clasp, or wrap (a thing) about or around another.	
twirl	Self-c	AM	Manner	1		Revolve, Rotate, Spin (turn around)	[intransitive and transitive verb] to (cause to) give a sudden quick turn or set of turns in a circle. TFD: o move or spin around rapidly, suddenly, or repeatedly. To rotate or revolve briskly; swing in a circle; spin. MW: to revolve rapidly. to cause to rotate rapidly.	[intransitive verb] To rotate rapidly, to spin; to be whirled round or about; also to turn round quickly so as to face or point the other way; also fig. of the mind or head: to be in a whirl, be confused or giddy. [transitive verb] To cause to rotate or spin; to turn (an object) round rapidly.	
twist1	Self-c	AM	Manner	1		Posture (Bend, Twist, Curve)	[intransitive and transitive verb] to turn something, especially repeatedly, or to turn or wrap one thing around another. TFD: To be or become twisted. To rotate or revolve. MW: to turn or change shape under torsion.	[intransitive verb and reflexive] To pass or move in a tortuous manner; to coil or twine about or round; to penetrate into something with a tortuous movement or action. To form into a spiral; to bend, curve, or coil spirally. [transitive verb] To wind or coil (a thread or the like) on or round something; to attach in this way; to encircle (an object) with or as with a thread, etc.; to entwine in something else.	
twist2	Self-c		Manner	1		Dance	TFD, MW: to dance the twist.		

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
vault	Transl		Manner	1		mp-jump; Use of one's hands or of an instrument	[intransitive and transitive verb] to jump over something by first putting your hands on it or by using a pole. LLA: To jump over something, using your hands to help you. TFD: To jump across or leap over (an obstacle). MW: To leap vigorously; especially : to execute a leap using the hands or a pole.	[intransitive verb] To spring or leap; spec. to leap with the assistance of the hand resting on the thing to be surmounted, or with the aid of a pole. [transitive verb] To get over, surmount, by vaulting.	*mp-jump*
vibrate	Self-c	AM	Manner	1		Shake, swing vibrate	[intransitive and transitive verb] to shake slightly and quickly, or to cause something to do this, in a way that is felt rather than seen or heard. TFD: To move back and forth or to and fro, especially rhythmically and rapidly. To shake or move with or as if with a slight quivering or trembling motion.To cause to tremble or quiver. MW: To move to and fro or from side to side : oscillate. to swing or move to and fro.	[intransitive verb] To move or swing backwards and forwards, or upwards and downwards, with some degree of rapidity; to quiver, shake, or tremble. [transitive verb] To give a vibratory motion to (something); to cause to move to and fro or up and down, esp. with a quick motion; to put in vibration.	
waddle	Transl		Manner	1		mp-walk; Swinging Motion	[intransitive verb] (usually of a person or animal with short legs and a fat body) to walk with short steps, swinging the body from one side to the other. TFD: To walk heavily and clumsily with a pronounced sway. MW: to walk with short steps swinging the forepart of the body from side to side. to move clumsily in a manner suggesting a waddle (=an awkward clumsy swaying gait).	[intransitive verb] To walk with short steps, swaying alternately from one leg to the other, as is done by a stout short-legged person. said of animals; esp. of ducks or geese.	*mp-walk*

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
wade	Transl		Ground (water) + Manner	2		mp-walk; Forced Motion (Energy-low)	[intransitive and transitive verb] to walk through water with difficulty because of the pressure of the water against your legs. LLA: To walk through deep water. TFD: To walk in or through water or something else that similarly impedes normal movement. MW: to step in or through a medium (as water) offering more resistance than air.	[intransitive verb] To walk through water or any liquid or soft substance which impedes motion. Formerly often, to pass over a river, etc., on foot (now rare). [transitive verb] To walk through (water, etc.).	*mp-walk*
waft	Transl	AM	Ground (air) + Manner	2		Smooth Motion	[intransitive and transitive verb] to (cause to) move gently through the air. TFD: To float easily and gently, as on the air; drift. to cause to go gently and smoothly through the air or over water. MW: to move or go lightly on or as if on a buoyant medium. to cause to move or go lightly by or as if by the impulse of wind or waves.	[intransitive verb] [intransitive verb] To pass through the air or through space; to float upon, come or go with the wind or breeze. [transitive verb] Of the wind: To propel (a vessel) or convey (a navigator or passenger) safely. To carry (something) through the air or through space.	
wag	Self-c	AM	Manner	1		Shake, Swing, Vibrate	[intransitive and transitive verb] (especially of a tail or finger) to move from side to side or up and down, especially quickly and repeatedly, or to cause this to happen. TFD: To move briskly and repeatedly from side to side, to and fro, or up and down.To move (a body part) rapidly from side to side or up and down, as in playfulness, agreement, admonition, or chatter. MW: to move to and fro or up and down especially with quick jerky motions. o swing to and fro or up and down especially with quick jerky motions. switch <a dog wagging its tail>; specifically : to nod (the head) or shake (a finger) at (as in assent or mild reproof).	Intransitive uses. To be in motion or activity; to stir, move. Now colloq. (chiefly in negative context), to stir, move one's limbs. To oscillate, shake, or sway alternately in opposite directions, as something working on a pivot, fitting loosely in a socket, or the like. Of a boat or ship: To rock. Of a limb, the head or tail, etc.: To be moved briskly from side to side. [transitive verb] To move (a limb or part of the body attached by a joint) to and fro, up and down, or from side to side: usually implying rapid and repeated movement.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
walk	Transl		Manner	1		mp-walk	[intransitive and transitive verb] to move along by putting one foot in front of the other, allowing each foot to touch the ground before lifting the next. TFD: To move over a surface by taking steps with the feet at a pace slower than a run. To go or travel on foot. MW: To move along on foot : advance by steps.	[intransitive verb] To journey, move about, esp. on foot. To go from place to place; to journey, wander.	
waltz	Self-c		Manner	1		Dance	AS NOUN: a formal dance in which two people holding each other move around a large room, turning as they go and repeating a movement of three steps, or a piece of music with three beats in a bar written for this style of dancing. [intransitive verb] to dance a waltz. TFD: To dance the waltz. MW: to dance a waltz.	[intransitive verb] To dance a waltz. Also, to be addicted to, or practised in, the waltz; to dance the waltz in a specified manner.	
wander	Transl		Manner	1		mp-walk; No aim in Motion	[intransitive and transitive verb] to walk around slowly in a relaxed way or without any clear purpose or direction. LLA: To walk around with no particular aim and in no particular direction, especially in a place you do not know or when you are lost. TFD:To move about without a definite destination or purpose. MW: to move about without a fixed course, aim, or goal. to go idly about : ramble.	[intransitive verb] Of persons or animals: To move hither and thither without fixed course or certain aim; to be (in motion) without control or direction; to roam, ramble, go idly or restlessly about; to have no fixed abode or station. [transitive verb] To roam over, in, through (a place); to traverse in wandering.	*mp-walk*

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
wave	Self-c	AM	Manner	1		Shake, swing, vibrate	[intransitive and transitive verb] to move from side to side, or to make something move like this while holding it in the hand. [intransitive and transitive verb] to raise your hand and move it from side to side as a way of greeting someone, telling them to do something or adding emphasis to an expression. TFD:To move freely back and forth or up and down in the air, as branches in the wind. To cause to move back and forth or up and down, either once or repeatedly. MW: to motion with the hands or with something held in them in signal or salute. to float, play, or shake in an air current : move loosely to and fro. to swing (something) back and forth or up and down.	[intransitive verb] To move to and fro or up and down. [transitive verb] To move through the air with a sweeping gesture (the uplifted or extended arm or hand, or something held in the hand by one extremity, e.g. a wand, a hat, or something that flutters in the breeze, as a flag, a handkerchief), often as a sign of greeting or farewell, or as an expression of exultation; usually implying repeated movements to and fro or up and down.	
wheel	Transl	AM	Manner	1		Vehicle / Instrument → Revolve, Rotate, Spin	[transitive verb] to push an object that has wheels so that it moves in a particular direction. [intransitive and transitive verb] TFD: To roll or move on or as if on wheels or a wheel. To roll, move, or transport on wheels or a wheel. MW: to turn on or as if on an axis : revolve. to travel on or as if on wheels or in a wheeled vehicle. o cause to turn on or as if on an axis : rotate. to convey or move on or as if on wheels or in a wheeled vehicle.	To move like a wheel (and connected senses). [intransitive verb] To turn or revolve about an axis or centre, like a wheel on its axle; to rotate; to whirl. [transitive verb] To turn (something) on or as on a wheel; to cause to revolve about an axis; to rotate; to cause to move in a circle or cycle.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
whirl	Self-c	AM	Manner	1		Revolve, Rotate, Spin	[intransitive and transitive verb] to (cause something to) spin round. TFD: To revolve rapidly about a center or an axis. [transitive verb] To cause to rotate or turn rapidly. MW: to move in a circle or similar curve especially with force or speed. To turn on or around an axis like a wheel. [transitive verb] to drive, impel, or convey with or as if with a rotary motion. To cause to turn usually rapidly on or around an axis	[intransitive verb] To move in a circle or similar curve, to circle, circulate; more vaguely, to move about in various directions, esp. with rapidity or force; to go (wander, fly, etc.) about; to be in commotion. To turn, esp. swiftly, around an axis, like a wheel; to revolve or rotate (rapidly); to spin. [transitive verb] To cause to rotate or revolve, esp. swiftly or forcibly; to move (something) around an axis, or in a circle or the like: with various shades of meaning.	
whisk	Transl	AM	Manner	1		Rate-fast	TFD: [intransitive verb] To move lightly, nimbly, and rapidly. [transitive verb] To move or cause to move with quick light sweeping motions. MW: [intransitive verb] to move nimbly and quickly. [transitive verb] to move or convey briskly.	[intransitive verb] To move with a light rapid sweeping motion. To rush or dart nimbly; to move about or travel swiftly or briskly. [transitive motion] To move (something) about, away, back, etc. with a light sweeping motion.	*mp-run*
whiz (z)	Transl		Manner	1		Rate-fast; Noisy Activity	[intransitive verb] to move or do something very fast. TFD: [intransitive verb] To make a whirring or hissing sound, as of an object speeding through air. To move swiftly with or as if with such a sound; rush. MW: [intransitive verb] to hum, whir, or hiss like a speeding object (as an arrow or ball) passing through air. To fly or move swiftly especially with a whiz.	[intransitive verb] To make a sound as of a body rushing through the air. To move swiftly with or as with such a sound. [transitive verb] To cause to whizz; to hurl, shoot, or convey swiftly with a whizz	*mp-run*

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
wiggle	Self-c	AM	Manner	1		Shake, Swing, Vibrate	[intransitive and transitive verb] to (cause to) move up and down and/or from side to side with small quick movements. TFD: To move back and forth with quick irregular motions. o cause to move back and forth with quick irregular motions. MW: o move to and fro with quick jerky or shaking motions. To cause to wiggle.	[intransitive verb] To move to and fro or from side to side irregularly and lightly, to waggle; to walk with such a movement, to stagger, reel, also to waddle (now dial.); to go or move sinuously, to wriggle. [transitive verb] To move (something) in this way;	
wind	Self-c	AM	Manner	1		Posture (Bend, Twist, Curve)	[intransitive and transitive verb] to turn or cause something to turn. TFD: [intransitive verb] To move in or have a curving or twisting course. To move in or have a spiral or circular course. [transitive verb] To wrap (something) around a center or another object once or repeatedly. To wrap or encircle (an object) in a series of coils; entwine. MW: to have a curving course or shape.	[intransitive verb] To take or have a bent form. [transitive verb] To turn; to cause to move in a curve.	
wobble	Self-c	AM	Manner	1		Shake, Swing, Vibrate	[intransitive and transitive verb] to (cause something to) shake or move from side to side in a way that shows a lack of balance. TFD: To move or rotate with an uneven or rocking motion or unsteadily from side to side. To tremble or quaver. To cause to wobble. MW: to move or proceed with an irregular rocking or staggering motion or unsteadily and clumsily from side to side b: tremble, quaver. To cause to wobble.	[intransitive verb] Of a person or animal: To move from side to side unsteadily or with uncertain direction. [transitive verb] To cause to move unsteadily from side to side.	

English Motion verb	Motion	AM	Semantic components	#	Path Details	Manner Details	Dictionary Definition (CALD[1], The Free Dictionary, MW, LLA)	Dictionary Definition (OED)	Motor pattern Rating Study
wriggle	Self-c		Manner	1		Posture (Bend, Twist, Curve)	[intransitive and transitive verb] to twist your body, or move part of your body, with small, quick movements. TFD: To turn or twist the body with sinuous writhing motions; squirm. MW: to move the body or a bodily part to and fro with short writhing motions like a worm to move or advance by twisting and turning.	[intransitive verb] To twist or turn the body about with short writhing movements; to move sinuously; to writhe, squirm, wiggle. [transitive verb] To cause to writhe, twist, or bend tortuously; to move or turn writhingly or with quick jerks.	
yacht	Transl	NO	Manner	1		Vehicle / Instrument	AS NOUN: a boat with sails and sometimes an engine, used for either racing or travelling on for pleasure. [intransitive] TFD: To sail, cruise, or race in a yacht. MW: [intransitive verb] to race or cruise in a yacht.	[intransitive verb] To make a trip in a yacht.	
zigzag	Self-c		Manner	1		Path-shape	[intransitive verb] to make a movement or shape like a zigzag. TFD: To move in or form a zigzag. [transitive verb] To cause to move in or form a zigzag. MW: to lie in, proceed along, or consist of a zigzag course.	[intransitive verb] To go or move in a zigzag course; to have a zigzag course or direction	
zoom	Transl		Manner	1		Rate-fast; Noisy Activity	[intransitive verb] to move very quickly. TFD: To make a continuous low-pitched buzzing or humming sound.To move while making such a sound. MW: to move with a loud low hum or buzz. To go speedily.	[intransitive verb] To make a continuous low-pitched humming or buzzing sound; to travel or move (as if) with a 'zooming' sound; to move at speed, to hurry. Also loosely, to go hastily.	*mp-run*

APPENDIX 2

MOTION VERBS IN SPANISH

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
abalanzarse *[to dash (over) to]*	Transl		Path + Manner	2	to/towards G (arrival, endpoint)	Forced Motion (Energy-high)	(«a, hacia, sobre») [pronominal verb] Dirigirse alguien o algo violentamente hacia un sitio. Arrojarse, echarse, lanzarse, precipitarse.	[pronominal verb] Lanzarse, arrojarse en dirección a alguien o algo.	
abandonar *[to abandon]*	Transl		Path	1	away from G (departure, source)		del fr. «abandonner», del germ. «bann», orden de castigo;[transitive verb] Marcharse de cierto sitio	[transitive verb] Dejar un lugar, apartarse de él.	
abordar *[to bord in attack; to approach]*	Transl		Path	1	to/towards G (arrival, endpoint)		(de «a-2» y «bordo») (de «borde1», del frances *bord*) [transitive and intransitive verb] Acercarse un barco a otro hasta tocarlo, intencionadamente o por accidente. [transitive verb] Dirigirse a alguien para hablarle de un asunto o pedirle algo.	[transitive verb] Dicho de una embarcación: Llegar a otra, chocar o tocar con ella. U. t. c. Intr. [i.e., also used as intransitive verb]. Acercarse a alguien para hacerle una pregunta, iniciar un diálogo o tratar algún asunto. [intransitive and transitive verb] Tomar puerto, llegar a una costa, isla, etc.	
acceder *[to gain access into]*	Transl		Path	1	into G		del lat. «accedere», acercarse; [intransitive verb] («a») Tener acceso a un lugar	[intransitive verb] Entrar en un lugar o pasar a él.	
acechar *[to stalk]*	Transl		Path + Manner	2	after G	Furtive Motion	del lat. «assectari», perseguir [transitive verb] Observar cautelosamente; seguir los pasos	[transitive verb] Observar, aguardar cautelosamente con algún propósito.	*mp-walk*
acelerar *[to speed up; to accelerate]*	Transl		Manner	1		Rate-increase	del lat. «accelerare» [transitive verb] Aumentar gradualmente la velocidad de un movimiento o de una acción cualquiera	[transitive verb] Dar mayor velocidad, aumentar la velocidad.	*mp-run*
acercar (se) *[to (cause to) move closer to]*	Transl	AM	Path	1	closer to G		[transitive verb] («a») Poner una cosa cerca o más cerca de quien habla o de algo que se expresa. Aproximar. (inf.; «a») Ir un lugar para hacer cierta cosa. (inf.; «a») Dirigirse hacia una persona	De a-1 y cerca2. Del lat. Circa. [transitive verb and pronominal verb] Poner cerca o a menor distancia de lugar o tiempo.	
acompañar *[to accompany; to go with someone]*	Transl		Figure + CO-MOTION	2			de «a-2» y «compaña» («a») [transitive verb]; Ir con alguien.	[transitive verb] Estar o ir en compañía de otra u otras personas. U. t. c. prnl. [i.e., also used as pronominal verb]	*mp-walk*

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
acostar (se) *[to lay down; to lie down]*	Self-c	AM	Manner	1		Posture (horizontal)	[transitive verb] «a-2» y «costa1» Poner a alguien tumbado, para que repose; [pronominal verb] Ponerse con el cuerpo descansando en posición horizontal. Echarse	[transitive verb] Echar o tender a alguien para que duerma o descanse, y con especialidad en la cama. U. t. c. prn. [i.e., also used as pronominal verb]	
acudir *[to go to a specific place]*	Transl		Path	1	to/towards G (arrival, endpoint)		(de «recudir», con influencia de «acorrer») (del lat. «recutere») (del lat. «accurrere», acudir) [intransitive verb] («a») Ir alguien a cierto sitio donde es esperado o llamado o tiene que hacer	[intransitive verb] Dicho de una persona: Ir al sitio adonde le conviene o es llamada.	
acurrucarse *[to curl up]*	Self-c		Manner	1		Posture (Bend, Roll)	de «a-2» y el lat. «corrugare», arrugar?) [pronominal verb] Aplicado a personas, ponerse doblado y encogido, ocupando el menos espacio posible, para esconderse, para librarse del frío.	[pronominal verb] Encogerse para resguardarse del frío o con otro objeto.	
adelantar (se) *[to (cause to) move forwards]*	Transl	AM	Path	1	forwards		[intransitive verb and pronominal verb] («a, en») Ir hacia delante; [transitive verb] Llevar o mover una cosa hacia delante; Pasar delante de otro en una carrera o en otra cosa.	[transitive verb] Mover o llevar hacia adelante. U. t. c. prn. [i.e., also used as pronominal verb]	
adentrarse *[to go into the interior part of]*	Transl		Path	1	into G		[pronominal verb] (de «adentro») Ir hacia la parte más interna o más oculta de algo.	[pronominal verb] Penetrar en lo interior de algo. Pasar por dentro.	
agachar (se) *[to (cause to) crouch]*	Self-c	AM	Manner	1		Posture (vertical-downwards)	[transitive verb] o abs. Inclinar hacia abajo la cabeza o la parte superior del cuerpo. Bajar; [pronominal verb] Inclinar hacia abajo la parte superior del cuerpo, por ejemplo para coger algo del suelo. Bajarse, inclinarse. A veces, encogiéndose al mismo tiempo.	[transitive verb] Inclinar o bajar alguna parte del cuerpo, y especialmente la cabeza. U. t. c. [i.e., also used as intransitive verb and pronominal verb] Encogerse, doblando mucho el cuerpo hacia la tierra.	
agazaparse *[to crouch, to hide oneself]*	Self-c		Manner	1		Posture (vertical-downwards)	[pronominal verb] Encogerse y pegarse al suelo, o ponerse detrás de algo, para ocultarse.	[pronominal verb] Esconderse, ocultarse, estar al acecho.	

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Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
agitar(se) *[to (cause to) shake, to move about]*	Self-c	AM	Manner	1		Shake, Swing, Vibrate	[transitive verb and pronominal verb] del lat. «agitare», hacer, mover; Mover[se] algo repetidamente a un lado y a otro	[transitive verb and pronominal verb] Mover con frecuencia y violentamente.	
alcanzar *[to reach]*	Transl		Path	1	to/toward G (arrival, endpoint)		[transitive verb] del sup. lat. «incalciare», con cambio de prefijo. Llegar al punto en que está algo o alguien que va delante en una marcha o progreso hacia cierta cosa.	[transitive verb] Llegar a juntarse con alguien o algo que va delante. [intransitive verb] Llegar hasta cierto punto o término.	
alejar (se) *[to (cause to) move far away from]*	Transl	AM	Path	1	away from G (departure, source)		[pronominal verb] («de») Irse alguien o algo lejos del sitio que se considera.	[transitive verb and pronominal verb] Distanciar, llevar una cosa o a una persona lejos o más lejos.	
aletear *[to flap, to flutter, to wriggle]*	Self-c		Figure (body part: wings, fins)	1			[intransitive verb] Mover repetidas veces las alas como para echarse a volar, o las aletas.	[intransitive verb] Dicho de un ave: Mover frecuentemente las alas sin echar a volar. Dicho de un pez: Mover frecuentemente las aletas cuando se lo saca del agua.	
aligerar *[to quicken, to hurry up]*	Transl		Manner	1		Rate-increase	[intransitive verb] Hacer algo más rápido. Acelerar, apresurar. (inf.) En lenguaje informal se emplea también como intransitivo: 'Si no aligeras, llegarás tarde'.	[intransitive verb] Abreviar, acelerar. U. t. c. prn [i.e., also used as pronominal verb]	*mp-run*
alzar (se) *[to put up, to lift up; to rise]*	Self-c	AM	Manner	1		Posture (vertical-upwards)	[transitive verb] del sup. lat. «altiare», de «altus», alto; Poner vertical algo que estaba tumbado. [pronominal verb] Ponerse en pie cuando se está sentado.	[transitive verb] levantar (mover hacia arriba). [pronominal verb] Levantarse.	
ambular *[to wander about]*	Transl		Manner	1		mp-walk; No aim in Motion	[intransitive verb] (del lat. «ambulare», pasear) Ir continuamente de un sitio a otro.	[intransitive verb] Poco usado andar, ir de una parte a otra	*mp-walk*
anadear *[to walk like a duck; to duck walk]*	Transl		Manner	1		mp-walk; Animal-like → Swinwing	[intransitive verb] Andar una persona con movimientos semejantes a los del pato.	[intransitive verb] Andar una persona o un animal moviendo mucho las caderas.	*mp-walk*

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
andar *[to walk]*	Transl		Manner	1		mp-walk	[intransitive verb] andar1 (del sup. rom. «amlare», del lat. «ambulare») [intransitive verb] Moverse de un lado a otro dando pasos. Caminar, marchar.	[intransitive verb] Dicho de un ser animado: Ir de un lugar a otro dando pasos. U. t. c. prn [i.e., also used as pronominal verb]	*Hyperonym*
apartar (se) *[to (cause to) move away from]*	Transl	AM	Path	1	away from G (departure, source)		[transitive and pronominal verb] Alejar[se] o separar[se] una cosa de otras o de cierto sitio.	[transitive verb] Quitar a alguien o algo del lugar donde estaba, para dejarlo desocupado. U. t. c. prn [i.e., also used as pronominal verb]	
apisonar *[to put one's feet down on the ground repeatedly; to roll flat]*	Self-c		Manner	1		Iterative Motion	[transitive verb] Pisar reiteradamente algo, particularmente la tierra, para apretarlo y alisarlo.	[transitive verb] Apretar o allanar tierra, grava, etc., por medio de un pisón o una apisonadora.	
apresurarse *[to hurry up]*	Transl		Manner	1		Rate-increase	[pronominal verb] de «a-2» y «presura» Hacer algo con prisa	[transitive verb] Dar prisa, acelerar. U. t. c. prn [i.e., also used as pronominal verb]	*mp-run*
aproximar (se) *[to (cause to) move closer to]*	Transl	AM	Path	1	closer to G		[transitive verb and pronominal verb] de «a-2» [(del lat. «ad-»)] y «próximo» (del lat. «próximus») ; Poner[se] una cosa cerca o más cerca del que habla o de algo que se expresa	[transitive verb] Arrimar, acercar. U. t. c. prn [i.e., also used as pronominal verb]	
arquear (se) *[to (cause to) bend (oneself)]*	Self-c	AM	Manner	1		Posture (Bend, Twist, Curve)	[transitive verb] Dar a una cosa forma de arco. Combar, curvar, doblar, enarcar, encorvar. [pronominal verb] Tomar forma de arco o curva.	[transitive verb] Dar forma de arco. U. t. c. prn [i.e., also used as pronominal verb]	
arrastrar (se) *[to drag something; to drag oneself, to crawl]*	Transl	AM	Manner	1		Contact [between F and G]; Body close to the Ground	[transitive] de «a-2» y «rastrar» Mover una cosa de modo que roza contra el suelo u otra superficie. [pronominal verb] Moverse como los gusanos o los reptiles, con el cuerpo tocando el suelo. Reptar. Moverse por el suelo o estar tirado en el suelo.	[transitive verb] Llevar a alguien o algo por el suelo, tirando de él o de ello. [intransitive verb] Dicho de una cosa: Ir rasando el suelo y como barriéndolo, o pender hasta tocar el suelo.	

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
arribar *[(of a ship) to reach port; to arrive]*	Transl		Path	1	to/towards G (arrival, endpoint)		[intransitive verb] Del lat. arripare, de ripa, orilla. Mar. Llegar un barco al puerto de su destino o refugiarse en un puerto. Llegar.	[intransitive verb] Del lat. arripare, de ripa, orilla. Llegar la nave a un puerto.	
arrimar (se) *[to (cause to) move closer to]*	Transl	AM	Path	1	closer to G		[transitive verb and pronominal verb] («a») Poner[se] una cosa cerca o más cerca. Acercar[se].	[transitive verb] Acercar o poner algo junto a otra cosa. U. t. c. prn [i.e., also used as pronominal verb]	
arrodillar (se) *[to (cause to) kneel down]*	Self-c	AM	Manner	1		Posture (vertical-downwards)	[pronominal verb] Ponerse con las piernas dobladas, sosteniéndose sobre las rodillas, por ejemplo para orar.	[transitive verb] Hacer que alguien hinque la rodilla o ambas rodillas. [intransitive verb] Ponerse de rodillas. U. m. c. prn [most commonly used as pronominal verb]	
arrojar (se) *[to throw; to throw oneself]*	Transl	AM	Manner	1		Forced Motion (Energy-high)	[transitive verb] Dejar caer algo intencionadamente desde sitio alto, impulsándolo o sin impulsarlo. [pronominal verb] Lanzarse, precipitarse, tirarse. Dirigirse brusca y violentamente sobre algo o alguien.	[transitive verb] Impeler con violencia una cosa, de modo que recorra una distancia, movida del impulso que ha recibido. [pronominal verb] Precipitarse, dejarse ir con violencia. Ir violentamente hacia alguien o algo hasta llegar a él o ello.	
ascender *[to ascend]*	Transl	AM	Path	1	Earth-based orientation: upwards		(del lat. «ascendere») [intransitive verb] Ir hacia arriba. Subir.	[intransitive verb] Subir de un sitio a otro más alto.	
asentar (se) *[to (cause to) sit down]*	Self-c	AM	Manner	1		Posture (vertical-downwards)	[transitive verb] Sentar a alguien en un sitio. [pronominal verb] Sentarse una persona.	[transitive and pronominal verb] De a-1 y sentar. Sentar en silla, banco, etc.	
atajar *[to go somewhere by taking a short cut]*	Transl		Ground (short cut)	1			(de «a-2» y «tajar» (del lat. «taliāre», cortar)) [intransitive verb] Hacer más corto el camino yendo por un atajo.	[intransitive verb] Ir o tomar por el atajo.	

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
aterrizar *[to land]*	Transl		Path + Ground (land)	2	down onto G (arrival, endpoint)		[intransitive verb] Posarse en tierra un avión u otro aparato de navegación aérea; puede también hacer de sujeto «aviador, piloto», etc. Caer al suelo.	[intransitive verb] Dicho de un avión o de un artefacto volador cualquiera: Posarse tras una maniobra de descenso, sobre tierra firme o sobre cualquier pista o superficie que sirva a tal fin. [intransitive verb] Dicho de un piloto, de un pasajero, de un paracaidista, etc.: Llegar a tierra.	
atracar *[(of a ship) to reach port]*	Transl		Path	1	to/toward G (arrival, endpoint)		del ár. «atraqqà», ascender [intransitive verb] Arrimar una embarcación a la costa o a otra embarcación. Arribar. Llegar a tierra una embarcación.	Del ár. at-taraqqa, la acción de anclar la nave. [transitive verb] Mar. Arrimar unas embarcaciones a otras, o a tierra. U. t. c. intr. [i.e., also used as intransitive verb] Acercar, arrimar.	
atravesar *[to cross, to go through]*	Transl		Path	1	pass/cross G (traversal)		de «a-2» y «través» (del lat. «transversus») [transitive verb] Pasar de un lado al opuesto de una cosa.	[transitive verb] Pasar cruzando de una parte a otra.	
atropellar *[to run over]*	Transl		Manner + CONCURRENT RESULT	2		Vehicle / Instrument	de «a-2» y «tropel» [transitive verb] Alcanzar una caballería, un vehículo u otra cosa en movimiento a alguien o algo y pasarle por encima o arrastrarlo destrozándolo o causándole daño.	[transitive verb] Pasar precipitadamente por encima de alguien. Dicho de un vehículo: Alcanzar violentamente a personas o animales, chocando con ellos y ocasionándoles, por lo general, daños.	
avanzar *[to move forwards]*	Transl		Path	1	forwards		del sup. lat. «abantiare», de «ab ante» [intransitive verb] («a, hacia, hasta») Ir hacia delante. Adelantar, progresar.	[intransitive verb] Dicho especialmente de las tropas: Ir hacia adelante. U. t. c. prn [i.e., also used as pronominal verb]. [transitive verb] Adelantar, mover o prolongar hacia adelante.	
bailar *[to dance]*	Self-c		Manner	1		Dance	del lat. «baiulare», mecer? [transitive verb] Mover el cuerpo y los miembros con ritmo, generalmente siguiendo el compás de una música. Danzar.	[intransitive verb] Ejecutar movimientos acompasados con el cuerpo, brazos y pies. U. t. c. tr [i.e., also used as transitive verb] Bailar una polca	
bailotear *[to dance with little attention or in a careless way]*	Self-c		Manner	1		Dance	[intransitive verb] Bailar de cualquier manera, con poca atención.	[intransitive verb] Bailar mucho, y en especial cuando se hace sin gracia ni formalidad.	

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
bajar *[to (cause to) go down]*	Transl	AM	Path	1	Earth-based orientation: downwards; down from/to G		de bajo, lat. bassus. [intransitive verb and pronominal verb] («a, de, hacia, por») Ir, en sentido material o inmaterial, de un sitio o posición a otros más bajos. [transitive verb] Poner una cosa baja o más baja de lo que estaba, o llevar una cosa de un sitio a otro más bajo.	De bajo. Del lat. bassus. [intransitive verb] Ir desde un lugar a otro que esté más bajo. U. t. c. prn [i.e., also used as pronominal verb]. [transitive verb] Poner algo en lugar inferior a aquel en que estaba.	
balancear (se) *[to (cause to) to swing]*	Self-c	AM	Manner	1		Shake, Swing, Vibrate	del antig. «balanzar», de «balanza») [pronominal verb and no frequently intransitive verb] Moverse un cuerpo inclinándose de un lado a otro. [transitive verb and pronominal verb] Mover[se] una cosa colgante u oscilante de un lado a otro.	[intransitive verb] Dicho especialmente de una nave: Dar o hacer balances. U. t. c. tr [i.e., also used as transitive verb and as pronominal verb]	
bordear *[to skirt, to go along the edge of]*	Transl		Ground (edge of something)	1			[transitive verb] Ir próximo a la orilla de algo sin entrar en ello. Bojar, bojear, ir [o seguir] a lo largo. Rodear.	[transitive verb] Ir por el borde, o cerca del borde u orilla de algo.	
botar *[to (cause to) bounce, rebound]*	Self-c	AM	Manner	1		Bounce	[transitive verb] del sup. germ. «botan», golpear; Lanzar hacia el suelo una pelota, un balón, etc., de forma que rebote. [intransitive verb] Salir despedida una pelota u otra cosa elástica al chocar en algún sitio. Epostracismo. Arbotante, rebotar.	[transitive verb] Lanzar contra una superficie dura una pelota u otro cuerpo elástico para que retroceda con impulso. [intransitive verb] Dicho de una pelota o de un balón: Saltar al chocar contra una superficie dura. [intransitive verb] Dicho de una persona: Saltar desde el suelo. Dicho de un cuerpo: Chocar repetidamente contra una superficie desigual y salir despedido por la fuerza de los choques.	
brincar *[to jump]*	Self-c		Manner	1		mp-jump	[intransitive verb] Levantarse a cierta altura en el aire mediante un esfuerzo instantáneo de los músculos, para subirse a un sitio, o volviendo a caer inmediatamente. Saltar.	[intransitive verb] Dar brincos o saltos.	*mp-jump*

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
bucear *[to dive, swim down under the water]*	Transl		Manner + Ground (underwater)	2		mp-swim; underwater	[intransitive verb] Nadar manteniéndose debajo del agua.	[intransitive verb] Nadar con todo el cuerpo sumergido.	
cabalgar *[to ride a horse]*	Transl		Manner	1		Vehicle / Instrument (horse)	[intransitive verb] («a»: 'a lomos, a espaldas, a mujeriegas'; «en, sobre») Estar o caminar sobre una caballería.	[intransitive verb] Subir o montar a caballo. U. t. c. tr [i.e., also used as transitive verb] Andar o pasear a caballo.	
cabecear *[to move or to shake one's head]*	Self-c		Figure (body part: head)	1			[intransitive verb] Mover la cabeza a un lado y a otro o arriba y abajo; como se hace al dormitar, como hace a veces el caballo o como hacen las flores sobre sus tallos con el viento.	[intransitive verb] Mover o inclinar la cabeza, ya a un lado, ya a otro, o moverla reiteradamente hacia adelante.	
cabriolar (cabriolear) *[to caper about; to capriole]*	Self-c		Manner	1		mp-jump	[intransitive verb] Hacer cabriolas (Salto dado en la danza cruzando varias veces los pies en el aire; Salto del caballo dando un par de coces mientras se mantiene en el aire).	[intransitive verb] Dar o hacer cabriolas.	
caerse *[to fall down]*	Transl		Path	1	Earth-based orientation: downwards		[intransitive verb and pronominal verb] del lat. «cadere» («de, desde, a, hacia, en, por») Moverse una cosa de arriba abajo por la acción de su propio peso.	[intransitive verb] Dicho de un cuerpo: Moverse de arriba abajo por la acción de su propio peso. U. t. c. prn [i.e., also used as pronominal verb]	
callejear *[to walk around the streets]*	Transl		Ground (street) + Manner	2		mp-walk; No aim in Motion	[intransitive verb] (de «calleja») Vagar por las calles. Deambular.	[intransitive verb] Andar frecuentemente y sin necesidad de calle en calle.	*mp-walk*
caminar *[to walk]*	Transl		Manner	1		mp-walk	(de «camino») Ir alguien de un sitio a otro en cualquier forma. Ir con los propios medios de locomoción.	[transitive verb] Andar determinada distancia.	*mp-walk*
campanear *[to swing]*	Self-c		Manner	1		Shake, Swing, Vibrate	[intransitive verb and pronominal verb] Balancearse, oscilar.	[intransitive verb] Oscilar, balancear, contonearse. U. t. c. prn [i.e., also used as pronominal verb]	

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
capuzar (se) - chapuzar(se) *[to (cause to) dive in]*	Transl	AM	Path + Ground (water) + Manner	3	into G	Forced Motion (Energy-high)	(del lat. «caput», cabeza, y el sup. lat. «puteare», sumergir) [transitive verb] Meter a alguien de cabeza o bruscamente en el agua. Chapuzar, zambullir. [pronominal verb] Meterse en el agua de cabeza o bruscamente.	[transitive verb] Meter a alguien de cabeza en el agua. U. t. c. [i.e., also used as intransitive verb and as pronominal verb]	
caracolear *[(of a horse) to turn around]*	Self-c		Manner	1		Revolve, Rotate, Spin (turn around)	[intransitive verb] Hacer giros o caracoles el caballo. Escarcear (Vuelta que da un caballo por inquietud suya o por voluntad del jinete)	[intransitive verb] Dicho de un caballo: Hacer caracoles (vueltas y tornos).	
chancletear *[to walk using flip-flops]*	Transl		Manner	1		mp-walk; Vehicle / Instrument (flipflops); Noisy Motion	[intransitive verb] Hacer el ruido particular que se produce al andar con chancletas. Traquetear.	[intransitive verb] Andar en chancletas.	*mp-walk*
chapotear *[to move noisily in water/mud]*	Self-c		Manner + Ground (water/mud)	2		Noisy Motion	[intransitive verb] Hacer ruido en el agua, en el barro, etc., golpeándolos o moviéndolos desordenadamente, por ejemplo con los pies o las manos.	[intransitive verb] Producir ruido al mover las manos o los pies en el agua o el lodo, o al pisar estos. U. t. c. tr [i.e., also used as transitive verb]	
chocar *[to (cause to) crash]*	Transl	AM	CONCURRENT RESULT	1			[intransitive verb] («con, contra, en») Juntarse dos cosas con un golpe, bien moviéndose ambas, bien permaneciendo quieta una de ellas. [transitive verb] Hacer chocar.	[intransitive verb] Dicho de dos cosas: Encontrarse violentamente una con otra, como una bala contra la muralla, un buque con otro, etc. [transitive verb] Hacer que algo choque.	
circular *[to move along a given path, to circuit]*	Transl		(Motion) +Ground (circuit)	1			(del lat. «circulāre») [intransitive verb] Moverse o dar vueltas en un circuito. Por extensión, pasar, moverse dentro de un conducto o camino.	[intransitive verb] Andar o moverse en derredor. [intransitive verb] Ir y venir.	
cocear *[(of a horse) to kick]*	Self-c		Figure (body part: kick)	1			[intransitive verb] Dar o tirar coces.	[intransitive verb] Dar o tirar coces.	
codear *[to nudge]*	Self-c		Figure (body part: elbow)	1			[intransitive verb] Moverse dando con los codos a un lado y a otro, por ejemplo para abrirse paso.	[intransitive verb] Mover los codos, o dar golpes con ellos frecuentemente.	

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
cojear *[to limp]*	Transl		Manner	1		mp-walk; Forced Motion; State of Figure (injured)	[intransitive verb] Tener un andar desigual por alguna lesión o defecto físico.	[intransitive verb] Andar inclinando el cuerpo más a un lado que a otro, por no poder sentar con regularidad e igualdad los pies.	
colear *[(of an animal) to wag]*	Self-c		Figure (body part: tail)	1			[intransitive verb] Menear la cola un animal.	[intransitive verb] Mover con frecuencia la cola.	
colisionar *[to crash]*	Transl		CONCURRENT RESULT	1			[intransitive verb] Chocar.	[intransitive verb] Dicho de dos o más vehículos: Chocar con violencia.	
columpiar(se) *[to (cause to) swing]*	Self-c	AM	Manner	1		Vehicle / Instrument (swing); Shake, swing, vibrate;	del leon. «columbiar», del gr. «kolymbáo») [transitive verb] Impulsar a alguien en un columpio o dar a cualquier cosa un movimiento semejante. Balancear. [pronominal verb] Balancearse alguien en el columpio o moverse algo de forma parecida. Mecerse.	[transitive verb] Impeler a quien está sobre un columpio. U. t. c. prn [i.e., also used as pronominal verb] [transitive verb] Mecer, balancear, mover acompasadamente algo. U. t. c. prn [i.e., also used as pronominal verb]	
conducir *[to drive]*	Transl	AM	Manner	1		Vehicle / Instrument	(del lat. «conducere») [transitive verb] Llevar un vehículo cosas o, particularmente, personas, de un sitio a otro.	[transitive verb] Llevar, transportar de una parte a otra. [intransitiver verb] Guiar un vehículo automóvil.	
contonearse *[to walk swaying one's hips in a proud way]*	Transl		Manner	1		mp-walk; State of Figure (proud)	[pronominal verb] (de «cantonearse») Mover al andar los hombros y, sobre todo, las caderas, a veces con afectación para presumir de garboso.	[pronominal verb] Hacer al andar movimientos afectados con los hombros y caderas.	*mp-walk*
contramarchar *[to go backwards, to back]*	Transl		Path	1	back to G / backwards		[intransitive verb] Mar. Hacer contramarcha (vuelta en una marcha militar).	[intransitive verb] De contra1 y marcha. Retroceso que se hace del camino que se lleva.	*mp-walk*

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
correr *[to run]*	Transl		Manner	1		mp-run	(del lat. «currere») [intransitive verb] («Arrancar a, Echarse a, Lanzarse a, Ponerse a; a, por») Ir rápidamente de un sitio a otro con pasos largos que son saltos, pues se levanta el pie del suelo antes de haber apoyado el otro.	[intransitive verb] Dicho de una persona: Andar rápidamente y con tanto impulso que, entre un paso y el siguiente, quedan por un momento ambos pies en el aire.	*Hyperonym*
corretear *[to run about]*	Transl		Manner	1		mp-run; No aim in Motion	[intransitive verb] Ir corriendo de un lado para otro, como hacen los niños. Ir sin necesidad de un lado para otro. Callejear.	[intransitive verb] coloq. Correr en varias direcciones dentro de limitado espacio por juego o diversión. [intransitive verb] coloq. Andar de calle en calle o de casa en casa.	*mp-run / mp-walk*
costear *[to sail along the coast; to move along the edge of]*	Transl		Ground (coast)	1			[transitive verb] Navegar sin perder de vista la costa o la costa de cierto sitio que se expresa. Ir por el costado de una cosa.	[transitive verb] Ir navegando sin perder de vista la costa.Ir por el costado o lado de algo, bordearlo.	
cruzar *[to cross]*	Transl		Path	1	pass/cross G (traversal)		[transitive verb] Atravesar un camino, campo, calle, etc., pasando de una parte a otra.	De cruz. Del lat. crux, crucis. [transitive verb] Atravesar un camino, un campo, una calle, etc., pasando de una parte a otra.	
culebrear *[to move like a snake, to zigzag]*	Transl		Manner	1		Animal-like → Path-shape (zigzag)	[intransitive verb] Moverse o andar haciendo eses como la culebra. Serpentear, zigzaguear.	[intransitive verb] Andar formando eses y pasándose de un lado a otro.	*mp-walk*
curvar (se) *[to (cause to) curve, to bend]*	Self-c	AM	Manner	1		Posture (Bend, Twist, Curve)	(del lat. «curvare») [transitive verb] Dar a una cosa forma curva. Arquear, combar, doblar, enarcar, encorvar. [pronominal verb] Tomar forma curva.	[transitive verb] encorvar (doblar y torcer algo poniéndolo corvo). U. t. c. prn [i.e., also used as pronominal verb]	
danzar *[to dance]*	Self-c		Manner	1		Dance	[intransitive verb] (del fr. antig. «dancier», actual «danser») Moverse rítmicamente siguiendo el compás de una música. Se usa este verbo particularmente cuando se trata de bailes artísticos. En lenguaje corriente es más frecuente bailar.	[intransitive verb] Dicho de una persona: bailar (ejecutar movimientos acompasados). U. t. c. tr [i.e., also used as transitive verb]	

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
derrumbar (se)	Transl	AM	Path	1	Earth-based orientation: downwards		(el sup. lat. «derupare», deriv. de «rupes», roca) [transitive verb] Derribar o hundir un edificio o construcción. [transitive verb] Hacer caer una cosa desde una roca o por una pendiente escarpada. Arrojar, despeñar, precipitar. [pronominal verb] Caer o hundirse una construcción.	[transitive verb] Precipitar, despeñar. U. t. c. prn [i.e., also used as pronominal verb]. [transitive verb] Derribar, demoler una construcción o parte de ella. U. t. c. prn [i.e., also used as pronominal verb]	
deambular *[to walk around]*	Transl		Manner	1		mp-walk; No aim in Motion	(del lat. «deambulare») [intransitive verb]Andar sin objetivo determinado; no se aplica a distancias muy grandes. Vagar. Callejear.	[intransitive verb] Andar, caminar sin dirección determinada.	*mp-walk*
desacelerar *[to slow down]*	Transl		Manner	1		Rate-decrease	(de «des-» y «acelerar») [transitive verb] Reducir la aceleración.	[transitive verb] Disminuir la velocidad. U. t. c. [i.e., also used as intransitive verb]	*mp-walk / mp-run*
desandar *[to walk back to a previous path]*	Transl		Path + Manner	2	back to G; backwards	mp-walk	[intransitive verb] Recorrer en dirección contraria el mismo camino recorrido antes. Retroceder. Desandar lo andado.	[transitive verb] retroceder (volver atrás)	*mp-walk*
descender *[to (cause to) go down]*	Transl	AM	Path	1	Earth-based orientation: downwards		del lat. «descendere») («de, desde, por, hacia, hasta») [intransitive verb] Ir de un sitio a otro más bajo. Bajar. [transitive verb] Poner una cosa baja o más baja de lo que estaba, o llevar una cosa de un sitio a otro más bajo.	[intransitive verb] bajar (ir desde un lugar a otro más bajo). [transitive verb] bajar (poner bajo).	
desembarcar *[to (cause to) disembark]*	Transl	AM	Path + Ground (ship)	2	out of G		[transitive verb] Descargar las cosas que van en un barco.(«de, en») [intransitive verb] Salir de una embarcación.	[intransitive verb] Salir de una embarcación. U. t. c. prn [i.e., also used as pronominal verb]. [transitive verb] Sacar de la nave y poner en tierra lo embarcado.	
desenroscar (se) *[to (cause to) uncoil]*	Self-c	AM	Manner	1		Posture (Unroll)	[transitive verb and pronominal verb] Extender[se] lo que está enroscado. Desenrollar.	[transitive verb] Extender lo que está enroscado. U. t. c. prn [i.e., also used as pronominal verb]	

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
desertar *[to desert]*	Transl		Path	1	away from G (departure, source)		(del lat. «desertare») [intransitive verb] («de») Abandonar un soldado su puesto.	[intransitive verb] Dicho de un soldado: Desamparar, abandonar sus banderas.	
desfilar *[to walk in file, to parade]*	Transl		Manner	1		Motion in file	(de «des-» y «fila») [intransitive verb] Marchar en fila. Pasar una formación militar, por ejemplo en una solemnidad, por delante de un superior o de algún personaje. Pasar un conjunto de personas, por ejemplo una manifestación, por algún sitio.	[intransitive verb] Dicho de varias personas: Marchar en fila. [intransitive verb] Mil. Dicho de las tropas: En ciertas solemnidades, marchar en formación ante alguna autoridad.	*mp-walk*
deslizar (se) *[to (cause to) slide]*	Transl	AM	Manner	1		Contact [between F and G]; Smooth Motion	[transitive verb and pronominal verb] Mover[se] o pasar una cosa sobre otra suavemente.	[transitive verb] Arrastrar algo con suavidad por una superficie. U. m. c. [i.e., most commonly used as pronominal verb]	*mp-walk / mp-run*
despeñar(se) *[to (cause to) fall down from a rock]*	Transl	AM	Path + Ground (rock)	2	down from G		(de «des-» y «peña») [transitive verb] Arrojar una cosa desde lo alto de una roca o un precipicio. Precipitar. [pronominal verb] Caer por un despeñadero.	[transitive verb] Precipitar y arrojar a alguien o algo desde un lugar alto y peñascoso, o desde una prominencia aunque no tenga peñascos. U. t. c. prn [i.e., also used as pronominal verb]	
desplomar (se) *[to (cause to) collapse]*	Transl	AM	Path	1	Earth-based orientation: downwards		(de «des-» y «plomo».) (del lat. «plumbum») [pronominal verb] Caer pesadamente una cosa cualquiera por cualquier causa. Particularmente, caer pesadamente una persona al perder el sentido o quedar muerta.	[pronominal verb] Dicho especialmente de una pared o de un edificio: Caerse, perder la posición vertical. [pronominal verb] Dicho de una persona: Caerse sin vida o sin conocimiento. [transitive verb] Hacer que una pared, un edificio u otra cosa pierda la posición vertical.	
desviar (se) *[to divert; to be diverted]*	Transl	AM	Path	1	Change direction		[transitive verb and pronominal verb] (del lat. «deviare») Apartar[se] del camino o dirección seguidos o de su destino, en sentido material o figurado	[transitive verb] Apartar, alejar a alguien o algo del camino que seguía. U. t. c. prn [i.e., also used as pronominal verb]	

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
dirigir (se) *[to lead something or someone to somewhere; to head to]*	Transl	AM	Path	1	to/toward G (arrival, endpoint)		(del lat. «dirigere») [transitive verb] Enviar o hacer ir una cosa a cierto punto o en cierta dirección. Ir en cierta dirección o hacia cierto sitio	[transitive verb] Enderezar, llevar rectamente algo hacia un término o lugar señalado. U. t. c. prn [i.e., also used as pronominal verb]	
dispersar (se) *[to (cause to) disperse]*	Transl	AM	Path	1	Multiple directions from a unique start		[transitive verb and pronominal verb] Mover[se] en distintas direcciones cosas que estaban juntas o formando grupo.	[transitive verb] Separar y diseminar lo que estaba o solía estar reunido. U. t. c. prn [i.e., also used as pronominal verb]	
distanciar (se) *[to (cause to) move away from]*	Transl	AM	Path	1	away from G (departure, source)		[transitive verb and pronominal verb] Poner[se] distanciadas cosas que estaban juntas o poner[se] más distanciadas las que estaban separadas.	[transitive verb] Separar, apartar, poner a distancia. U. t. c. prn [i.e., also used as pronominal verb]	
divagar *[to wander]*	Transl		Manner	1		mp-walk; No aim in Motion	(del lat. «divagāri») [intransitive verb] Vagar.	[intransitive verb] Vagar.	
echar (se)1 *[to (cause to) move towards]*	Transl	AM	Path + Manner	2	to/towards G (arrival, endpoint)	Forced Motion (Energy-high)	(del lat. «iactare») [transitive verb] («a, en, por, sobre») Impulsar hacia cierto sitio una cosa que se tiene cogida con la mano, a la vez que se suelta. [pronominal verb] Acercarse bruscamente a algo o alguien para cogerlo, sujetarlo, abrazarlo.	[transitive verb] Hacer que algo vaya a parar a alguna parte, dándole impulso. [pronominal verb] arrojarse (ir violentamente hacia alguien o algo).	
echarse2 *[to lie down]*	Self-c		Manner	1		Posture (horizontal)	[pronominal verb] Ponerse con el cuerpo en posición horizontal.	[pronominal verb] Dicho de una persona: Tenderse por un rato para descansar.	
elevar (se) *[to (cause to) move upwards]*	Transl	AM	Path	1	Earth-based orientation: upwards		[transitive verb] (del lat. «elevare») Llevar una cosa desde un sitio a otro más alto. [pronominal verb] Subir.	[transitive verb] levantar (mover hacia arriba). U. t. c. prn [i.e., also used as pronominal verb]	

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
embarcar (se) *[to (cause to) go on board]*	Transl	AM	Path + Ground (ship, plane, train)	2	on/onto/into G		[intransitive verb and pronominal verb] Meterse en un barco, tren o avión para viajar en ellos.	[transitive verb] Introducir personas, mercancías, etc., en una embarcación, tren o avión. U. t. c. [i.e., also used as intransitive verb and as pronominal verb]	
emigrar *[to emigrate]*	Transl		Path + Ground (country)	2	away from G (departure, source)		[intransitive verb] (del lat. «emigrare») Marcharse una persona de su pueblo, región o país para establecerse en otro.	[intransitive verb] Dicho de una persona, de una familia o de un pueblo: Dejar o abandonar su propio país con ánimo de establecerse en otro extranjero.	
empinar (se) *[to (cause to) stand up]*	Self-c	AM	Manner	1		Posture (vertical-upwards)	(de «en-» y «pino2», erguido) [transitive verb] Poner vertical una cosa que estaba tumbada. Alzar, aupar, levantar. Coger algo, por ejemplo un niño, y levantarlo y sostenerlo en alto. Alzar, aupar, levantar. [pronominal verb] Levantarse todo lo posible apoyando las puntas de los pies.	[transitive verb] Enderezar y levantar en alto. [pronominal verb] Dicho de una persona: Ponerse sobre las puntas de los pies y erguirse.	
encabritarse *[to rear up]*	Self-c		Manner	1		Posture?: Front part of the Figure rises suddenly	[pronominal verb] Empinarse un caballo, por rebeldía o por temor. Levantarse la parte delantera de algunas cosas, como una nave o un avión.	[transitive verb] Hacer que un caballo se empine, afirmándose sobre los pies y levantando las manos. Hacer que una embarcación, un aeroplano, un automóvil, etc., levante su parte delantera súbitamente hacia arriba. U. m. c. prnl. [i.e., most commonly used as pronominal verb]	
encaramar (se) *[to (cause to) move up, to the top of]*	Transl	AM	Path	1	up/onto G		(del ár. and. «karáma») [transitive verb] Poner a alguien o algo en sitio elevado. Subir. [pronominal verb] Subir a un sitio alto.	[transitive verb] Levantar o subir a alguien o algo a lugar dificultoso de alcanzar. U. t. c. prn [i.e., also used as pronominal verb]	

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
encerrar (se) *[to put something, someone or oneself into an enclosed place]*	Transl	AM	Path	1	into G		encerrar (de «en-» y «cerrar») (del sup. lat. vg. «serräre», del lat. «serräre», cerrar, con influencia de «serräre», serrar) [transitive verb] Guardar una cosa en un sitio cerrado. Meter a alguien en sitio de donde no puede salir o escaparse. [pronominal verb] Meterse alguien en un lugar y no querer salir de ahí.	[transitive verb] Meter a una persona o a un animal en lugar del que no pueda salir. [pronominal verb] Retirarse del mundo, recogerse en una clausura o religión.	
encorvar (se) *[to (cause to) bend, to curve]*	Self-c	AM	Manner	1		Posture (Bend, Twist, Curve)	(del lat. «incurvare») [transitive verb] Hacer tomar forma curva a una cosa. Curvar. [pronominal verb] Tomar forma curva una cosa.	[transitive verb] Doblar y torcer algo poniéndolo corvo. U. t. c. prnl. [i.e., also used as pronominal verb]	*Low ratings. No significant difference*
encumbrar *[to reach the top of]*	Transl	AM	Path	1	up/onto G		(de «en-» y «cumbre») transitive verb] Coronar o rebasar la cumbre de una montaña.	[transitive verb] Subir la cumbre, pasarla.	
enderezar (se) *[to (cause to) straighten, to become straight]*	Self-c	AM	Manner	1		Posture (unspecified orientation)	(de «en-» y «derezar») [transitive verb and pronominal verb] Poner[se] derecho algo que estaba torcido. Desdoblar, desencorvar, desroblar, destorcer. Recto.	[transitive verb] Poner derecho lo que está torcido. U. t. c. prn [i.e., also used as pronominal verb]. [transitive verb] Poner derecho o vertical lo que está inclinado o tendido. U. t. c. prn [i.e., also used as pronominal verb]	
enrollar (se) *[to (cause to) roll]*	Self-c	AM	Manner	1		Posture (Roll)	[transitive verb and pronominal verb] Poner[se] una cosa, por ejemplo un papel o un alambre, en forma de rollo.	[transitive verb] Dar a algo forma de rollo. U. t. c. prnl. [i.e., also used as pronominal verb]	
enroscar (se) *[to (cause to) coil]*	Self-c	AM	Manner	1		Posture (Roll)	[transitive verb] Poner una cosa alargada formando una o más vueltas. Arrollar, arroscar, enrollar. [pronominal verb] Ponerse una cosa en forma de rosca. Tratándose de un ser vivo, encoger el cuerpo formando una especie de rosca, o varias roscas en el caso de los reptil.	[transitive verb] Poner algo en forma de rosca. U. t. c. prn [i.e., also used as pronominal verb]	

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Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
entrar *[to enter]*	Transl		Path		into G		(del lat. «inträre») [intransitive verb] («a, en, por») Pasar al interior de una cosa.	[intransitive verb] Ir o pasar de fuera adentro. U. t. c. prn [i.e., also used as pronominal verb]	
erguir (se) *[to (cause to) straighten, stand up]*	Self-c	AM	Manner	1		Posture (vertical-upwards)	(del lat. «erigere») [transitive verb] Poner una cosa en posición vertical y derecha. [pronominal verb] Poner erguido el propio cuerpo.	[transitive verb] Levantar y poner derecho algo, especialmente el cuello o la cabeza. [pronominal verb] Levantarse o ponerse derecho.	
errar *[to wander around]*	Transl		Manner	1		mp-walk; No aim in Motion	(del lat. «errare», vagabundear) [intransitive verb] Andar sin destino u objetivo fijo y sin tener residencia fija. Vagar	[intransitive verb] Andar vagando de una parte a otra.	*mp-walk*
escabullirse *[to slip away]*	Transl		Path + Manner	2	away from G (departure, source)	Furtive Motion	[pronominal verb and intransitive verb] («de, de entre, por entre») Escaparse algo o alguien escurriéndose de entre las manos de quien lo sujeta. Deslizarse. Descabullirse, escullirse. Marcharse de un sitio disimuladamente	[pronominal verb] Dicho de una cosa: Irse o escaparse de entre las manos. [pronominal verb] Dicho de una persona: Apartarse, sin que de momento se note, de la compañía en que estaba.	
escalar *[to scale, to climb]*	Transl		Path	1	up/onto G		[transitive verb] Subir a algún sitio.	Del lat. scalaris [transitive verb] Subir, trepar por una gran pendiente o a una gran altura.	
escapar (se) *[to escape]*	Transl		Path + Manner	2	away from G (departure, source)	Rate-fast	(del lat. «ex», fuera, y «cappa», capa) [intransitive verb and pronominal verb] Librarse, huyendo, de una sujeción o encierro.	[intransitive verb] Salir de un encierro o un peligro. [intransitive verb] Salir, huir. U. t. c. prn [i.e., also used as pronominal verb]	
escoltar *[to escort]*	Transl		Figure + CO-MOTION	2			[transitive verb] Acompañar algo o a alguien que va de un sitio a otro, para protegerlo.	[transitive verb] Resguardar, conducir algo o a alguien para que llegue con seguridad a su destino.	
espantar (se) *[to (cause to) run away as result of being frightened]*	Transl	AM	CAUSE + Manner	2		State of Figure (frightened)	[transitive verb] Hacer que un animal se asuste y huya, o corra hacia cierto sitio. Causar miedo a alguien. [pronominal verb] Aterrarse o ahuyentarse	[transitive verb] Causar espanto, dar susto, infundir miedo. U. t. c. [i.e., also used as i.e., also used as]. [intransitive verb] [pronominal verb] Sentir espanto, asustarse. NO TIENE EL SIGNIFICADO DE HUIR.	

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
esparcir (se) *[to (cause to) move in different directions]*	Transl	AM	Path	1	Multiple directions from a unique start		(del lat. «spargere») [transitive verb] Arrojar o enviar cosas en distintas direcciones; [pronominal verb] Extenderse lo que estaba junto o amontonado. Desparramar[se], diseminar[se]	[transitive verb] Extender lo que está junto o amontonado. U. t. c. prn [i.e., also used as pronominal verb]	
esprintar *[to sprint]*	Transl		Manner	1		mp-run	[intransitive verb] Realizar un esprint. NOUN: Esfuerzo momentáneo en una carrera, especialmente al final de ella, para lograr la victoria.	[intransitive verb] Realizar un sprint. NOUN: (Voz inglesa). Aceleración que realiza un corredor en un tramo determinado de la carrera, especialmente en la llegada a meta para disputar la victoria a otros corredores.	*mp-run*
esquiar *[to ski]*	Transl		Manner	1		Vehicle / Instrument (skis)	[intransitive verb] Deslizarse sobre la nieve o el agua con esquís.	[intransitive verb] Patinar con esquís.	
esquivar *[to avoid, to dodge]*	<u>Transl</u>		Path		away from G (departure, source)		(del germ. «skiuhan», tener miedo) [transitive verb] Procurar o conseguir con habilidad no hacer algo, no encontrarse con alguien o que no ocurra alguna cosa que a uno le molestaría o le pondría en un aprieto.	[transitive verb] Evitar, rehusar. [pronominal] Retraerse, retirarse, excusarse.	*mp-run / mp-walk*
estirar (se) *[to (cause to) stretch out]*	Self-c	AM	Manner	1		Posture (unspecified orientation)	[transitive verb and pronominal verb] Estirar y poner tensos los miembros para recobrar la agilidad después del sueño o una quietud prolongada.	[transitive verb] Alargar, dilatar algo, extendiéndolo con fuerza para que dé de sí. U. t. c. prn [i.e., also used as pronominal verb]	
estrellar (se) *[to (cause to) crash]*	Transl	AM	CONCURRENT RESULT	1			[transitive verb] («contra») Lanzar con violencia una cosa contra un sitio duro o dejarla caer contra el suelo, haciéndola pedazos. Estampar. [pronominal verb] Tropezar o caer violentamente contra algo duro, causándose mucho daño.	Arrojar con violencia algo contra otra cosa, haciéndolo pedazos. U. t. c. prn [i.e., also used as pronominal verb]. [pronominal verb] Quedar malparado o matarse por efecto de un choque violento contra una superficie dura.	

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Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
estremecer (se) *[to (cause to) tremble, shiver]*	Self-c	AM	Manner	1		Shake, Swing, Vibrate	(del lat. «ex» y «tremiscere», empezar a temblar) transitive verb] Hacer temblar una cosa. [pronominal verb] Temblar alguien o algo.	[pronominal verb] Quedar malparado o matarse por efecto de un choque violento contra una superficie dura. [pronominal verb] Temblar con movimiento agitado y repentino.	
exiliar (se) *[to (cause to) leave one's country; to exile, to go into exile]*	Transl	AM	Path + Ground (country)	2	out of G		[transitive verb] Obligar a alguien a exhiliarse. [pronominal verb] Marcharse alguien de su patria obligado por las persecuciones políticas u otra circunstancia.	[transitive verb] Expulsar a alguien de un territorio. [pronominal verb] Expatriarse, generalmente por motivos políticos.	
expatriar (se) *[to (cause to) leave one's country; to exile, to go into exile]*	Transl	AM	Path + Ground (country)	2	out of G		(de «ex-» y «patria») [transitive verb]Hacer salir a alguien de su patria. [pronominal verb] Abandonar alguien su patria, voluntariamente o por necesidad.	[transitive verb] Hacer salir de la patria. [pronominal verb] Abandonar la patria.	
extender (se) [to (cause to) stretch)	Self-c	AM	Manner	1		Posture (unspecified orientation)	[transitive verb and pronominal verb] Abrir[se], desarrugar[se], desdoblar[se] o desenrollar[se] una cosa, de modo que se muestre en toda su extensión. («sobre») [transitive verb] Particularmente, hacerlo así con una cosa poniéndola sobre algo que se expresa. Tender la ropa. [pronominal verb] Echarse alguien estirado sobre algún sitio	[transitive verb] Hacer que algo, aumentando su superficie, ocupe más lugar o espacio que el que antes ocupaba. U. t. c. prn [i.e., also used as pronominal verb] [transitive verb] Desenvolver, desplegar o desenrollar algo que estaba doblado, arrollado o encogido. U. t. c. prn [i.e., also used as pronominal verb]	
flotar *[to float (on liquid, on air)]*	Self-c		Manner	1		Smooth Motion	(del fr. «flotter») [intransitive verb] Mantenerse en la superficie de un líquido sin sumergirse. [intransitive verb] (del fr. «flotter») Moverse una tela sujeta por algún lado, en el aire, a impulso del viento. Ondear.	[intransitive verb] Dicho de un cuerpo: Sostenerse en la superficie de un líquido. [intransitive verb] ondear (moverse formando ondas).	
fondear *[to move down at the bottom of the sea]*	Transl		Ground (deep sea)	1			[transitive verb] Sondear, reconocer el fondo del mar.	[transitive verb] Reconocer el fondo del agua.	

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Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
fugarse *[to flee, to run away]*	Transl		Path + Manner	2	away from G (departure, source)	Rate-fast	[pronominal verb] Escaparse o huir alguien de un sitio en donde está encerrado, sujeto o vigilado.	[pronominal verb] Escaparse, huir.	*mp-run*
galopar1 *[to gallop]*	Transl		Manner	1		mp-run; Rate-fast	(del fr. «galoper») [intransitive verb] Ir a galope. galope (de «galopar») m. Equit. Marcha, la más veloz del caballo, en que éste avanza dando saltos y apoyándose sucesivamente en las patas traseras y delanteras.	[intransitive verb] Dicho de una caballería: Ir a galope.	*mp-run*
galopar2 *[to ride a galloping horse]*	Transl		Manner	1		Vehicle / Instrument (horse); Rate-fast	NO FOUND IN DUE	[intransitive verb] Cabalgar en caballo que va a galope.	
gatear1 *[to crawl]*	Transl		Manner	1		mp-walk; Use of one's hands	[intransitive verb] Andar a gatas.	[intransitive verb] coloq. Andar a gatas.	*mp-walk*
gatear2 *[to climb like a cat]*	Transl		Path + Manner	2	up/onto G; upwards	Animal-like → Use of one's hands and legs (clamber)	[intransitive verb] Trepar valiéndose de los pies o las rodillas y las manos.	[intransitive verb] Trepar como los gatos, y especialmente subir por un tronco o astil valiéndose de los brazos y piernas.	
girar1 *[to turn, to change one's direction]*	Transl		Path	1	Change direction		(del lat. «gyrare») [intransitive verb] Cambiar de dirección una calle o camino. Cambiar una persona o vehículo su dirección inicial.	[intransitive verb] Desviarse o cambiar con respecto a la dirección inicial.	
girar2 *[to (cause to) rotate, spin]*	Self-c	AM	Manner	1		Revolve, Rotate, Spin	(del lat. «gyrare») [intransitive verb] Moverse un cuerpo de modo que describe circunferencias alrededor de otro; [transitive verb] Mover circularmente algo.	[transitive verb] Mover una figura o un objeto alrededor de un punto o de un eje. [intransitive verb] Dicho de una cosa: Dar vueltas sobre un eje o en torno a un punto.	
guiar *[to guide, to lead the way]*	Transl		Figure + CO-MOTION	2			[transitive verb] Ir delante de otros o con otros, mostrándoles el camino que deben seguir.	[transitive verb] Ir delante mostrando el camino.	

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Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
haldear *[to walk quickly moving one's skirt/dress]*	Transl		Manner	1		mp-walk; Rate-fast	[intransitive verb] Andar deprisa, haciendo moverse las faldas.	(De halda) [intransitive verb] Dicho de una persona con faldas: Andar deprisa.	
hamacar (se) - hamaquear (se) *[to rock (oneself) on a hammock]*	Self-c	AM	Manner	1		Vehicle / Instrument (hammock); Shake, Swing, Vibrate.	[transitive verb and pronominal verb] Mecer[se] en hamaca.	[transitive verb] Am. Mecer, columpiar, especialmente en hamaca. U. t. c. prn [i.e., also used as pronominal verb]	
huir *[to flee, to run away]*	Transl		Path + Manner	2	away from G (departure, source)	Rate-fast	(del lat. «fugire», por «fugore») [intransitive verb and pronominal verb] («a, de») Marcharse precipitadamente de un sitio por temor.	[intransitive verb] Alejarse deprisa, por miedo o por otro motivo, de personas, animales o cosas, para evitar un daño, disgusto o molestia.	*mp-run*
hundir (se) *[to (cause to) collapse, to sink]*	Transl	AM	Path	1	Earth-based orientation: downwards; down from/to G		(del lat. «fundere», arruinar) [transitive verb] Hacer caer un edificio o construcción o parte de ellos. [pronominal verb] Convertirse en ruinas.	[transitive verb] Sumir, meter en lo hondo. U. t. c. prn [i.e., also used as pronominal verb]	
inclinar (se) *[to (cause to) incline, bend, bow]*	Self-c	AM	Manner	1		Posture (vertical-downwards)	(del lat. «inclinare») [transitive verb and pronominal verb] Separar[se] una cosa de la posición horizontal o de la vertical.	[transitive verb] Apartar algo de su posición perpendicular a otra cosa o al horizonte. U. t. c. prn [i.e., also used as pronominal verb]. [pronominal verb] Bajar el tronco y la cabeza hacia adelante.	
inmigrar *[to immigrate]*	Transl		Path + Ground (country)	2	into G		(del lat. «immigrare») [intransitive verb] Llegar a un territorio para establecerse en él. Se aplica también a los animales. Emigrar.	[intransitive verb] Dicho del natural de un país: Llegar a otro para establecerse en él, especialmente con idea de formar nuevas colonias o domiciliarse en las ya formadas.	
invadir *[to invade]*	Transl		Path + Manner	2	into G	Violent Motion	(del lat. «invadere») [transitive verb]Entrar en un sitio por la fuerza o la violencia o contra la voluntad de los que lo ocupan; particularmente, como acción de guerra.	[transitive verb] Irrumpir, entrar por la fuerza.	

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
IR(se) *[to go]*	Transl		Path	1	Deixis: away from G (speaker)		(del lat. «ire») [intransitive verb] («a, hacia, para, hasta, contra») Moverse hacia un sitio que se expresa. («en, entre, por, sobre») A veces no se expresa el lugar ni la dirección, sino alguna circunstancia del movimiento.	[intransitive verb] Moverse de un lugar hacia otro apartado de quien usa el verbo ir y de quien ejecuta el movimiento.Caminar de acá para allá. U. t. c. prn [i.e., also used as pronominal verb]	
jinetear *[to ride a horse in a showing off manner]*	Transl		Manner	1		Vehicle / Instrument (horse); State of the Figure (proud)	[intransitive verb] Presumir montando a caballo.	[intransitive verb] Andar a caballo, principalmente por los sitios públicos, alardeando de gala y primor.	
ladear *[to move on the hillside (usually on foot)]* **(faldear)**	Transl		Ground (hillside) + Manner	1		mp-walk	[intransitive verb] Andar por la ladera de una montaña. Faldear.	[intransitive verb] Andar o caminar por las laderas.	
ladear (se)1 *[to (cause to) move away from]*	Transl	AM	Path	1	away from G (departure, source)		[intransitive verb and pronominal verb] Desviarse del camino derecho. [pronominal verb] Apartarse o echarse a un lado para evitar una cosa o a una persona.	[intransitive verb] Declinar del camino derecho.	
ladear (se)2 *[to slant, to lean]*	Self-c	AM	Manner	1		Posture (to one side)	[transitive verb and pronominal verb] Inclinar[se] o torcer[se] una cosa hacia un lado.	[transitive verb] Inclinar y torcer algo hacia un lado. U. t. c. [i.e., also used as intransitive verb and pronominal verb]	
lanzar (se)	Transl	AM	Manner	1		Forced Motion (Energy-high)	del lat. «lanceare» [transitive verb] Hacer que una cosa salga disparada impulsándola con la mano, con un dispositivo o mecanismo, con un explosivo o con un golpe. («a») [pronominal verb] Salir impulsado con un dispositivo o mecanismo. prnl. Se aplica a la acción de dirigirse a cualquier cosa, en sentido material o figurado, con precipitación o violencia.	[transitive verb] arrojar. U. t. c. prn [i.e., also used as pronominal verb] Dejarse ir con violencia de lo alto a lo bajo. Ir violentamente hacia alguien o algo hasta llegar a él o ello.	

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
largarse *[to leave]*	Transl		Path	1	away from G (departure, source)		[pronominal verb] Marcharse de un sitio brusca o precipitadamente, por eludir alguna cosa o por estar a disgusto en él.	[pronominal verb] coloq. Dicho de una persona: Irse o ausentarse con presteza o disimulo.	
levantar (se)1 *[to (cause to) stand up]*	Self-c	AM	Manner	1		Posture (vertical-upwards)	(de «levante», part. activo de «levar») [transitive verb] Poner de pie o en posición vertical algo que estaba tumbado o inclinado. [pronominal verb] Ponerse de pie cuando se está sentado o tumbado.	[transitive verb] Poner derecha o en posición vertical la persona o cosa que esté inclinada, tendida, etc. U. t. c. prn [i.e., also used as pronominal verb].	
levantar (se)2 *[to lift, to raise]*	Transl	AM	Path	1	Earth-based orientation: upwards		(de «levante», part. activo de «levar») (del lat. «leväre»). [transitive verb] Separar una cosa del sitio donde está y llevarla más arriba. [pronominal verb] separarse algo del sitio donde está e irse más arriba.	[transitive verb] Mover hacia arriba algo. U. t. c. prn [i.e., also used as pronominal verb] Poner algo en lugar más alto que el que tenía. U. t. c. prn [i.e., also used as pronominal verb]	
llanear *[to move, walk or cycle on a flat terrain]*	Transl		Ground (flat terrain)	1			[transitive verb] Andar por un terreno llano, evitando las pendientes. En ciclismo, correr con facilidad en el llano.	[intransitive verb] Andar por lo llano, evitando pendientes.	
llegar *[to arrive]*	Transl		Path	1	to/towards G (arrival, endpoint)		del lat. «plicare», plegar; [intransitive verb] Pasar a estar en cierto sitio al que se va desde otro.	[intransitive verb] Alcanzar el fin o término de un desplazamiento.	
marchar *[to march]*	Transl		Manner	1		mp-walk; Characteristic use of lower body (regular steps)	del fr. «marcher»[intransitive]; Mil. Andar los soldados en formación y marcando el paso.	[intransitive verb] Mil. Dicho de la tropa: Ir o caminar con cierto orden y compás.	

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Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
marcharse *[to go away]*	Transl		Path	1	away from G (departure, source)		[intransitive verb] Moverse avanzando con los pies. Andar, caminar. Moverse de un lugar a otro de cualquier manera. [intransitive verb and pronominal verb] Dejar, por decisión o movimiento propio, de estar en un sitio, determinado o no, expresando o no la llegada a otro	[intransitive verb] andar. Irse o partir de un lugar. U. t. c. prn [i.e., also used as pronominal verb].	
mecer (se) *[to (cause to) swing, rock]*	Self-c	AM	Manner	1		Shake, Swing, Vibrate	[transitive verb and pronominal verb] Mover[se] una cosa repetidamente de un lado al opuesto, manteniendo fijo algún punto de ella o estando suspendida o sostenida sobre un pie u objeto oscilante; como una cuna, un columpio o a un niño en su cuna.	[transitive verb] Mover algo compasadamente de un lado a otro sin que mude de lugar, como la cuna de los niños. U. t. c. prn [i.e., also used as pronominal verb]	
menear (se) *[to (cause to) move]* **(moverse)**	Self-c	AM	**(Self-contained Motion)**				del antig. «manear», de «mano», con influencia del antig. «menar», conducir; [transitive verb] Cambiar la posición o la situación de una cosa. Mover. En particular, mover el cuerpo o parte de él. [pronominal verb] Moverse.	[transitive verb] Mover algo de una parte a otra. U. t. c. prn [i.e., also used as pronominal verb]	
merodear *[to walk around, to prowl]*	Transl		Manner + Cause	2		mp-walk	[intransitive verb] Ir repetidamente a un sitio sin un objetivo definido, o vagar por un sitio, para observar, espiar, curiosear o en busca de algo.	[intransitive verb] Vagar por las inmediaciones de algún lugar, en general con malos fines.	
montar (se) *[get on/onto an animal or into a vehicle]*	Transl		Manner	1		Vehicle / Instrument	[intransitive verb and pronominal verb] del fr. «monter» («en, sobre»; con «caballo», también «a») Subirse encima de un animal para ser transportado o sobre un vehículo.	[intransitive verb] Ponerse o subirse encima de algo. U. t. c. tr y c. prn [i.e., also used as transitive verb and as pronominal verb]. [intransitive verb] Subir a una cabalgadura. [intransitive verb] cabalgar (andar o pasear a caballo).	

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Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
mover (se) *[to (cause to) move, change one's location]*	Self-c + Transl	AM	(Motion)				del lat. «movere» [transitive verb] Cambiar la situación o posición de una cosa. [pronominal verb] Cambiar de posición una cosa. [pronominal verb and intransitive verb] Iniciar la acción de marcharse de un sitio levantándose del asiento o de otro modo.	[transitive verb] Hacer que un cuerpo deje el lugar o espacio que ocupa y pase a ocupar otro. U. t. c. prn [i.e., also used as pronominal verb]. [transitive verb] Menear o agitar una cosa o parte de algún cuerpo.	
mudarse *[to go from one place to another]*	Transl		(Motion)				[pronominal verb and intransitive verb] («de») Irse o pasar de un sitio a otro.	[pronominal verb] coloq. Dicho de una persona: Irse del lugar, sitio o concurrencia en que estaba.	
nadar *[to swim]*	Transl		Manner + Ground (water)	2		mp-swim	(del lat. «natare») [intransitive verb] Moverse sobre el agua o sumergido en ella sin tocar el fondo.	[intransitive verb] Dicho de una persona o de un animal: Trasladarse en el agua, ayudándose de los movimientos necesarios, y sin tocar el suelo ni otro apoyo.	
naufragar *[(of a ship, or of people in a ship) to sink]*	Transl		Path + Ground (sea)	2	down into G		(del lat. «naufragare») [intransitive verb] Hundirse un barco en el agua por accidente. Dicho de una persona: Sufrir el naufragio del barco en que viaja.	[intransitive verb] Dicho de una embarcación: Irse a pique o perderse. Dicho de una persona: Sufrir el naufragio del barco en que viaja.	
navegar *[to navigate (on the sea, on the air)]*	Transl		Manner	1		Vehicle / Instrument (ship, airplane)	(del lat. «navigare») [intransitive verb] Ir un vehículo, o ir en un vehículo, por el agua. Conducir un vehículo, o ir en él, por el aire. Avión.	[intransitive verb] Viajar en un buque o en otra embarcación, generalmente por mar. U. t. c. tr [i.e., also used as transitive verb] Hacer viaje o ir por el aire en globo, avión u otro vehículo adecuado. Dicho de un buque o de otra embarcación: avanzar.	
noctambular *[to walk around at night]*	Transl		Manner	1		mp-walk; No aim in Motion; Night time	[intransitive verb] noctambular. Vagar de noche.	[intransitive verb] Andar vagando de noche.	*mp-walk*
ondear *[to undulate, to sway]*	Self-c		Manner	1		Shake, Swing, Vibrate	[intransitive verb] Formar ondas movibles una superficie; por ejemplo, el agua o una bandera movida por el viento. Balancearse en el aire.	[intransitive verb] Dicho de un cuerpo flexible: Moverse formando ondas. [transitive verb]∫ Mover algo, especialmente una bandera o un pañuelo, formando ondas.	

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
oscilar *[to oscillate, to swing]*	Self-c		Manner	1		Shake, Swing, Vibrate	(del lat. «oscillare») [intransitive verb] Moverse a un lado y a otro una cosa que está suspendida, que está sujeta o apoyada por un solo punto o que no está suficientemente sujeta.	[intransitive verb] Efectuar movimientos de vaivén a la manera de un péndulo o de un cuerpo colgado de un resorte o movido por él.	
partir *[to leave]*	Transl		Path	1	away from G (departure, source)		(del lat. «partĭre») [intransitive verb] Marcharse de un sitio para ir a otro distante.	[intransitive verb] Empezar a caminar, ponerse en camino.	
pasar *[to go through, over, along,...]*	Transl		Path	1	pass G (traversal, milestone)		(del lat. «passare») [intransitive and transitive verb] El significado básico de este verbo es el de ir de un sitio a otro. En segundo lugar, esta acción puede implicar atravesar por dentro, por encima o por al lado de una cosa. En tercer lugar, la acción de pasar puede llevar consigo dejar atrás una cosa yendo más allá de ella, rebasándola, superándola o venciéndola. En cuarto lugar, el objeto de interés puede ser el lugar o la cosa por encima de la cual, por delante de la cual, etc., se realiza el tránsito.	[transitive verb] Llevar, conducir de un lugar a otro. [transitive verb] Mudar, trasladar a otro lugar, situación o clase. U. t. c. [i.e., also used as intransitive verb and as pronominal verb]. [transitive verb] Cruzar de una parte a otra.	
pasear *[to walk for pleasure]*	Transl		Manner	1		mp-walk; Leisurely Motion	[intransitive verb and pronominal verb] de «paso» Andar por placer o por hacer ejercicio, particularmente al aire libre.	[intransitive verb] Ir andando por distracción o por ejercicio. U. t. c. tr y prn [i.e., also used as transitive verb and as pronominal verb]	
patalear *[to stamp one's feet on the ground showing one is angry]*	Self-c		Figure (body part: feet) + Manner	2		Iterative Motion; State of Figure (angry)	[intransitive verb] Dar golpes con los pies en el suelo por enfado.	[intransitive verb] Mover las piernas o patas violentamente y con ligereza, para herir con ellas o en fuerza de un accidente o dolor. [intransitive verb] Dar patadas en el suelo violentamente y con prisa por enfado o pesar.	

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Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
patear1 *[to stamp one's feet on the ground showing one is angry]*	Self-c		Figure (body part: feet) + Manner	2		Iterative Motion; State of Figure (angry)	[intransitive verb] Dar patadas en el suelo en señal de enfado. Patalear.	[transitive verb] coloq. Dar golpes con los pies. [intransitive verb] coloq. Dar patadas en señal de enojo, dolor o desagrado.	
patear2 *[to go on foot around a place]*	Transl		Manner	1		mp-walk	de «pata» [transitive verb] (inf.) Recorrer a pie un lugar	[intransitive verb] coloq. Andar mucho, haciendo diligencias para conseguir algo.	*mp-walk*
patinar *[to skate]*	Transl		Manner	1		Vehicle / Instrument (skate)	[intransitive verb] Deslizarse sobre patines.	[intransitive verb] Deslizarse o ir resbalando con patines sobre el hielo o sobre un pavimento duro, llano y muy liso.	
patrullar *[to patrol]*	Transl		Manner + Cause	2		Vehicle / Instrument (patrol car)	[intransitive and transitive verb] Permanecer en un lugar recorriéndolo para vigilarlo o mantener el orden en él.	[intransitive verb] Dicho de una patrulla: rondar. U. t. c. tr [i.e., also used as transitive verb]	
pavonearse *[to strut about]*	Transl		Manner	1		State of the Figure (proud)	[intransitive and pronominal verb] Mostrar alguien en su actitud que está satisfecho de sí mismo y se considera importante o superior a los otros.	[intransitive verb] Dicho de una persona: Hacer vana ostentación de su gallardía o de otras prendas. U. m. c. prnl. [i.e., most commonly used as pronominal verb]	*mp-walk*
pedalear *[to pedal; to move by pushing pedals down with one's feet]*	Transl		Manner	1		Vehicle / Instrument (pedal)	[intransitive verb] Mover con los pies los pedales de la bicicleta u otra cosa semejante.	[intransitive verb] Poner en movimiento un pedal, y especialmente el de los velocípedos y bicicletas.	
penetrar *[to enter]*	Transl		Path	1	into G		(del lat. «peneträre») [intransitive verb] Pasar una cosa desde el exterior al interior de un recinto	[transitive verb] Introducirse en un lugar. U. m. c. intr. [most commonly used as intransitive verb]	
perseguir *[to chase]*	Transl		Path	1	after G		el lat. «persequi» [transitive verb] Seguir a alguien que huye para cogerle.	[transitive verb] Seguir a quien va huyendo, con ánimo de alcanzarle.	

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Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
pilotar *[(ship) to steer; (car) to drive; (plane) to fly]*	Transl		Manner	1		Vehicle / Instrument (ship, airplane, car)	[transitive verb] Mar. Dirigir un barco, especialmente a la entrada de un puerto o en sitios con dificultades. Conducir como piloto otra cosa cualquiera.	[transitive verb] Dirigir un buque, especialmente a la entrada o salida de puertos, barras, etc. [transitive verb] Dirigir un automóvil, globo, aeroplano, etc.	
pirarse *[to go away]*	Transl		Path	1	away from G (departure, source)		(de «pira» = de origen caló; inf.) [pronominal verb] Marcharse.	[pronominal verb] Fugarse, irse.	
piruetear *[to pirouette]*	Self-c		Manner	1		Revolve, Rotate, Spin	[intransitive verb] Hacer piruetas.	[intransitive verb] Hacer piruetas.	
pisar *[to tread]*	Transl		Figure (body part: feet) + Manner	2		mp-walk	(del lat. vg. «pinsare») [intransitive verb] Poner alternativamente los pies en el suelo al andar.	[transitive verb] Poner sucesivamente los pies en el suelo al andar. U. m. c. [most commonly used as intransitive verb]	*Low ratings. No significant difference*
pisotear *[to tread repeatedly and violently over something]*	Self-c		Figure (body part: feet) + Manner	2		Iterative Motion; Violent Motion	[transitive verb] Pisar algo violenta y repetidamente, con lo que se lo destroza o estropea	[transitive verb] Pisar repetidamente, maltratando o ajando algo.	*Low ratings. No significant difference*
planear *[(of a plane, a bird) to glide]*	Transl		Manner + Ground (air)	2		Smooth Motion	[intransitive verb] Mantenerse un avión en el aire, moviéndose o descendiendo, sin motor. [intransitive verb] Mantenerse un ave en el aire con las alas extendidas e inmóviles.	[intransitive verb] Aer. Dicho de un avión: Descender en planeo. [intransitive verb] Dicho de un ave: Volar con las alas extendidas e inmóviles.	
posarse *[to alight]*	Transl		Path + Manner	2	down onto G (arrival, endpoint)	mp-fly	[intransitive verb and pronominal verb] del lat. «pausare» Detenerse las aves, mariposas, etc., en cierto sitio, después de volar.	[intransitive verb] Dicho de un ave u otro animal que vuela, o de un avión o un aparato astronáutico: Situarse en un lugar o sobre una cosa después de haber volado. U. t. c. prn [i.e., also used as pronominal verb]	

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
precipitar (se)1 *[to (cause to) fall down from a high place]*	Transl	AM	Path + Manner	2	Earth-based orientation: downwards	Forced Motion (Energy-high)	[transitive verb] del lat. «praecipitare»; Lanzar una cosa por un precipicio. Despeñar. (más usado con referencia a personas; «desde, por») Lanzar una cosa desde un sitio alto. [pronominal verb] Lanzarse desde lo alto.	[transitive verb] Despeñar, arrojar o derribar de un lugar alto. U. t. c. prn [i.e., also used as pronominal verb]	
precipitarse2 *[to run, to hurry to]*	Transl		Path + Manner	2	to/towards G	mp-run	[intransitive verb] Acudir corriendo a un sitio.	NO FOUND IN DRAE	*mp-run / mp-jump*
profundizar *[to get into]*	Transl		Path	1	into G		[intransitive verb] («en») Llegar hasta más o menos dentro de una cosa.	[transitive verb] ahondar. U. m. c. [i.e., most commonly used as intransitive verb]	
rabear *[(of an animal) to wag]*	Self-c		Figure (body part: tail)	1			[intransitive verb] Menear el rabo.	[intransitive verb] Dicho de un animal: Menear el rabo hacia una parte y otra.	
rastrear1 *[to fly along at ground level]*	Transl		Ground (at ground level)+ Manner	2		mp-fly	(de «rastro») [intransitive verb] Volar casi a ras de tierra.	[intransitive verb] Ir por el aire, pero casi tocando el suelo.	
rastrear2 *[to track]*	Transl		Path + Manner	2	after G	Furtive Motion	[transitive verb] Perseguir o buscar a alguien o algo siguiendo sus huellas, materiales o no materiales.	[transitive verb] Seguir el rastro o buscar algo por él.	*mp-walk / mp-run*
rebotar *[to bounce]*	Self-c		Manner	1		Bounce	[intransitive verb] Botar una pelota, una bola o cosa semejante en el sitio a donde ha ido a chocar en un primer bote.	[intransitive verb] Dicho de un cuerpo elástico: Botar repetidamente, ya sobre el terreno, ya chocando con otros cuerpos.	
reclinar (se) *[to lean]*	Self-c	AM	Manner	1		Posture (towards horizontal)	(del lat. «reclinare»; «contra, en, sobre») [transitive verb] Inclinar una cosa apoyándola en otra. Inclinar y apoyar la cabeza; [pronominal verb] Apoyarse en algo inclinándose.	[transitive verb] Dicho de una cosa, especialmente del cuerpo o parte de él: Inclinarlo apoyándolo en otra cosa. U. t. c. prn [i.e., also used as pronominal verb]	

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
recorrer *[to move, go around a place]*	Transl		(Motion) + Ground	1			(del lat. «recurrere») [transitive verb] Ir sucesivamente a distintas partes de un lugar.	[transitive verb] Atravesar un espacio o lugar en toda su extensión o longitud. [transitive verb] Efectuar un trayecto.	*mp-walk*
recostar (se) *[to (cause to) lean or to lie down]*	Self-c	AM	Manner	1		Posture (horizontal)	(de «re-» y «costa», costilla) [transitive verb] («en, sobre») Apoyar una cosa en algún sitio, en posición inclinada; por ejemplo, la cabeza o la parte superior del cuerpo. Reclinar. («en, sobre») [pronominal verb] Ponerse en un sillón, en la cama, etc.,	[transitive verb] Dicho de quien está de pie o sentado: Reclinar la parte superior del cuerpo. U. t. c. prn [i.e., also used as pronominal verb]. [transitive verb] Inclinar algo sobre otra cosa. U. t. c. prn [i.e., also used as pronominal verb]. [pronominal verb] Acostarse durante un breve período de tiempo.	
regatear *[to dribble]*	Transl		Manner	1		Motion in sports	[transitive verb] Hacer regates; particularmente, en ciertos deportes.	[intransitive verb] Hacer regates.	*mp-walk / mp-run*
regresar *[to come back]*	Transl		Path	1	back to G		(de «regreso») (del lat. «regressus») [intransitive verb and pronominal verb] Ir de nuevo a un sitio de donde se ha salido. Retornar, volver.	[intransitive verb] Volver al lugar de donde se partió.	
remar *[to row]*	Transl		Manner	1		Vehicle / Instrument (oar, paddle)	[intransitive verb] Mover los remos para impulsar una embarcación.	[intransitive verb] Trabajar con el remo para impeler la embarcación en el agua.	
remontar *[to go up, to swim up, to soar]*	Transl	AM	Path	1	Earth-based orientation: upwards		[transitive verb] Subir una cosa. Subir por cierto sitio.	[transitive verb] Subir una pendiente, sobrepasarla. Navegar aguas arriba en una corriente. Subir o volar muy alto las aves, Ascender por el aire. [pronominal verb] Subir, ir hacia arriba.	
renquear *[to limp]*	Transl		Manner	1		mp-walk; Forced Motion; State of Figure (injured)	[intransitive verb] Cojear como lo hace un renco.	[intransitive verb] Andar o moverse como renco, oscilando a un lado y a otro a trompicones.	*mp-walk*
repatriar *[to repatriate, (cause to) go back to one's country]*	Transl	AM	Path + Ground (country)	2	back to G		(del lat. «repatriare») [transitive verb] Devolver a su patria a alguien que está expatriado. [pronominal verb] Volver a su patria el que está expatriado.	[transitive verb] Devolver algo o a alguien a su patria. U. t. c. [i.e., also used as i.e., also used as]. [intransitive verb] y m. c. [pronominal verb]	

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
reptar *[to crawl like a reptile]*	Transl		Manner	1		mp-walk; Animal-like → Contact [between F and G]	[intransitive verb] Andar con el cuerpo tocando el suelo, como los reptiles.	[intransitive verb] Andar arrastrándose como algunos reptiles.	
resbalarse *[to slide]*	Transl		Manner	1		Contact [between F and G]; Smooth Motion; Uncontrolled motion?	del antig. y dial. «resvarar», de «re-» y «esvarar») [intransitive verb and pronominal verb] («en, por, sobre, entre») Moverse una cosa rozando suavemente sobre una superficie.	[intransitive verb] Desplazarse involuntariamente sobre una superficie lisa o viscosa sin dejar de rozarla, normalmente con alteración del equilibrio. Resbalan los pies sobre el hielo. U. t. c. prn [i.e., also used as pronominal verb]. [intransitive verb] deslizarse (arrastrarse con suavidad por una superficie).	*Low ratings. No significant difference*
retirar (se) *[to remove, to take away; to retreat]*	Transl	AM	Path	1	away from G (departure, source)		[transitive verb] Mover una cosa para que deje de estar en contacto con otra o próxima a otra que se expresa. [pronominal verb] Moverse alguien para dejar de tocar algo o alejarse de ello.	[transitive verb] Apartar o separar a alguien o algo de otra persona o cosa o de un sitio. U. t. c. prn [i.e., also used as pronominal verb]	
retornar *[to return, to go back; to give back]*	Transl	AM	Path	1	back to G		[intransitive verb] Ir o venir de nuevo una cosa al punto de partida o a la situación en que antes estuvo. Regresar, tornar, volver. [transitive verb] Volver a poner algo en el sitio donde estaba o en una situación que antes tuvo. Devolver.	[intransitive verb] Volver al lugar o a la situación en que se estuvo. U. t. c. prn [i.e., also used as pronominal verb] [transitive verb] Devolver.	
retozar *[to frolic]*	Transl		Manner	1		Playful Motion	[intransitive verb] Jugar, por ejemplo los niños o los animales jóvenes, corriendo, brincando, persiguiéndose unos a otros, etc.	[intransitive verb] Saltar y brincar alegremente.	*Low ratings. No significant difference*
retroceder *[to go back, to back down]*	Transl		Path	1	back to G / backwards		del lat. «retrocedere») [intransitive verb] («a, de, en») Marchar hacia atrás.	[intransitive verb] Volver hacia atrás.	

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
revolotear *[to (cause to) fly around, to flutter]*	Transl	AM	Manner+ Ground (air)	2		mp-fly; Revolve, Rotate, Spin (turn around)	[intransitive verb] Volar alrededor de algo o haciendo giros en un corto espacio. Moverse una cosa ligera, por ejemplo un papel, en el aire.[transitive verb] Lanzar una cosa al aire de modo que vaya dando vueltas.	[intransitive verb] Volar haciendo tornos o giros en poco espacio. Venir una cosa por el aire dando vueltas. [transitive verb] Arrojar algo a lo alto con ímpetu, de suerte que parece que da vueltas.	
rodar *[to roll]* **(rular)**	Self-c / Transl		Manner	1		Revolve, Rotate, Spin	(del lat. «rotāre») [intransitive verb] Dar vueltas una cosa sobre una superficie, trasladándose de lugar al darlas; como una pelota o las ruedas de un carro. [intransitive verb] Dar vueltas una cosa alrededor de un eje.	[intransitive verb] Dicho de un cuerpo: Dar vueltas alrededor de un eje, sin mudar de lugar, como la piedra de un molino, o mudando, como la bola que corre por el suelo.	
rodear *[to surround with; to go round]*	Self-c	AM	Manner	1		Path-shape	[transitive verb] Estar una cosa alrededor de otra. Colocarse varias personas, animales, etc., alrededor de un sitio. [intransitive verb] Poner una cosa alrededor de otra.	[intransitive verb] Andar alrededor. [transitive verb] Poner una o varias cosas alrededor de otra. U. t. c. prn [i.e., also used as pronominal verb]	
rondar *[to be on patrol; to prowl about, around]*	Transl		Manner + Cause	2		mp-walk	[transitive verb] Hacer ronda de vigilancia o salir los mozos de ronda por algún sitio. Recorrer los puestos de vigilancia de una plaza fuerte o un campamento para inspeccionarlos. [transitive verb] Seguir a una persona, acercarse a ella o hablarle con frecuencia para conseguir de ella cierta cosa	[transitive verb] Dar vueltas alrededor de algo. [intransitive verb] Andar de noche paseando las calles. U. t. c. tr [i.e., also used as transitive verb]. [intransitive verb] Andar de noche visitando una población para impedir los desórdenes. U. t. c. tr [i.e., also used as transitive verb]	
rotar *[to rotate]*	Self-c		Manner	1		Revolve, Rotate, Spin	(del lat. «rotāre») [intransitive verb] Rodar, dar vueltas alrededor de un eje.	[intransitive verb] rodar (dar vueltas alrededor de un eje).	
sacudir (se) *[to shake; to shake oneself]*	Self-c	AM	Manner	1		Shake, Swing, Vibrate	[transitive verb] Mover una cosa con brusquedad, bien haciéndola dar un chasquido en el aire, bien a un lado y a otro; [pronominal verb] (del lat. «succutere») Quitarse una cosa que se lleva encima con movimientos del cuerpo.	[transitive verb] Mover violentamente algo a una y otra parte. U. t. c. prn [i.e., also used as pronominal verb].	

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
salir *[to exit, to go out of]*	Transl		Path	1	out of G		(del lat. «salire», saltar) [intransitive verb] («a, de») Ir fuera de un sitio. Salir de casa. [pronominal verb] Marcharse una persona de cierto sitio. Marcharse un animal del sitio en que está encerrado. [pronominal verb] Marcharse una persona de cierto sitio. Marcharse un animal del sitio en que está encerrado.	[intransitive verb] Pasar de dentro a fuera. U. t. c. prn [i.e., also used as pronominal verb]. [intransitive verb] Partir de un lugar a otro.	
saltar *[to jump]*	Self-c / Transl ?		Manner	1		mp-jump	(Del lat. saltāre, intens. de salīre). [intransitive verb] Levantarse una cosa con un impulso súbito, del suelo o del sitio en que está, vertical u oblicuamente, para caer en el mismo sitio o en otro que esté al mismo nivel o más alto o más bajo. [transitive verb] Saltar o pasar por encima de algo.	[intransitive verb] Alzarse con impulso rápido, separándose de donde se está. [transitive verb] Salvar de un salto un espacio o distancia.	*Hyperonym*
seguir *[to follow]*	Transl		Path	1	after G		(del sup. lat. «sequĭre», de «sequi»; frec. con «a», aunque el complemeno directo sea de cosa) [transitive verb] En una marcha, ir después o detrás de cierta cosa.	[transitive verb] Ir después o detrás de alguien. U. t. c. [i.e., also used as i.e., also used as]. [intransitive verb]	
sentar (se) *[to (cause to) sit down]*	Self-c	AM	Manner	1		Posture (vertical-downwards)	Del lat. sedentare, de sedens, -entis. tr. Forma causativa de «sentarse». [pronominal verb] Tomar la postura que consiste en descansar con las nalgas apoyadas en algún sitio.	[transitive verb] Poner o colocar a alguien en una silla, banco, etc., de manera que quede apoyado y descansando sobre las nalgas. U. t. c. prn [i.e., also used as pronominal verb]	
serpentear *[to slither, to meander]*	Transl		Manner	1		Animal-like → Path-shape	[intransitive verb] Deslizarse formando ondas. Formar ondas un camino, el curso de un río, etc.	[intransitive verb] Andar, moverse o extenderse, formando vueltas y tornos como la serpiente.	*mp-walk*
subir *[to ascend, to (cause to) go up]*	Transl	AM	Path	1	up/onto G; Earth-based orientation: upwards		del lat. «subĭre»(«a») [intransitive verb] y [pronominal verb] Ir de un sitio a otro más alto.	[transitive verb] Recorrer yendo hacia arriba, remontar. [transitive verb] Trasladar a alguien o algo a lugar más alto que el que ocupaba. Subir a un niño en brazos.	

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
sumergir (se) *[to (cause to) go down into water]*	Transl	AM	Ground (water) + Path	2	down into G		(del lat. «submergere») [transitive verb] Introducir una cosa en agua u otro líquido, de modo que quede completamente cubierta. [pronominal verb] Hundirse debajo de la superficie del agua o de otro líquido.	[transitive verb] Meter algo debajo del agua o de otro líquido. U. t. c. prn [i.e., also used as pronominal verb]	
taconear *[to tap shoes (usually when walking or dancing)]*	Self-c / Transl		Manner	1		Noisy activity; DANCE; Vehicle / Instrument (heels-shoes);	[intransitive verb] Golpetear con los tacones en el suelo al andar deprisa, cosa que hacen particularmente las mujeres con los tacones altos. O hacerlo rítmicamente en ciertos bailes. Zapateado.	[intransitive verb] Pisar con fuerza o brío, produciendo ruido. [intransitive verb] En ciertos bailes, mover rítmicamente los pies haciendo ruido con los tacones en el suelo. U. t. c. tr [i.e., also used as transitive verb]	*mp-walk*
tambalearse *[to move unsteadily as if it is going to fall]*	<u>Self-c</u>		Manner	1		Unsteady Motion	[intransitive verb and pronominal verb] Moverse algo o alguien muy acusadamente a un lado y a otro manteniendo fijo algún punto, como si se fuese a caer.	[intransitive verb] Moverse a uno y otro lado, como si se fuese a caer. U. m. c. prn [i.e., most commonly used as pronominal verb]	*mp-walk*
temblar *[to shiver, to tremble]*	Self-c		Manner	1		Shake, Swing, Vibrate	(del lat. «tremulare») [intransitive verb] («de»: 'de frío, de miedo'; «con»: 'con el susto') Aplicado a personas y cosas, moverse con sacudidas de muy poca amplitud y muy rápidas	[intransitive verb] Agitarse con sacudidas de poca amplitud, rápidas y frecuentes.	
tender (se) *[to (cause to) stretch, to lay/lie down]*	Self-c	AM	Manner	1		Posture (horizontal)	[transitive verb] Extender una cosa horizontalmente. [transitive verb and pronominal verb] tumbar[se].	[pronominal verb] Echarse, tumbarse a la larga.	
tirar (se) *[to throw; to throw oneself]*	Transl	AM	Manner	1		Forced Motion (Energy-high)	[transitive verb] Lanzar una cosa que se tiene cogida por la mano. [pronominal verb] Lanzarse desde un lugar.	[transitive verb] Dejar caer intencionadamente algo. [transitive verb] Arrojar, lanzar en dirección determinada. NO FOUND AS PRONOMINAL VERB	
tiritar *[to shiver, to tremble]*	Self-c		Manner	1		Shake, Swing, Vibrate	[intransitive verb] Temblar de frío o por efecto de la fiebre.	[intransitive verb] Temblar o estremecerse de frío o por causa de fiebre, de miedo, etc.	

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
torcer (se)1 *[to turn, to change direction]*	Transl		Path	1	Change direction		(del lat. «torquëre») [pronominal verb] Desviarse del camino debido o de la marcha favorable o conveniente; [intransitive verb] Cambiar de dirección al marchar, conducir un vehículo, etc.	[transitive verb] Dicho de una persona o de una cosa: Desviar la dirección que llevaba, para tomar otra. U. t. c. [i.e., also used as intransitive verb]	
torcer (se)2 *[to (cause to) bend]*	Self-c	AM	Manner	1		Posture (Bend, Twist, Curve)	[transitive verb and pronominal verb] Poner[se] curva o formando ángulo una cosa.	[transitive verb] Encorvar o doblar algo. U. t. c. prn [i.e., also used as pronominal verb] [transitive verb] Alterar la posición recta, perpendicular o paralela que algo tiene con respecto a otra cosa. U. t. c. prn [i.e., also used as pronominal verb]	
transitar *[to go along a place or way]*	Transl		**(Motion) + Ground**	1			[intransitive verb] Andar por una calle, camino, etc., para ir de un sitio a otro	[intransitive verb] Ir o pasar de un punto a otro por vías o parajes públicos. [intransitive verb] Viajar o caminar haciendo tránsitos.	
traquetear *[to (cause to) move repeatedly, to rattle]*	Self-c	AM	Manner	1		Iterative Motion; Noisy Motion	[transitive and intransitive verb] Mover[se] reiteradamente una cosa, produciendo ruido.	[transitive verb] Mover o agitar algo de una parte a otra. [intransitive verb] Hacer ruido, estruendo o estrépito.	
trasladar (se) *[to (cause to) move from one place to another]*	Transl	AM	**(Motion)**				[transitive verb] Cambiar de lugar una cosa o a una persona. [pronominal verb] Cambiarse de lugar una persona o una cosa.	[transitive verb] Llevar a alguien o algo de un lugar a otro. U. t. c. prn [i.e., also used as pronominal verb]	
trepar *[to climb]*	Transl		Path + Manner	2	up/onto G	Use of one's hands and legs	[intransitive verb] Subir a un lugar escarpado o alto valiéndose de los pies y las manos.	[intransitive verb] Subir a un lugar alto o poco accesible valiéndose y ayudándose de los pies y las manos. U. t. c. tr [i.e., also used as transitive verb]	

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
trompicar *[to (cause to) trip repeatedly]*	Transl	AM	Manner	1		Obstructed Motion; Iterative Motion; mp-walk?	[intransitive verb] Tropezar repetidamente.	[transitive verb] Hacer a alguien tropezar violenta y repetidamente. [intransitive verb] Dar pasos tambaleantes, tumbos o vaivenes.	
tropezar *[to trip]*	Transl		Manner	1		Obstructed Motion; mp-walk?	(del sup. lat. vg. «interpediare») [intransitive verb and pronominal verb] («con, contra, en») Chocar involuntariamente con alguien o algo al ir andando.	[intransitive verb] Dicho de una persona: Dar con los pies en un obstáculo al ir andando, con lo que se puede caer.	*mp-jump*
trotar1 *[(of a horse, human) to trot)*	Transl		Manner	1		mp-walk; Rate-fast	(el alto al. medio «trotten», correr) [intransitive verb] Andar las caballerías con paso ligero levantando a la vez el pie y la mano de distinto lado.	[intransitive verb] Dicho de un caballo: Ir al trote. [intransitive verb] coloq. Dicho de una persona: Andar mucho o con celeridad.	*High ratings. No significant difference*
trotar2 *[(of a person) to ride a horse which is trotting]*	Transl		Manner	1		Vehicle / Instrument (horse)	[intransitive] Cabalgar sobre un caballo que trota.	[intransitive verb] Dicho de una persona: Cabalgar en caballo que va al trote.	*High ratings. No significant difference*
vacilar *[to move unsteadily]*	Self-c		Manner	1		Unsteady Motion	(del lat. «vacillare») [intransitive verb] Moverse una cosa o una persona a un lado y a otro por falta de estabilidad.	[intransitive verb] Dicho de una cosa: Moverse indeterminadamente. Dicho de una cosa: Estar poco firme en su estado, o tener riesgo de caer o arruinarse.	
vadear *[to wade, to ford a river]*	Transl		Path + Ground (river)	2	pass/cross G (traversal)		(de «vado») [transitive verb] Atravesar un río a pie, en caballería o en un vehículo.	[transitive verb] Pasar un río u otra corriente de agua profunda por el vado o por cualquier otro sitio donde se pueda hacer pie.	
vagabundear *[to wander]*	Transl		Manner	1		mp-walk; No aim in Motion		[intransitive verb] Andar vagabundo.	
vagar *[to wander]*	Transl		Manner	1		mp-walk; No aim in Motion	vagar (del lat. «vagari») [intransitive verb] Andar sin dirección o destino fijos	[intransitive verb] Andar por varias partes sin determinación a sitio o lugar, o sin especial detención en ninguno.	*mp-walk*

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
venir *[to come]*	Transl		Path	1	Deixis: towards G (speaker)		(del lat. «venire») [intransitive verb] («a, de, por») Andar o moverse hacia el lugar donde está el que habla. Llegar al sitio donde está el que habla para quedarse en él. prnl. Forma empleada en vez de «venir» cuando al significado de «llegar» se añade el de «dejar» el lugar de donde se parte.	[intransitive verb] Dicho de una persona: caminar. Dicho de una persona o de una cosa: Llegar a donde está quien habla.	
viajar *[to travel]*	Transl		Manner	1		Leisurely Motion; Vehicle / Instrument?	[intransitive verb] Trasladarse de un lugar a otro distante. Visitar diversos lugares o recorrer diversos países.	[intransitive verb] Trasladarse de un lugar a otro, generalmente distante, por cualquier medio de locomoción.	
vibrar *[to vibrate]*	Self-c		Manner	1		Shake, Swing, Vibrate	(del lat. «vibrare») [intransitive verb] Moverse un cuerpo o una parte de él entre dos posiciones próximas, con movimiento rápido y alternativo de la una a la otra.	[intransitive verb] Mec. Dicho de un cuerpo elástico: Oscilar alternativamente en torno a su posición de equilibrio.	
virar *[(of a vehicle, esp. a ship) to swerve]*	Transl		Path	1	Change direction		quizá del sup. celtolat. «virare», con influencia del fr. y del port. [intransitive verb] («a, hacia») Volverse cambiando de dirección o de orientación, particularmente un vehículo en marcha y más particularmente un barco	[transitive verb] Mar. Cambiar de rumbo o de bordada, pasando de una amura a otra, de modo que el viento que daba al buque por un costado le dé por el opuesto. U. t. c. [i.e., also used as intransitive verb]. [intransitive verb] Mudar de dirección en la marcha de un automóvil u otro vehículo semejante.	
volar *[to move on the air, to fly]*	Transl		Ground (air)	1			(del lat. «volare») [intransitive verb] («Echarse a») Moverse por el aire. Se aplica lo mismo a las aves u otro animal como a los aviones o cualquier cosa más pesada que el aire que se sostenga y mueva en él.	[intransitive verb] Ir o moverse por el aire, sosteniéndose con las alas. [intransitive verb] Elevarse en el aire y moverse de un punto a otro en un aparato de aviación.	
zambullir (se) *[to (cause to) go down into water in a violent way]*	Transl	AM	Path + Ground (water) + Manner	3	down into G	Forced Motion (Energy-high)	[transitive verb] Sumergir una cosa bruscamente o sin pensarlo en un líquido (o en un recipiente que lo contenga). [pronominal verb] Sumergirse alguien en el agua bruscamente.	[transitive verb] Meter debajo del agua con ímpetu o de golpe. U. t. c. prn [i.e., also used as pronominal verb]	

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
zancajear *[to walk repeatedly from one place to another]*	Transl		Manner	1		mp-walk; Iterative motion from one place to another	[intransitive verb] Andar mucho, yendo de un lado para otro.	[intransitive verb] Andar mucho de una parte a otra, por lo común aceleradamente.	*mp-walk*
zanquear1 *[to walk with crooked legs]*	Transl		Manner	1		mp-walk; Characteristic use of lower body (Legs-crooked)	[intransitive verb] Torcer las piernas al andar.	[intransitive verb] Torcer las piernas al andar.	*mp-walk*
zanquear2 *[to stride]*	Transl		Manner	1		mp-walk; Characteristic use of lower body (Steps-long)	[intransitive verb] Andar a grandes pasos. Ir a grandes pasos o con prisa de un lado para otro, por ejemplo haciendo gestiones.	[intransitive verb] Andar mucho a pie y con prisa de una parte a otra.	
zaparrastrar *[to move or to walk dragging one's clothing]*	Transl		Manner	1		Trailing clothes	[intransitive verb] Ir arrastrando los vestidos.	[intransitive verb] coloq. Llevar arrastrando los vestidos de modo que se ensucien. Ir zaparrastrando.	*mp-walk*
zapatear *[to tap shoes (usually when walking or dancing)*	Self-c / Transl		Manner	1		Noisy activity; DANCE; Vehicle / Instrument (shoes);	[transitive verb] Golpear el suelo con los pies calzados. Pisar. Hacerlo así en el baile, lo cual, realizado con los tacones y con ritmo muy vivo, constituye un paso de ciertas danzas españolas.	[transitive verb] Golpear con el zapato. [transitive verb] Acompañar al tañido dando palmadas y alternativamente con las manos en los pies, siguiendo el mismo compás, especialmente en el baile del villano.	*mp-walk / mp-jump*

Spanish Motion Verb	Motion	AM	Semantic Components	#	Path details	Manner details	Dictionary Definition (DUE)	Dictionary Definition (DRAE)	Motor pattern Rating Study
zarpar *[(of a ship) to set off]*	Transl		Path	1	away from G (departure, source)		(del it. antig. «sarpare») [intransitive verb] Marcharse un barco del sitio en que está anclado.	[intransitive verb] (Del it. ant. sarpare, este de serpe, espacio de la proa donde se ponía el ancla al zarpar, y este del lat. serpens, serpiente, por los maderos en forma de serpentina que delimitaban ese espacio). Dicho de un barco o de un conjunto de ellos: Salir del lugar en que estaban fondeados o atracados.	
zigzaguear *[to zigzag]*	Transl		Manner	1		Path-shape	[intransitive verb] Moverse describiendo una línea en zigzag.	[intransitive verb] Serpentear, andar en zigzag.	*mp-walk*

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APPENDIX 3

INSTRUCTIONS FOR EXPERIMENTAL STUDIES

INSTRUCTIONS FOR STUDY 1

DEFINITION AND FEATURE LISTING[1]

ENGLISH:

What is TO MOVE? In other words, which are the features that define the action of MOVING?

What is TO WALK? In other words, which are the features that define the action of WALKING?

What is TO RUN? In other words, which are the features that define the action of RUNNING?

What is TO JUMP? In other words, which are the features that define the action of JUMPING?

SPANISH:

¿Qué es MOVERSE? Es decir, ¿cuáles son las características que definen la acción de MOVERSE?

¿Qué es ANDAR? Es decir, ¿cuáles son las características que definen la acción de ANDAR?

¿Qué es CORRER? Es decir, ¿cuáles son las características que definen la acción de CORRER?

¿Qué es SALTAR? Es decir, ¿cuáles son las características que definen la acción de SALTAR?

---

[1] Recall that participants were given only one of the four questions.

INSTRUCTIONS FOR STUDY 2

FREE VERB LISTING[2]: ENGLISH

Welcome!

This study is being carried in different countries on different languages. We would like to know how your language expresses the ways in which people move. You will be asked to answer a question by providing **a list of verbs** on the back of this page.

Please, do not turn the page yet!

You will have 1 minute to perform this task. I will let you know when to start and when to stop.

Thanks for your collaboration!

---

[2] Recall that participants were given only one of the following questions: *In what ways can a human move? In what ways can a human walk? In what ways can a human run? In what ways can a human jump?*

INSTRUCTIONS FOR STUDY 2

FREE VERB LISTING[3]: SPANISH

¡Bienvenido!

Este estudio se está llevando a cabo en diferentes países y sobre idiomas distintos. Nos gustaría saber como tu idioma expresa las maneras en las que la gente se mueve. Tienes que responder una pregunta dando un **listado de verbos** en el reverso de esta página.

Por favor, no des la vuelta a la página aún.

Tendrás un minuto para hacer esta tarea. Te diremos cuando comenzar y cuando terminar.

¡Muchas gracias por tu colaboración!

---

[3] Recall that participants were given one of the following four questions: *¿De qué modos puede una persona moverse? ¿De qué modos puede una persona andar?¿De qué modos puede una persona correr?¿De qué modos puede una persona saltar?*

INSTRUCTIONS FOR STUDY 3

RATING STUDY[4]: ENGLISH

Welcome to this study!

This booklet contains a list of questions grouped into three blocks. Each question is followed by a rating scale. Your task is to answer the questions by marking an X on the scale.

For example:

Is SIPPING a way of DRINKING?

| X——|

Definitely   Not sure   Definitely not
a way   a way   a way
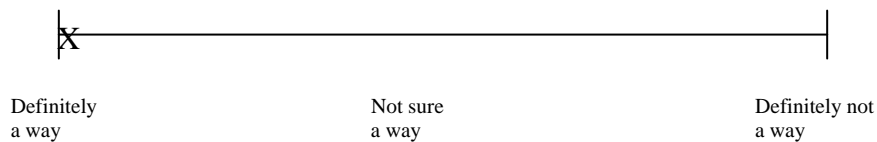
Is SLEEPING a way of WORKING?

|——X|

Definitely   Not sure   Definitely not
a way   a way   a way
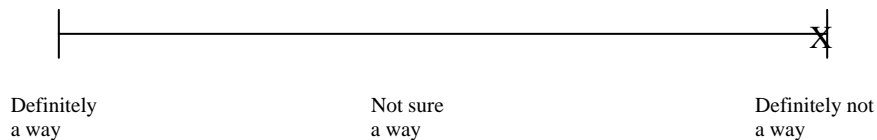
There are no right or wrong answers, we are just interested in your judgements. Please answer each question in turn, and do not skip any questions, or look ahead in the booklet.

If you have any questions or concerns, please ask the experimenter now.

Thanks for your collaboration!

---

[4] These instructions correspond to the *way of* question. Recall that half of the English participants got the *way of* question and half the *kind of* question. The instructions were the same except for the use of *kind of* instead of *way of*.

INSTRUCTIONS FOR STUDY 3

RATING STUDY[5]: SPANISH

¡Bienvenido a este estudio!

Este cuadernillo contiene una serie de preguntas divididas en tres bloques. Cada pregunta va seguida de una escala. Tienes que responder cada pregunta escribiendo una X en la escala.

Por ejemplo:

¿Es SORBER una manera de BEBER?

Absolutamente es una manera	No es seguro una manera	Definitivamente no es una manera
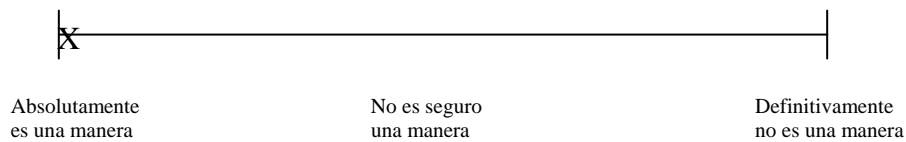
¿Es DORMIR una manera de TRABAJAR?

Absolutamente es una manera	No es seguro una manera	Definitivamente no es una manera
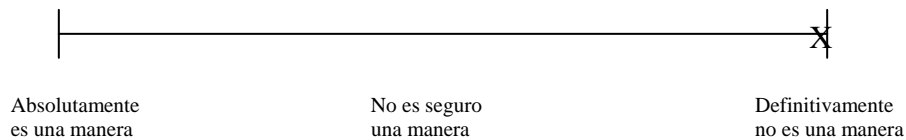
No hay respuesta correcta o errónea, simplemente nos interesa tu opinión. Por favor, ve respondiendo cada pregunta sin saltarte ninguna y sin mirar más adelante.

Si tienes alguna pregunta o comentario, por favor pregunta al experimentador ahora.

¡Gracias por tu colaboración!

---

[5] Recall that half of the Spanish participants got the *manera de* question and half the *tipo de* question.

APPENDIX 4

MANNER VERBS FROM THE FREE LISTING STUDY

ENGLISH AND SPANISH MANNER VERBS PER CATEGORY (ALPHABETICAL ORDER)

MOVE			WALK		RUN	JUMP	MOVERSE		ANDAR	CORRER	SALTAR
bend	snowboard	wave	amble	step	dart	bounce	agacharse	saltar	arrastrarse	acelerar	agacharse
bicycle, bike	spring	wiggle	careen	storm	gallop	bound	andar	sentarse	brincar	aligerar	andar
bounce	sprint	wobble	frollick	stretch	hop	flip	arrastrarse	tambalearse	caminar	andar	bailar
climb	squat		gallop	stride	jog	glide	bailar	temblar	cojear	apresurarse	botar
crawl	step		glide	stroll	leap	hop	balancearse	trepar	correr	arrastrarse	brincar
dance	stomp		hop	strut	race	jump	brincar	trotar	corretear	brincar	cojear
drive	stretch		jog	travel	skip	leap	bucear	viajar	deambular	caminar	correr
duck-walk	stroll		jump	trot	speed	lift	caminar	volar	deslizarse	corretear	girar
flee	strut		limp	waddle	sprint	push	cojear		esprintar	galopar	impulsarse
fly	stumble		lope		trample	release	conducir		gatear	gatear	rebotar
glide	sway		lumber		walk	rise	correr		pasear	huir	tambalearse
hop	swim		march			run	deslizarse		patear	pasear	tirarse
jog	swing		moonwalk			skip	esquiar		pedalear	saltar	trotar
jump	teeter		pace			spring	gatear		rondar	trotar	
leap	throw		power-walk				girarse		saltar	zanquear	
pace	tiptoe		propel				haldar		trotar		
run	totter		run				huir		vagabundear		
shake	trip		saunter				levantarse		vagar		
shiver	trot		sidle				nadar				
shuffle	turn		skip				pasear				
skate	twirl		slide				patear				
ski	twist		slither				patinar				
skip	waddle		sneak				pedalear				
slide	walk		sprint				reptar				
slither	waltz		stamp				saltar				
53 TYPES			**34 TYPES**		**11 TYPES**	**14 TYPES**	**32 TYPES**		**18 TYPES**	**15 TYPES**	**13 TYPES**

APPENDIX 5

DATA FROM RATING STUDY

ENGLISH DATA FROM RATING STUDY

VERB	ANOVAs		MEAN WALK	sd	se	MEAN RUN	sd	se	MEAN JUMP	sd	se	Paired t-test with Bonferroni correction
amble	F(2,51) = 68.165	walk>run-jump	85,11	24,70	5,82	13,22	15,45	3,64	12,28	23,12	5,45	
bolt	F(2,51) = 11.312	run>walk-jump	37,33	37,09	8,74	86,06	24,46	5,77	39,83	40,24	9,48	
bounce	F(2,51) = 15.553	jump>walk>run	38,72	38,92	9,17	32,39	39,37	9,28	90,39	21,21	5,00	
bound	F(2,51) = 0.738, p = 0.483		50,89	33,18	7,82	64,78	36,03	8,49	62,33	40,33	9,50	
canter	F(2,51) = 5.734	run> walk-jump	41,72	37,09	8,74	73,28	33,83	7,97	35,72	36,23	8,54	
caper	F(2,51) = 1.627, p = 207		46,89	33,86	7,98	39,39	34,83	8,21	26,94	31,77	7,49	
cavort	F(2,51) = 1.724, p = 0.189		44,94	35,20	8,30	26,50	34,48	8,13	26,11	34,63	8,16	
charge	F(2,51) = 15.960	run>walk>jump	49,67	37,61	8,87	84,33	21,24	5,01	23,94	35,23	8,30	
chase	F(2,51) = 25.186	run>walk>jump	58,11	36,57	8,62	87,11	25,61	6,04	15,78	27,68	6,52	
clump	F(2,51) = 7.702	walk>run>jump	49,28	34,65	8,17	24,22	28,56	6,73	13,22	19,44	4,58	
crawl	F(2,51) = 12.085	walk>run>jump	43,72	40,98	9,66	11,39	15,57	3,67	4,67	5,17	1,22	
creep	F(2,51) = 166.424	walk>run>jump	89,72	12,48	2,94	16,94	21,94	5,17	4,83	6,84	1,61	
dart	F(2,51) = 6.517	run>walk>jump	49,44	36,98	8,72	75,00	39,03	9,20	30,00	36,47	8,60	
dash	F(2,51) = 19.189	run>walk>jump	48,22	38,58	9,09	85,33	31,67	7,46	20,89	31,59	7,45	
dodder	F(2,51) = 20.117	walk>run>jump	72,39	31,38	7,40	24,78	28,83	6,80	17,83	23,48	5,53	
dribble	F(2,51) = 3.174, p = 0.05	run-walk>jump	31,50	33,79	7,96	42,22	39,60	9,33	14,39	25,36	5,98	(walk-run) t(17) = -1.168, p =.259
edge	F(2,51) = 29.151	walk>run>jump	72,00	31,11	7,33	19,89	21,60	5,09	12,39	22,76	5,36	
file	F(2,51) = 7.498	walk>run>jump	41,67	39,02	9,20	21,67	22,60	5,33	6,78	13,20	3,11	(walk-run) t(17) = 1.972, p = 0.065, *marginal significance
flee	F(2,51) = 15.768	run>walk>jump	41,28	36,66	8,64	84,11	21,90	5,16	25,50	36,42	8,58	
flounder	F(2,51) = 1.885, p = 0.162		41,72	35,83	8,45	21,39	32,04	7,55	24,00	34,58	8,15	

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VERB	ANOVAs		MEAN WALK	sd	se	MEAN RUN	sd	se	MEAN JUMP	sd	se	Paired t-test with Bonferroni correction
frisk	$F(2,51) = 0.069$, p = 0.933		**27,89**	28,07	6,62	**29,11**	35,55	8,38	**25,17**	33,55	7,91	
frolic	$F(2,51) = 0.121$, p = 0.866		**38,44**	37,55	8,85	**32,56**	36,11	8,51	**37,22**	39,88	9,40	
gallop	$F(2,51) = 16.409$	run>jump>walk	**28,44**	34,89	8,22	**90,00**	16,07	3,79	**48,39**	42,08	9,92	
gambol	$F(2,51) = 1.225$, p = 0.302		**48,61**	30,08	7,09	**37,83**	31,49	7,42	**31,72**	36,42	8,58	
goosestep	$F(2,51) = 73.015$	walk>run>jump	**85,72**	16,06	3,78	**20,11**	22,51	5,31	**13,33**	20,44	4,82	
hasten	$F(2,51) = 9.555$	run-walk>jump	**44,94**	39,11	9,22	**55,94**	38,84	9,16	**9,83**	15,47	3,65	(walk-run) t(17) = -1.051, p = 0.308
hike	$F(2,51) = 118.999$	walk>run>jump	**93,17**	11,35	2,68	**24,67**	28,17	6,64	**5,33**	6,67	1,57	
hobble	$F(2,51) = 39.775$	walk>run>jump	**89,11**	13,95	3,29	**22,94**	32,44	7,65	**17,61**	30,11	7,10	
hop	$F(2,51) = 40.521$	jump>walk>run	**20,67**	27,78	6,55	**28,94**	35,82	8,44	**94,11**	10,08	2,38	
hound	$F(2,51) = 6.072$	run>walk>jump	**32,00**	31,16	7,34	**54,39**	35,90	8,46	**18,11**	26,83	6,32	
hurry	$F(2,51) = 8.998$	run-walk>jump	**69,39**	39,05	9,20	**65,61**	29,79	7,02	**25,17**	34,55	8,14	(walk-run) t(17) = 0.406, p = 0.690
hurtle	$F(2,51) = 15.954$	run>walk-jump	**28,44**	36,15	8,52	**82,44**	29,48	6,95	**24,11**	37,41	8,82	
inch	$F(2,51) = 20.959$	walk>run-jump	**75,44**	33,46	7,89	**17,89**	31,67	7,46	**16,06**	28,57	6,73	
jog	$F(2,51) = 17.709$	run>walk-jump	**29,11**	33,21	7,83	**81,61**	24,31	5,73	**27,44**	34,63	8,16	
leap	$F(2,51) = 26.222$	jump>walk-run	**29,22**	29,36	6,92	**27,17**	35,30	8,32	**90,78**	24,13	5,69	
limp	$F(2,51) = 27.018$	walk>run-jump	**88,11**	15,48	3,65	**27,89**	35,94	8,47	**24,39**	32,15	7,58	
lope	$F(2,51) = 2.794$, p = 0.7	walk>run>jump	**59,78**	36,15	8,52	**40,22**	38,28	9,02	**31,17**	36,88	8,69	(walk-run) t(17) = 1. 920, p = 0.72 *marginal significance
lumber	$F(2,51) = 9.423$	walk>jump-run	**62,67**	35,98	8,48	**20,17**	26,55	6,26	**23,61**	35,44	8,35	
lurch	$F(2,51) = 6.596$	walk>run>jump	**64,72**	37,37	8,81	**29,22**	35,21	8,30	**25,56**	34,57	8,15	
march	$F(2,51) = 42.274$	walk>run>jump	**96,78**	6,75	1,59	**35,39**	36,16	8,52	**15,56**	30,62	7,22	
meander	$F(2,51) = 42.693$	walk>run>jump	**90,89**	14,46	3,41	**25,17**	33,49	7,89	**17,00**	27,30	6,43	
mince	$F(2,51) = 7.790$	walk>run>jump	**66,78**	40,41	9,52	**29,56**	38,58	9,09	**20,89**	30,10	7,09	

VERB	ANOVAs		MEAN WALK	sd	se	MEAN RUN	sd	se	MEAN JUMP	sd	se	Paired t-test with Bonferroni correction
mosey	F(2,51) = 33.061	walk>run>jump	**85,72**	25,24	5,95	**22,00**	32,13	7,57	**16,39**	27,44	6,47	
nip	F(2,51) = 5.045	walk-run>jump	**50,06**	40,56	9,56	**49,11**	33,68	7,94	**19,28**	22,34	5,27	(walk-run) t(17) = 0.107 , p = 0.916
pace	F(2,51) = 24.382	walk>run>jump	**91,67**	12,96	3,05	**52,61**	42,53	10,02	**19,00**	30,87	7,28	
pad	F(2,51) = 2.640, p = 0.08	walk-run>jump	**48,50**	42,66	10,05	**33,89**	35,10	8,27	**20,17**	32,47	7,65	(walk-run) t(17) = 1.498, p = .153
paddle	F(2,51) = 5.574	walk>run-jump	**38,50**	39,66	9,35	**11,78**	16,63	3,92	**10,61**	23,69	5,58	
parade	F(2,51) = 37.061	walk>run>jump	**89,17**	24,84	5,86	**25,78**	30,94	7,29	**14,67**	27,92	6,58	
perambulate	F(2,51) = 5.796	walk>run>jump	**56,78**	35,72	8,42	**29,78**	30,33	7,15	**22,17**	29,77	7,02	
plod	F(2,51) = 47.983	walk>run>jump	**86,50**	28,88	6,81	**22,44**	28,61	6,74	**10,94**	14,57	3,44	
prance	F(2,51) = 11.267	walk-jump>run	**76,89**	27,93	6,58	**30,39**	35,45	8,36	**70,94**	32,13	7,57	(walk-jump) t(17) = 0.549, p= 0.590
promenade	F(2,51) = 30.101	walk>run>jump	**85,00**	29,64	6,99	**26,28**	33,06	7,79	**13,11**	25,62	6,04	
prowl	F(2,51) = 43.913	walk>run>jump	**78,39**	30,91	7,29	**24,56**	27,93	6,58	**5,17**	5,86	1,38	
race	F(2,51) = 28.237	run>walk>jump	**40,50**	33,02	7,78	**94,00**	12,52	2,95	**27,33**	33,72	7,95	
ramble	F(2,51) = 45.463	walk>run>jump	**90,50**	21,42	5,05	**25,50**	27,24	6,42	**15,11**	27,96	6,59	
reel	F(2,51) = 2.553, p = 0.088	walk-run>jump	**28,56**	30,42	7,17	**24,22**	32,77	7,72	**9,17**	13,82	3,26	(walk-run) t(17) = 0.426, p = 0.675
roam	F(2,51) = 25.078	walk>run>jump	**77,17**	29,75	7,01	**28,56**	32,22	7,60	**11,89**	23,53	5,55	
romp	F(2,51) = 0.199, p = 0.820		**41,44**	34,79	8,20	**33,78**	37,75	8,90	**38,39**	37,47	8,83	
rove	F(2,51) = 12.005	walk>run>jump	**64,22**	34,34	8,09	**42,00**	34,78	8,20	**14,39**	20,36	4,80	
rush	F(2,51) = 16.447	run-walk>jump	**67,61**	33,89	7,99	**79,44**	30,79	7,26	**21,06**	32,04	7,55	(walk-run) t(17) = -1.493, p = 0.154
sashay	F(2,51) = 5.097	walk>jump-run	**61,06**	36,66	8,64	**29,67**	26,89	6,34	**31,94**	34,32	8,09	
saunter	F(2,51) = 16.828	walk>run>jump	**78,61**	30,64	7,22	**35,78**	39,79	9,38	**16,22**	27,31	6,44	
scamper	F(2,51) = 8.743	run-walk>jump	**61,67**	36,53	8,61	**77,22**	30,81	7,26	**29,28**	37,57	8,85	(walk-run) t(17) = -1.268, p =

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VERB	ANOVAs		MEAN WALK	sd	se	MEAN RUN	sd	se	MEAN JUMP	sd	se	Paired t-test with Bonferroni correction
												0.222
scoot	F(2,51) = 4.107	run-walk>jump	**42,39**	34,03	8,02	**52,83**	40,96	9,65	**19,67**	30,75	7,25	(walk-run) t(17) = -0.844, p = 0.411
scud	F(2,51) = 0.297, p = 0.745		**27,56**	25,48	6,01	**34,56**	28,23	6,65	**30,94**	28,03	6,61	
scurry	F(2,51) = 9.999	run>walk>jump	**55,56**	37,58	8,86	**73,72**	35,33	8,33	**21,50**	33,70	7,94	(walk-run) t(17) = -0.834, p = 0.084 *marginal significance
scuttle	F(2,51) = 9.419	run-walk>jump	**56,44**	36,57	8,62	**57,61**	33,80	7,97	**16,56**	25,53	6,02	(walk-run) t(17) = -0.111, p = 0.913
shamble	F(2,51) = 7.830	walk>run>jump	**57,56**	35,46	8,36	**33,33**	32,46	7,65	**15,56**	27,47	6,47	
shoot	F(2,51) = 1.870, p = 0.16		**31,39**	36,13	8,52	**42,61**	41,61	9,81	**18,33**	35,03	8,26	
shuffle	F(2,51) = 67.041	walk>run>jump	**90,89**	12,87	3,03	**24,94**	32,30	7,61	**9,67**	17,08	4,03	
sidle	F(2,51) = 8.517	walk>run>jump	**53,56**	34,05	8,03	**21,17**	27,78	6,55	**15,83**	26,67	6,29	
skedaddle	F(2,51) = 3.422	walk-run>jump	**61,28**	37,06	8,74	**49,22**	36,25	8,54	**29,89**	35,63	8,40	(walk-run) t(17) = 1.112, p = 0.281
skip	F(2,51) = 9.502	jump>walk-run	**46,78**	35,28	8,32	**43,72**	37,97	8,95	**86,00**	21,74	5,12	
skitter	F(2,51) = 3.689	walk-run>jump	**49,50**	35,21	8,30	**43,11**	34,04	8,02	**20,67**	28,33	6,68	(walk-run) t(17) = 0.770, p = 0.452
slide	F(2,51) = 9.822	walk>run>jump	**37,06**	32,17	7,58	**14,11**	24,68	5,82	**3,00**	3,76	0,89	
slink	F(2,51) = 5.367	walk>run-jump	**60,39**	40,69	9,59	**27,61**	29,11	6,86	**25,22**	37,17	8,76	
slog	F(2,51) = 2.125, p = 0.130		**47,61**	38,86	9,16	**40,50**	36,80	8,67	**23,06**	34,53	8,14	
slouch	F(2,51) = 1.421, p = 0.251		**23,61**	30,92	7,29	**13,78**	26,00	6,13	**8,67**	23,65	5,57	
sneak	F(2,51) = 23.973	walk>jump>run	**77,11**	27,37	6,45	**15,50**	25,92	6,11	**23,28**	33,39	7,87	
sommersault	F(2,51) = 18.404	jump>run-walk	**12,50**	17,90	4,22	**12,89**	24,76	5,84	**65,83**	42,76	10,08	
speed	F(2,51) = 27.254	run>walk>jump	**40,28**	40,67	9,59	**93,33**	11,85	2,79	**18,44**	33,83	7,97	
spring	F(2,51) = 14.411	jump>run>walk	**47,33**	33,77	7,96	**52,00**	35,83	8,45	**94,22**	8,69	2,05	
sprint	F(2,51) = 49.003	run>jump-walk	**21,94**	33,15	7,81	**98,39**	5,30	1,25	**23,83**	31,11	7,33	

VERB	ANOVAs		MEAN WALK	sd	se	MEAN RUN	sd	se	MEAN JUMP	sd	se	Paired t-test with Bonferroni correction
stagger	F(2,51) = 61.974	walk>run>jump	88,06	15,18	3,58	21,89	26,96	6,35	10,39	23,96	5,65	
stalk	F(2,51) = 32.277	walk>run>jump	74,00	35,18	8,29	18,00	19,77	4,66	7,28	13,51	3,18	
stomp	F(2,51) = 9.239	walk>jump>run	73,11	31,84	7,50	24,56	34,15	8,05	34,89	40,09	9,45	
streak	F(2,51) = 16.747	run>walk>jump	41,56	26,82	6,32	75,33	31,16	7,34	16,94	32,87	7,75	
stride	F(2,51) = 17.235	walk>run>jump	91,17	15,24	3,59	48,56	44,62	10,52	28,44	31,47	7,42	
strut	F(2,51) = 33.622	walk>run>jump	86,78	25,00	5,89	24,94	26,66	6,28	17,06	31,71	7,47	
stump	F(2,51) = 4.255	walk>jump>run	44,56	33,07	7,79	16,39	19,53	4,60	26,11	33,51	7,90	
sweep	F(2,51) = 2.778, p = 0.07	walk-run>jump	34,39	35,37	8,34	34,56	37,30	8,79	12,22	23,77	5,60	(walk-run) t(17) = -0.017, p = 0.987
tiptoe	F(2,51) = 51.083	walk>run-jump	84,17	30,29	7,14	12,94	17,99	4,24	13,17	23,25	5,48	
toddle	F(2,51) = 22.703	walk>run>jump	74,78	31,06	7,32	26,00	27,86	6,57	15,11	25,69	6,06	
totter	F(2,51) = 23.745	walk>run>jump	83,50	24,39	5,75	33,22	34,45	8,12	18,39	29,44	6,94	
traipse	F(2,51) = 13.444	walk>run>jump	77,39	33,07	7,80	32,39	33,93	8,00	25,50	30,74	7,25	
tramp	F(2,51) = 11.212	walk>jump-run	67,28	35,14	8,28	25,00	26,84	6,33	25,33	29,87	7,04	
trek	F(2,51) = 86.551	walk>run>jump	92,06	11,77	2,77	26,17	28,35	6,68	8,56	16,33	3,85	
trip	F(2,51) = 1.021		29,33	34,10	8,04	22,67	30,45	7,18	37,94	31,84	7,50	
troop	F(2,51) = 9.556	walk>run>jump	68,22	35,77	8,43	28,22	29,92	7,05	23,17	35,62	8,39	
trot	F(2,51) = 3.604	run-walk>jump	66,61	28,96	6,83	74,22	33,64	7,93	45,11	38,01	8,96	(walk-run) t(17) = -0.680, p = 0.506
trudge	F(2,51) = 50.838	walk>jump>run	90,67	11,78	2,78	14,00	25,66	6,05	23,72	32,46	7,65	
vault	F(2,51) = 18.259	jump>run>walk	13,61	17,69	4,17	33,11	32,67	7,70	74,67	38,68	9,12	
waddle	F(2,51) = 28.816	walk>run>jump	81,94	24,16	5,70	33,00	37,05	8,73	15,94	26,54	6,26	
wade	F(2,51) = 35.279	walk>run>jump	71,39	34,52	8,14	14,94	18,09	4,26	10,17	15,99	3,77	
wander	F(2,51) = 103.843	walk>run>jump	97,17	5,97	1,41	24,61	32,73	7,71	7,11	8,88	2,09	

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VERB	ANOVAs		MEAN WALK	sd	se	MEAN RUN	sd	se	MEAN JUMP	sd	se	Paired t-test with Bonferroni correction
whisk	F(2,51) = 13.756	run>walk-jump	**22,83**	26,15	6,16	**65,56**	30,53	7,20	**21,11**	29,54	6,96	
whiz(z)	F(2,51) = 20.745	run>walk>jump	**38,89**	33,50	7,90	**79,39**	28,85	6,80	**15,28**	27,97	6,59	
zoom	F(2,51) = 12.933	run>walk>jump	**31,44**	35,26	8,31	**75,00**	35,42	8,35	**19,00**	33,35	7,86	

SPANISH DATA FROM RATING STUDY

VERB	ANOVAs		MEAN WALK	sd	se	MEAN RUN	sd	se	MEAN JUMP	sd	se	Paired t-test with Bonferroni correction
acechar	F(2, 51) = 11.550	walk>run >jump	50,78	40,50	9,55	16,50	25,77	6,07	6,72	14,07	3,32	
acelerar	F(2, 51) = 25.448	run>walk>jump	48,11	36,21	8,53	84,44	25,15	5,93	13,44	27,04	6,37	
acompañar	F(2, 51) = 14.515	walk>run >jump	49,11	41,67	9,82	13,39	19,01	4,48	3,56	6,31	1,49	
aligerar	F(2, 51) = 21.930	run>walk>jump	70,56	37,36	8,80	82,83	27,05	6,38	18,39	27,50	6,48	
ambular	F(2, 51) = 28.089	walk>run >jump	78,39	31,07	7,32	36,22	34,34	8,09	8,72	17,00	4,01	
anadear	F(2, 51) = 11.915	walk>run >jump	55,78	34,83	8,21	27,56	29,66	6,99	10,00	18,01	4,24	
apresurarse	F(2, 51) = 23.588	run>walk>jump	56,33	35,09	8,27	73,22	36,92	8,70	6,39	13,07	3,08	(walk-run) t(17) = -2.350, p = 0.031
arrastrar (se)	F(2, 51) = 10.321	walk>run >jump	43,72	38,57	9,09	17,72	28,67	6,76	2,06	2,84	0,67	
brincar	F(2, 51) = 35.810	jump>walk>run	44,44	37,09	8,74	26,39	29,08	6,85	100,17	2,98	0,70	
callejear	F(2, 51) = 13.232	walk>run >jump	69,50	39,20	9,24	34,67	38,80	9,14	10,22	24,08	5,68	
caminar	F(2, 51) = 40.613	walk>run >jump	94,89	19,72	4,65	28,83	33,82	7,97	16,06	29,12	6,86	
chancletear	F(2, 51) = 31.596	walk>jump>run	79,39	25,44	6,00	13,56	25,71	6,06	19,94	30,73	7,24	
contonearse	F(2, 51) = 22.511	walk>run=jump	65,50	33,91	7,99	13,22	20,74	4,89	13,17	24,65	5,81	
contramarchar	F(2, 51) = 11.554	walk>run>jump	60,11	36,31	8,56	37,39	30,17	7,11	12,00	21,87	5,16	
corretear	F(2, 51) = 30.608	run-walk>jump	81,22	30,43	7,17	91,83	16,67	3,93	24,72	33,05	7,79	(walk-run) t(17) = -1.195, p = 0.249
culebrear	F(2, 51) = 8.390	walk>run>jump	54,50	40,40	9,52	32,72	34,19	8,06	10,33	18,37	4,33	
deambular	F(2, 51) = 91.800	walk>run>jump	91,61	14,14	3,33	22,44	29,20	6,88	5,72	12,93	3,05	
desacelerar	F(2, 51) = 5.961	walk-run>jump	37,89	33,27	7,84	24,94	32,86	7,74	5,89	12,70	2,99	(walk- run) t (17) = 1.180, p = 20.254
desandar	F(2, 51) = 21.408	walk>run-jump	56,94	41,10	9,69	9,22	14,59	3,44	5,72	12,77	3,01	
desfilar	F(2, 51) = 116.049	walk>run-jump	92,72	15,82	3,73	18,11	23,11	5,45	8,17	14,48	3,41	
deslizarse	F(2, 51) = 5.074	walk-run > jump	45,56	39,30	9,26	43,17	39,18	9,24	10,67	22,71	5,35	(walk- run) t (17) = 0.203, p = 0.842

VERB	ANOVAs		MEAN WALK	sd	se	MEAN RUN	sd	se	MEAN JUMP	sd	se	Paired t-test with Bonferroni correction
enconvarse	F(2, 51) = 1.510, P = 0.231		13,17	24,32	5,73	8,28	15,55	3,66	3,28	6,44	1,52	
errar	F(2, 51) = 11.649	walk>run>jump	50,06	43,92	10,35	18,50	28,94	6,82	1,89	2,91	0,69	
esprintar	F(2, 51) = 17.164	run>walk>jump	55,28	37,24	8,78	89,00	27,09	6,39	24,28	34,30	8,08	
esquivar	F(2, 51) = 3.622	run-walk>jump	47,50	34,45	8,12	49,94	30,73	7,24	24,00	30,47	7,18	(walk- run) t (17) = -0.287, p = 0.778
fugarse	F(2, 51) = 13.945	run>walk>jump	33,28	37,05	8,73	69,11	37,95	8,94	10,61	23,58	5,56	
galopar	F(2, 51) = 4.779	run >walk-jump	61,44	38,14	8,99	92,00	15,70	3,70	59,06	45,95	10,83	
gatear	F(2, 51) = 21.320	walk>run>jump	68,28	39,24	9,25	21,72	32,57	7,68	4,56	12,35	2,91	
huir	F(2, 51) = 12.287	run>walk>jump	45,17	40,36	9,51	69,11	40,04	9,44	12,06	19,38	4,57	
merodear	F(2, 51) = 40.798	walk>run-jump	78,33	33,80	7,97	14,83	23,27	5,49	8,56	16,99	4,00	
noctambular	F(2, 51) = 17.052	walk>run-jump	60,89	42,42	10,00	9,00	17,34	4,09	10,94	25,29	5,96	
patear	F(2, 51) = 10.436	walk>run>jump	64,28	39,80	9,38	26,83	35,26	8,31	14,22	25,90	6,11	
pavonearse	F(2, 51) = 7.966	walk>run>jump	45,00	43,25	10,19	14,94	21,31	5,02	8,28	16,43	3,87	
pisar	F(2, 51) = 1.661, p = 0.2		30,50	35,44	8,35	12,94	24,59	5,80	17,56	28,86	6,80	
pisotear	F(2, 51) = 1.415, p = 0.252		26,22	24,61	5,80	12,17	18,52	4,36	19,89	30,71	7,24	
precipitarse	F(2, 51) = 3.190, p = 0.05	run-jump>walk	22,11	28,72	6,77	51,94	34,24	8,07	39,00	42,32	9,98	(run-jump) t (17) = 0.967, p = 0.347
rastrear	F(2, 51) = 8.331	walk-run>jump	50,94	38,71	9,12	33,17	35,21	8,30	8,17	15,98	3,77	(walk-run) t (17) = 1.648, p = 0.118
recorrer	F(2, 51) = 20.133	walk>run>jump	71,89	34,26	8,08	49,72	32,42	7,64	10,67	18,76	4,42	
regatear	F(2, 51) = 2.588, p = 0.08	walk-run >jump	44,61	43,83	10,33	41,22	39,55	9,32	18,17	28,89	6,81	(walk-run) t (17) = 0.315 , p = 0.757
renquear	F(2, 51) = 26.037	walk>run-jump	84,94	19,71	4,64	32,28	36,68	8,65	22,50	24,62	5,80	
resbalarse	F(2, 51) = 0.951, p = 0.39		15,28	22,55	5,31	29,39	38,16	8,99	21,00	29,93	7,06	
retozar	F(2, 51) = 0.024, p = 9.76		19,33	22,17	5,23	21,17	30,37	7,16	20,72	25,71	6,06	
rondar	F(2, 51) = 22.319	walk>run-jump	67,72	39,05	9,20	14,56	23,69	5,58	7,89	22,70	5,35	
serpentear	F(2, 51) = 21.714	walk>run>jump	73,28	28,83	6,80	28,83	37,64	8,87	10,56	18,42	4,34	

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VERB	ANOVAs		MEAN WALK	sd	se	MEAN RUN	sd	se	MEAN JUMP	sd	se	Paired t-test with Bonferroni correction
taconear	F(2, 51) = 11.791	walk>jump>run	**63,67**	36,97	8,71	**10,17**	17,84	4,21	**32,22**	40,32	9,50	
tambalearse	F(2, 51) = 13.975	walk>run>jump	**57,61**	43,41	10,23	**17,67**	27,84	6,56	**10,67**	18,20	4,29	
tropezar	F(2, 51) = 3.81	jump>walk>run	**18,33**	23,80	5,61	**7,50**	20,20	4,76	**33,11**	38,08	8,98	(walk-jump) t(17) = -2.224, p = 0.040
trotar	F(2, 51) = 0.45, p = 0.637		**72,33**	33,82	7,97	**81,56**	27,89	6,57	**80,22**	32,00	7,54	
vagar	F(2, 51) = 75.772	walk>run-jump	**88,94**	19,50	4,60	**19,28**	29,62	6,98	**6,22**	12,33	2,91	
zancajear	F(2, 51) = 7.073	walk>run-jump	**79,33**	30,65	7,22	**45,61**	32,43	7,64	**41,00**	36,78	8,67	
zanquear	F(2, 51) = 4.015	walk>run-jump	**75,11**	24,63	5,81	**48,33**	35,57	8,38	**48,61**	36,20	8,53	
zaparrastrar	F(2, 51) = 9.185	walk>run-jump	**51,06**	39,11	9,22	**18,28**	24,44	5,76	**11,88**	20,12	4,74	
zapatear	F(2, 51) = 7.570	walk-jump>run	**53,50**	39,27	9,26	**9,94**	17,19	4,05	**33,22**	39,38	9,28	(walk-jump) t (17) =1.588, p = 0.131
zigzaguear	F(2, 51) = 17.732	walk>run>jump	**74,61**	22,15	5,22	**51,72**	36,84	8,68	**19,56**	24,91	5,87	(walk-run) t(17) = 2.063, p = 0.056

LA EXPRESIÓN DEL MOVIMIENTO EN INGLÉS Y EN ESPAÑOL:

UNA PERSPECTIVA LINGÜÍSTICO-COGNITIVA,

TIPOLÓGICA Y PSICOLINGÜÍSTICA

Introducción

El movimiento es un dominio fundamental en nuestra experiencia sensorial y en la interacción con el mundo que nos rodea; está presente en nuestras acciones diarias y en nuestras necesidades comunicativas. No obstante, se ha observado que las lenguas difieren de un modo sistemático en la expresión lingüística de este dominio.

Parte del trabajo de Leonard Talmy (1972, 1985, 1991, 2000a, 2000b) se ha centrado en desvelar si, a la hora de expresar lingüísticamente un evento de movimiento, las lenguas siguen un patrón único (es decir, un universal) o siguen varios (esto es, una tipología). Según este autor, "[t]he basic Motion event consists of one object (the Figure) moving or located with respect to another object (the reference object or Ground)" (2000b: 25). Es decir, un evento de movimiento consiste en un objeto (la Figura) que se mueve o que está situada con respecto a otro objeto (el objeto de referencia o Base). Para Talmy los eventos de movimiento engloban situaciones que contienen tanto desplazamiento (por ejemplo, *Pedro fue a casa*) como situaciones estáticas (por ejemplo, *la lámpara estaba en la mesa*). Un evento de movimiento está formado, a su vez, por otros componentes semánticos básicos: el Movimiento (*Motion*), es decir, la acción de moverse en sí misma, y el Sendero o trayectoria del desplazamiento (*Path*), que es el componente semántico más importante. Además, otros componentes semánticos como la Manera de movimiento (*Manner* en inglés) y la Causa del movimiento (*Cause* en inglés), pueden aparecer vinculados a un evento de movimiento.

Partiendo de qué forma lingüística expresa habitualmente el componente semántico de Sendero en una lengua, Talmy ha propuesto la tipología binaria de

lenguas de marco verbal (*verb-framed languages*) y lenguas de marco satélite (*satellite-framed languages*). Las lenguas de marco verbal, como el castellano y otras lenguas romances, son aquellas que suelen lexicalizar el componente central del evento en el verbo: *entrar*, *salir*, *subir*, *bajar*, *cruzar*, etc. Generalmente, cuando estas lenguas quieren expresar información sobre cómo se mueve o se desplaza una entidad, ésta se codifica fuera del verbo mediante adverbios (*muy rápidamente*), gerundios (*corriendo*, *saltando*) o sintagmas preposicionales (*de puntillas*), que tienen un carácter opcional. Por otro lado, las lenguas de marco satélite (como el inglés y otras lenguas germánicas) son aquellas que expresan el Sendero fuera del verbo, en satélites[1] (como *across*, *up*, *down* en inglés) y sintagmas preposicionales (por ejemplo, *into/out of the house* en inglés). Debido al hecho de que al lexicalizar el Sendero fuera del verbo, éste queda libre para codificar otro tipo de información, normalmente, la Manera en la que se desarrolla el movimiento (por ejemplo, *he tiptoed into the room*; *they waltzed out of the hall*).

Las tipologías muestran tendencias en las lenguas del mundo, pero no diferencias absolutas entre ellas (Berman y Slobin, 1994: 118). Por ello, es necesario hacer hincapié en el hecho de que las lenguas poseen verbos que expresan otros componentes semánticos aparte de los de Sendero y Manera; la tipología de Talmy sobre la expresión del dominio del movimiento, en ningún momento, ha de interpretarse como que las lenguas de marco verbal única y exclusivamente tienen verbos de sendero, y las lenguas de marco satélite solamente poseen verbos que expresen Manera.

La teoría de Talmy ha inspirado numerosas investigaciones durante estas últimas dos décadas. En un primer estadio, las investigaciones se centraron en analizar y contrastar cómo distintas lenguas expresan el dominio del movimiento. Para ello, se empleó un libro para niños, *Frog, Where are you?* de Mercer Mayer (1969), como instrumento para elicitar, del modo más natural posible, descripciones orales sobre el movimiento de los personajes de este libro. Esto llevó a la publicación

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[1] Según Talmy (2000b: 102), los satélites forman una categoría gramatical; su característica sintáctica es su estrecha vinculación al verbo, y su función semántica es, principalmente, la de expresar el Sendero, componente central del evento de movimiento.

de dos volúmenes, bajo el título *Relating Events in Narratives*: el primer volumen, editado por Berman y Slobin (1994), documenta 5 lenguas (inglés, alemán, hebreo, castellano y turco), y el segundo, editado por Strömqvist y Verhoeven (2004) documenta un total de 14 (lenguaje de signos, aranda, groenlandés, inglés, castellano, hebreo, japonés, sueco, islandés, tailandés, turco, tzeltal o maya, euskara y warlpiri). Este segundo volumen cuestiona la tipología binaria de Talmy al documentar un grupo de lenguas que no encajan perfectamente en esta tipología; algunas lenguas expresan tanto Sendero como Manera con formas lingüísticas de igual estatus, es decir, ninguna de ellas es dependiente de la otra. Como resultado, Slobin (2004) lleva a cabo una completa reformulación de la tipología binaria inicial de Talmy añadiendo un tercer grupo: lenguas de marco equiparable o equivalente[2] (*equipollently-framed languages*). Al mismo tiempo, se observa que las lenguas dentro del mismo grupo tipológico también difieren entre sí en la expresión del Sendero (más concretamente, en la elaboración de las trayectorias) y la Manera de movimiento, llevando a la propuesta de gradientes o continuos de Sendero (Ibarretxe-Antuñano, 2004a) y de Manera (Slobin, 2004). En esos continuos, las lenguas del mismo grupo tipológico estarían más próximas entre sí, mientras que las lenguas de distinto marco tipológico se encontrarían más distanciadas.

A su vez, este tipo de estudios han servido como punto de partida para otras investigaciones centradas en (a) cómo los niños adquieren los patrones semánticos específicos de su lengua (p.ej., Hickman, 2006; Oh, 2003; Semilis y Katis, 2003), (b) los efectos que éstos tienen en cómo se procesa el lenguaje (p.ej., Billman y Krych, 1998; Cifuentes-Férez y Gentner, 2006; Naigles y Terrazas, 1998), y (c) la posible influencia en la cognición no lingüística (p.ej., Gennari et al., 2002; Oh, 2003; Papafragou et al., 2002; Pourcel, 2005).

Las investigaciones pertinentes para el presente trabajo, no obstante, son primordialmente las de naturaleza lingüístico-descriptiva, esto es, aquellas centradas en la descripción de la expresión lingüística de este dominio en una o más lenguas.

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[2] Ibarretxe-Antuñano (2004c) traduce el término inglés por *lenguas de marco equipolente*, que está más próximo al término inglés en cuanto a forma. Sin embargo, se ha optado por traducirlo como *lenguas de marco equiparable o equivalente*, ya que denota más claramente el estatus similar que los componentes de Sendero y Manera tienen en este grupo de lenguas.

El punto de divergencia entre las lenguas de marco verbal y satélite que mayor atención ha recibido en los estudios de esta índole es el referente a la expresión de Manera de movimiento. Las diferencias interlingüísticas en la lexicalización de la Manera de movimiento no residen únicamente en dónde se suele expresar la Manera de movimiento (en el verbo o fuera de él), sino también en el tipo de información que se puede o no expresar. Como Slobin (1997: 459) señala, las lenguas parecen tener un lexicón de verbos de manera con 2 niveles: (1) un nivel general o superordinado, que está formado por verbos como *walk* 'andar', *run* 'correr', *jump* 'saltar', *fly* 'volar' etc; y (2) un nivel más específico, que incluye verbos que denotan diferentes modos de andar (p. ej., *stroll* 'andar por placer y de un modo relajado', *wander* 'andar sin ningún objetivo o dirección' o *shuffle* 'andar arrastrando los pies' en inglés, o *pasear*, *deambular*), de correr (p.ej., *jog* 'hacer jogging', *sprint* 'esprintar'), etc. Un gran número de las investigaciones en el área han mostrado que el inglés tiene un segundo nivel mucho más elaborado que el castellano, cuyo lexicón verbal está formado por verbos de manera de movimiento más generales (cf. Berman y Slobin, 1994; Slobin, 1996a, 1996b). Por otra parte, con el propósito de facilitar la comparación interlingüítica en cuanto a qué tipo de información sobre la Manera de movimiento puede expresarse en verbos u otras unidades léxicas, Ibarretxe-Antuñano (2006a, 2006b), Özçalişkan (2004) y Slobin (2005), entre otros autores, han dividido el componente semántico de Manera en un número de categorías o parámetros más específicos:

- Patrón motor (las habilidades motrices básicas): *andar, correr, saltar, volar*
- Velocidad (lenta, rápida): *apresurarse, acelerar, desacelerar*
- Medio de transporte (en animal, en coche, en tren, etc): *cabalgar, jinetear, pilotar*
- Movimiento con un gran esfuerzo: *abalanzarse, lanzarse*
- Movimiento inestable: *tambalearse*
- Movimiento obstruido: *tropezar, trompicar*
- Movimiento suave, sin obstáculos: *deslizarse*
- Movimiento por placer: *pasear*

- Movimiento sin objetivo: *deambular*, *vagar*
- Estado físico o mental de la Figura: *cojear* (la Figura o persona está herida), *contonearse* (la persona se mueve presumidamente)

Gracias al empleo de estas categorías, es posible encontrar diferencias mucho más sutiles entre lenguas.

El componente semántico del Sendero, por el contrario, no ha recibido tanta atención en los estudios interlingüísticos. El Sendero es el componente central del evento del movimiento y, por ello, siempre está presente en las descripciones de eventos de movimiento; ambos grupos de lenguas lo expresan lingüísticamente, bien sea en el verbo o en los satélites. De ahí que el estudio de la expresión de este componente semántico haya sido relegado a un segundo plano. No obstante, encontramos unos pocos estudios (p.ej., Berthele, 2004; Narasimham, 2003; Wälchli, 2001) que se han centrado en los distintos tipos de Sendero que aparecen en un número de lenguas, con el objetivo de dilucidar diferencias y semejanzas entre lenguas. Como ejemplo, estos son los tipos de Sendero propuestos por Berthele (2004), que se basan en Wälchli (2001):

- AD = la Figura se mueve hacia la Base: *aproximarse*
- IN = la Figura entra en la Base: *entrar*, *penetrar*
- SUPER = la Figura se mueve hacia arriba: *subir*, *ascender*
- AB = la Figura se aleja de la Base: *alejarse*
- EX = la Figura sale de la Base: *salir*
- DE = la Figura se mueve hacia abajo: *bajar*, *descender*

En relación con el léxico verbal de Sendero, Özçalişkan (2004: 85) argumenta que los lexicones verbales de Sendero de las lenguas de marco verbal y de marco satélite forman una categoría léxica cerrada con pocas opciones de elaboración; las distintas trayectorias que una Figura puede seguir son mucho más limitadas que los distintos modos en los que la Figura puede desplazarse. Por ello, esta autora deduce

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que lenguas de distintos grupos tipológicos van a tener un número aproximado de verbos de sendero. Su proposición, no obstante, no se ha explorado aún.

En general, a pesar de las prolíficas investigaciones en la expresión lingüística del dominio del movimiento, se ha dedicado escasa atención al hecho de que los verbos de movimiento pueden expresar otro tipo de información semántica aparte de la de Sendero y Manera. Asimismo, los autores han relegado el estudio de los verbos de sendero a un segundo plano, y se han centrado en los verbos de manera, por ser estos últimos uno de los puntos divergentes más interesantes entre distintos grupos tipológicos. Por último, muy pocas investigaciones se han dedicado a explorar la semántica de los verbos de movimiento de las lenguas de marco verbal y de marco satélite más allá de los verbos elicitados oralmente o sacados de narrativas (p.ej., Jovanovic & Martinovic-Zic, 2005; Özçalişkan, 2004; Slobin, 1996a, 1966b, 2005). En el caso del inglés y el castellano, concretamente, no parece haber ningún estudio que compare sus lexicones verbales desde un punto de vista interlingüístico.

La presente tesis doctoral pretende contribuir a la investigación en el área mediante un análisis sistemático y exhaustivo de la semántica de los lexicones verbales referidos al movimiento en inglés y en castellano. Un mayor entendimiento de la semántica de sus respectivos léxicos verbales, así como de las diferencias y similitudes entre ambos, es fundamental para las investigaciones interlingüísticas que versan sobre la expresión lingüística del dominio del movimiento, así como para las investigaciones que pretenden vislumbrar si las diferencias lingüísticas entre lenguas de marco verbal y de marco satélite tienen alguna influencia en la cognición no-lingüística, es decir, en la forma que los hablantes de esas lenguas conceptualizan el dominio del movimiento.

Objetivos, Corpus y Metodología

La presente investigación se centra en la semántica de los verbos de movimiento en inglés y en castellano. El primer objetivo es comparar y contrastar el lexicón verbal

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de movimiento en ambas lenguas. Las preguntas de investigación que gobiernan este primer objetivo son las siguientes:

- ¿Qué nociones semánticas se expresan en los verbos de movimiento en inglés y en español?

Aparte de los verbos que expresan Manera y de los que expresan Sendero, se espera encontrar, en ambas lenguas, otros verbos que codifican otros tipos de componentes semánticos, tales como Movimiento + Base (entidad con respecto a la que se mueve la Figura), como en *atajar* (ir por un atajo) y *costear* (ir por la costa), Movimiento + Sendero + Manera, como en *acechar* (ir detrás de alguien de un modo furtivo), Movimiento + Sendero + Base como en *embarcar* (subir a bordo de un medio de locomoción), etc.

- ¿Son los lexicones verbales de sendero en inglés y en castellano similares?
    - ¿Poseen un número aproximado de verbos de sendero?
    - ¿Expresan los mismos tipos de Sendero?
    - ¿Qué tipos de Sendero se lexicalizan en inglés con mayor frecuencia?
    - ¿Qué tipos de Sendero se lexicalizan en castellano con mayor frecuencia?

Con el presente trabajo pretendemos comprobar si las argumentaciones de Özçalişkan (2004) se aplican al léxico verbal de sendero en inglés y en castellano; es decir, si (a) el léxico verbal de sendero es bastante limitado en cuanto a qué trayectorias se pueden describir, y si (b) las lenguas de marco verbal y satélite poseen un número similar de verbos de sendero. Además, se intentarán descubrir semejanzas y diferencias entre ambas lenguas. Por un lado, cabe esperar que los verbos de sendero ingleses de origen latino (p.ej., *enter*, *ascend*, *descend*, *arrive*) sean semejantes a los castellanos con la misma etimología (p.ej., *entrar*, *ascender*, *descender*, *arribar*). Sin embargo, podría ser el caso de que el castellano tenga otros verbos de sendero que no se encuentren en inglés, tales como aquellos verbos que derivan de una preposición que expresa dirección y un adverbio (p.ej., *adentrarse = a*

+ *dentro*; *acercar = a + cerca*), o verbos provenientes de un adverbio tales como *alejarse* (del adverbio *lejos*).

- ¿Expresan los verbos de manera en inglés y en castellano el mismo tipo de detalles sobre Manera de movimiento?
  - ¿Qué tipo de detalles se expresan con mayor frecuencia en los verbos de manera en inglés?
  - ¿Qué tipo de detalles se expresan con mayor frecuencia en los verbos de manera en castellano?
  - ¿Presenta el inglés un mayor número de verbos de manera en todos los subdominios de movimiento? Si este no es el caso, ¿en qué subdominio(s) el castellano tiene una mayor granularidad semántica?

Con el análisis semántico de verbos de manera de movimiento en ambas lenguas exploraremos si ambas lenguas expresan el mismo tipo de información sobre Manera de movimiento. A la misma vez, atenderemos a aquéllos detalles de Manera que se explotan con mayor frecuencia en cada lengua, y en último lugar, veremos si el léxicon verbal de Manera es mucho más rico que el castellano para todos los subdominios del movimiento (p.ej., movimiento humano, movimiento usando vehículo, etc.), o si el castellano presenta una mayor variedad de verbos para algún/algunos subdominio(s).

El corpus de verbos abarca 376 verbos de movimiento en ingles y 257 en castellano. A la hora de compilar este corpus de verbos, se consultaron listados disponibles en la literatura existente sobre verbos de movimiento, diccionarios monolingües y bilingües, así como tesauros. En el caso del inglés, se consultaron las siguientes fuentes:

- Levin & Rappaport-Hovav (1992), Levin (1993), y Snell-Hornby (1983)
- *Oxford English Dictionary* (OED)
- *Cambridge Advanced Learner's Dictionary*, CD-Rom version 1.1. Cambridge University Press. 2003 (CALD)

- *Cambridge Klett Compact*, CD-Rom version 1.0b. Cambridge University Press. 2002 (CKC)
- *Merriam-Webster Online*, disponible en http://www.merriam-webster.com/ (MW)
- *The Free Dictionary*, (http://www.thefreedictionary.com/dictionary.htm) (TFD)
- *Longman Language Activator*. Pearson Education. 2002 (LLA)
- *Roget's thesaurus of English words and phrases* (RTE), disponible en http://poets.notredame.ac.jp/Roget/

Para castellano, se emplearon:

- Cifuentes Honrubia (1999) y Morimoto (2001)
- *Diccionario de uso del Español*. María Moliner, CD-Rom version 2.0, Gredos. 2001. (DUE)
- *Diccionario de la lengua española*. Real Academia Española, 21 edición. Espasa Calpe. 1992. (DRAE)

Los verbos de movimiento objeto de la presente investigación son principalmente verbos intransitivos, aunque también se han incluido verbos transitivos que aparecen en las construcciones 'Figura + Verbo + Base (objeto directo)', como en (1), y 'Figura + Verbo + otras Figuras', como en (2). Por otro lado, los verbos transitivos que denotan que un agente mueve o desplaza a una entidad, es decir, causa el movimiento de ésta, como en (3), no forman parte de nuestros objetivos. No obstante, nuestro corpus de verbos si comprende las versiones intransitivas de verbos transitivos, tales como los verbos de cambio de postura (p.ej., *acostar – acostarse*, *levantar – levantarse*).

(1)   Abandonamos la casa
(2)   Acompañó / guió / escoltó a María
(3)   Pedro empujó a Juan

El movimiento físico es el único objeto de estudio; sentidos metafóricos (p.ej., Özçalişkan, 2002, 2004) y sentidos referidos al movimiento ficticio (p.ej., Langacker, 1987; Matsumoto, 1996; Rojo & Valenzuela, 2003, Talmy, 2000a: 90) no se han tomado en cuenta en nuestro análisis. En general, el corpus de verbos comprende verbos de movimiento generales (p.ej., *moverse*), verbos que expresan movimiento de varias Figuras (cf. Levin (1993), tales como *acompañar*, *escoltar*, *guiar*), verbos de sendero (*entrar*, *salir*) y verbos de manera de movimiento. Estos verbos de manera de movimiento se refieren principalmente a:

- Verbos de movimiento humano y animal (p.ej., *andar*, *correr*, *saltar*, *volar*)

- Verbos de movimiento usando un vehículo (p.ej., *conducir*, *navegar*, *pedalear*, *pilotar*)

- Verbos de movimiento referidos a bailar y a distintos bailes (e.g., *bailotear*, *waltz* 'bailar un waltz', *foxtrot* 'bailar foxtrot')

- Verbos de movimiento referidos a objetos o entidades inanimadas (p.ej., *rodar*, *oscilar*)

- Verbos que indican cambio de postura (p.ej., *acostarse*, *levantarse*).

En cuanto a la metodología a seguir, nuestro análisis parte de los componentes semánticos generales propuestos por Talmy, pero a su vez, también emplea los distintos tipos de Sendero y los detalles o parámetros más específicos sobre Manera de movimiento que la literatura existente ha desarrollado. Nuestro análisis semántico se basa exclusivamente en las definiciones dadas por los diccionarios para cada uno de los verbos que forman parte de nuestro corpus (Véase Apéndice 1 y 2), aunque mi introspección como hablante de castellano y las introspecciones de algunos informantes ingleses también se tomaron en cuenta. Cuando la mayoría[3] de los diccionarios no están de acuerdo en cuanto a la información semántica que el verbo expresa, esa información no se incluye en la codificación semántica. Además, también se ha tenido en cuenta la etimología de los

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[3] Para el inglés, se considera que la mayoría de diccionarios están de acuerdo cuando al menos 3 de las 5 fuentes lo están (CALD, TFD, MW, LLA, OED); en castellano, se han consultado solamente 2 diccionarios, por lo que por mayoría entendemos los dos (DUE, DRAE).

verbos con el fin de entender mejor su semántica y, en muchas ocasiones, su estructura composicional. Por ejemplo, *despeñarse* viene del prefijo direccional latino *des* + *peña* (sustantivo), de ahí que este verbo se haya analizado como Movimiento + Sendero + Base. Las fuentes que se han consultado para explorar la etimología de los verbos de movimiento del corpus son:

- Para el ingles: *Oxford English Dictionary* y *Merriam-Webster Online*.
- Para el castellano: J. L. Cifuentes (1999), que se basa en Corominas y Pascual (1984), y los diccionarios: *Diccionario de uso del Español* y *Diccionario de la lengua española*.

En general, el léxico verbal en inglés y en castellano se contrastará con respecto a (a) la distribución semántica general, (b) los verbos de sendero, y (c) los verbos de manera. La metodología a seguir va a permitirn conocer cómo ambos lexicones referidos al movimiento se organizan, qué diferencias y similitudes existen, así como formular hipótesis para investigaciones de carácter psicolingüístico o experimental.

La presente tesis doctoral no puede abarcar todas las hipótesis y nuevas preguntas de investigación que emanan del análisis semántico. Sin embargo, como segundo objetivo, se pretende explorar el subdominio del movimiento humano empleando paradigmas experimentales. Este subdominio puede estructurarse en, al menos, tres patrones motor básicos: *andar*, *correr* y *saltar*. Andar es la manera de moverse más típica del ser humano, mientras que correr y saltar son actividades menos centrales en nuestra experiencia diaria.

En la segunda parte de la presente tesis doctoral, se presentarán tres estudios experimentales. El primer estudio (tarea de definición y listado de rasgos semánticos o *definition and feature listing task*) tiene como objetivo el explorar los rasgos semánticos definitorios de las acciones *moverse*, *andar*, *correr* y *saltar*. Con ese propósito, preguntamos a hablantes nativos de inglés y a hablantes nativos de castellano, "What is to move / walk / run / jump? That is, which are the features that define the action of moving / walking /running / jumping?" y "¿Qué es moverse/ andar /correr/ saltar? Es decir, ¿cuáles son las características que definen la acción

de moverse/ andar /correr/ saltar?" respectivamente. A cada sujeto se le preguntó por un verbo solamente. Además, se les dijo que escribieran sus preguntas, y no se les dio ninguna limitación de tiempo.

En el segundo estudio (tarea de listado libre de verbos o *free verb listing task*) se busca validar empíricamente uno de los resultados más interesantes del análisis semántico del corpus de verbos; aunque el inglés posee muchos más verbos referidos al movimiento humano que el castellano, ambas lenguas parecen tener muchos más verbos de manera referidos a modos de andar que de correr o saltar. Investigaciones sobre categorización durante 1970 (p. ej., Battig & Montague, 1969; Freedman & Loftus, 1971; Rosch, 1973, 1975) demuestran que, cuando se le pide a hablantes que listen ejemplos de una categoría, (a) aquellos ítems que listan primero son los más prototípicos o mejores ejemplos, (b) que el número de ítems que la gente lista para una categoría y el tamaño de ésta están correlacionados, es decir, cuanto más ítems se listan, más grande es una categoría. Partiendo de esta literatura, pedimos a hablantes nativos de inglés y a hablantes nativos de español que listaran verbos para responder a la preguntas: "In what ways can a human move / walk / run / jump?" y "¿De qué modos puede una persona moverse / andar / correr / saltar?". Al igual que en el primer estudio, los sujetos tan solo respondieron a la pregunta sobre un único verbo. Sin embargo, en esta tarea, se les dio un minuto para responder a la pregunta por escrito.

En el tercer estudio (tarea de valoración/categorización o *rating task*), se busca desvelar el patrón motor específico que denotan o implican un listado de verbos de movimiento humano en inglés y en castellano. Para ello, pedimos a hablantes nativos de inglés y a hablantes nativos de castellano que valoraran marcando una X en una escala si un verbo era un buen ejemplo de *andar*, de *correr* y de *saltar*.

Resultados

Con el propósito de exponer los resultados de esta investigación del modo más claro posible, comenzaremos con los principales resultados del análisis semántico del

corpus de verbos de movimiento, divididos en tres bloques: distribución general, verbos de sendero y verbos de manera de movimiento. Seguidamente, se presentarán los resultados de los tres estudios experimentales.

CORPUS

Distribución general

Además de verbos que amalgaman o incorporan Sendero (p.ej., *entrar*, *salir*, *enter*, *exit*, *approach*) y Manera de movimiento (p.ej., *bucear*, *correr*, *deambular*, *pasear*, *volar*, *revolotear*, *correr*, *deambular*, *stroll*, *amble*, *jog*), encontramos un gran número de combinaciones de distinta información semántica que se lexicaliza en verbos en ambos idiomas. Por ejemplo:

- Movimiento + Base (Ground): p.ej., *volar*, *fly* (la Base es aire); *nadar*, *swim* (la Base es agua) etc. El castellano posee unos verbos donde la Base se deja entrever en el verbo, por ejemplo, *atajar* 'ir a un sitio tomando un atajo', *costear* 'navegar o moverse a lo largo de la costa', *bordear, llanear*. Este último tipo de verbos no parece ser tan común en el léxico verbal inglés.

- Movimiento + Sendero + Base (Ground): p.ej., *embarcar* 'subir a bordo', *embark*, *emigrar*, *emigrate*, *aterrizar* y *land* o *alight* en inglés.

- Movimiento + Sendero + Base + Manera: p.ej., *ford* 'cruzar un río (a pie normalmente)', *skydive* 'lanzarse en picado por el aire', *capuzarse*.

- Movimiento + Manera + Base: p.ej., *bucear*, *dive* (nadar debajo del agua), *callejear* (andar por las calles), *wade* (andar con dificultad por una corriente de agua).

- Movimiento + Figura + Co-movimiento: p.ej., *acompañar*, *accompany*, *escoltar*, *escort*, *guiar*, *guide*, *lead*. Estos verbos expresan que una entidad se desplaza en relación a otra que también se desplaza a la misma vez; en otras palabras, hay varias Figuras en co-movimiento.

En general, se observa que el patrón de lexicalización más frecuente en los lexicones verbales de ambas lenguas es el de Movimiento + un componente semántico (87.50% del corpus inglés y el 79.38% del corpus en castellano). Entre esas combinaciones o

amalgamas, las de Sendero representan un 11.70% de los verbos en inglés y un 24.51% de los verbos en castellano, mientras que las de Manera están presentes en un 73.80% de nuestro corpus en inglés y un 47.86% de nuestro corpus en castellano. Además, nuestros datos muestran que, en ambas lenguas, se han encontrado verbos que incorporan la Base o entidad referencial por sí sola, como por ejemplo, *circuit* y *circulate* en inglés, *atajar*, *bordear*, *circular*, *costear*, *fondear* y *llanear* en castellano, o junto a otra información semántica (p.ej., junto con Sendero: *aterrizar*, *desembarcar*, *expatriar*, *inmigrar*, *disembark*, *embark*, *land*; junto con Manera: *callejear*, *ladear* (caminar por la ladera de una montaña), *planear*, *chapotear*, *swim*, *wade*). En total, un 4.55% del léxico verbal inglés y un 12.06% del castellano amalgaman información sobre la Base. Por ello, los resultados de este estudio contradicen las observaciones de Talmy (2000b: 61) sobre la escasa frecuencia o inexistencia de estas amalgamas en los lexicones verbales.

Por otro lado, nuestros datos muestran que las combinaciones de más de 2 componentes semánticos (véase ejemplos más arriba) son muy poco frecuentes en los lexicones verbales, por lo que podemos concluir que no son patrones semánticos representativos de estas lenguas.

Verbos de sendero

Con respecto a verbos que lexicalizan Sendero, de un total de 257 verbos en castellano y 376 en inglés, en nuestro corpus de verbos se han encontrado 63 para el castellano y 44 para el inglés. Nuestros datos muestran que el castellano tiene un gran número de verbos de etimología latina que consisten en la amalgama de la preposición 'a' + 'adverbio', por ejemplo, *acercar(se)*, *adentrar(se)*, *alejar(se)*, *aproximar(se)*, y a otros verbos que provienen de nombres, *distanciarse* (de distancia), *encumbrar* (de cumbre). Este tipo de verbos no se encuentran en inglés, aunque sí que encontramos un gran número de verbos de origen latino muy similares a los españoles, y que por tanto, expresan los mismos tipos de Sendero:

- 'Pasar/Cruzar la Base': *cross-cruzar, traverse-atravesar, pass-pasar*
- 'Lejos de la Base': *retreat-retirarse, desert-desertar, abandon-abandonar*
- 'Hacia dentro de la Base': *enter-entrar, penetrate-penetrar*

- 'Hacia arriba / encima de la Base': *scale-scalar*, *ascend-ascender*
- 'Hacia abajo': *descend-descender*
- 'Hacia delante': *advance-avanzar*
- 'Hacia la Base': *arrive-arribar*

Nuestro análisis, además, muestra que ambas lenguas expresan hasta 13 tipos de Sendero diferentes. Los tipos de Sendero que se expresan con mayor frecuencia en ambos lexicones son: 'Lejos de la Base', 'Hasta encima o arriba de la Base– Hacia arriba', 'Hacia la Base', 'Hacia abajo desde la Base – Hacia abajo hasta la Base – Hacia abajo'. Por otra parte, 'Fuera de la Base' es el tipo de Sendero menos frecuente en ambos lexicones, con un verbo por lengua (*salir*, *exit*). Aparentemente, no hay razón por la que este tipo de Sendero se vea tan desfavorecido.

Recapitulando, ambos lexicones pueden expresar los mismos tipos de Sendero, apoyando la idea de que el léxico verbal de sendero es mucho más limitado que el de manera, tal y como Özçalişkan argumentaba. No obstante, nuestros datos no apoyan su propuesta sobre que las lenguas de marco verbal y satélite tienen el mismo número de verbos de sendero; nuestros resultados muestran que el castellano posee un mayor número de verbos de sendero. El mayor número de verbos de sendero en castellano se puede atribuir a la presencia de un gran número verbos de distintos orígenes etimológicos, entre los cuáles están aquellos que hemos presentado anteriormente.

Verbos de manera

Los verbos de manera de movimiento identificados en nuestro corpus (276 para inglés y 123 para castellano) pueden agruparse en 2 categorías generales: *movimiento interno a la Figura* y *movimiento translativo* (cf. Talmy (2000b), *self-contained motion* y *translational motion*). Por movimiento interno a la Figura, entendemos aquellos modos en los que la Figura se mueve sin desplazarse a ningún otro lugar, como por ejemplo, un péndulo que oscila, un niño que se balancea en un columpio, etc. Por otro lado, movimiento translativo se refiere a aquellas acciones que transcurren mientras la Figura se desplaza o cambia de lugar; por ejemplo, si alguien camina o corre, o un pájaro vuela, se espera que haya un cambio de lugar con

respecto al comienzo de la acción. En general, nuestro análisis revela que ambas lenguas pueden expresar una gran variedad de información sobre la Manera de movimiento, y que, en ambos lexicones, hay un mayor número de verbos de manera que implican un cambio de lugar, es decir, movimiento translativo (un 77.17% del corpus de verbos de manera en inglés y un 59.35% de los verbos de manera en castellano).

Dentro de las maneras de movimiento interno a la Figura, 'cambio de postura' y 'sacudir, oscilar y vibrar' ('Shake, Swing and vibrate' en inglés) son las maneras de movimiento que más frecuentemente se expresan en ambas lenguas. Sin embargo, en castellano, se observa que hay un mayor número de verbos de manera referidos al cambio de postura que en inglés (concretamente, 28 en castellano frente a 17 en inglés). Por otro lado, encontramos otras diferencias interlingüísticas: en castellano no encontramos verbos de manera que expresen movimiento interno 'al revés' ('Upside Down' en inglés), como en los verbos ingleses *capsize, overturn, flip*.

Dentro del grupo de verbos de manera que implican un cambio de lugar, encontramos que, en inglés, las categorías de manera que más frecuentemente se expresan en verbos son: 'patrón motor' (23.55%[4]), 'vehículo' (18.84%), 'velocidad' (12.68%), y 'bailes' (6.88%), mientras que en castellano, 'patrón motor' (25.20%) y 'vehículo' (11.38%) son las más frecuentes. Como resultado, una porción significativa del lexicón de manera de ambas lenguas se centra en expresar (a) patrones motores básicos (maneras de andar, de correr, de saltar) y el (b) uso de vehículos como medio de locomoción. Con respecto a 'patrón motor', nuestros datos revelan que el léxico verbal inglés es mucho mas variado, y expresa detalles sobre la manera en que la Figura se desplaza mucho más específicos que los respectivos verbos en castellano. En general, encontramos numerosos verbos en inglés que lexicalizan:

- El estado físico y mental de la Figura mientras camina: relajado y por placer (*amble, hike, mosey, trek, stroll)*, enfado (*march, storm, stamp*), orgullo (*swagger, strut, parade*), cansado y con pies pesados (*trudge, plod, traipse*), herido (*limp, hobble*).

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[4] Nótese que los porcentajes son relativos al total de verbos de manera en cada lengua.

- Información sobre los pasos o saltos: *mince*, *scurry*, *scuttle* (pasos cortos), *stride*, *lope* (a grandes pasos o zancadas).

El inglés posee un mayor número de verbos referidos a 'patrón motor' y, por tanto, presenta una mayor granularidad semántica en este subdominio. Sin embargo, ambas lenguas muestran la misma organización del léxico verbal; tanto el inglés como el castellano tienen una mayor número de verbos que denotan distintos modos de andar (47 en inglés, 24 en castellano) que de correr (7 en inglés y 4 en castellano) o de saltar (11 en inglés y 3 en castellano).

También hemos observado que en inglés, el nombre de vehículos (*bike*, *cab*, *ferry*, *raft*, *ship*, *truck*, etc) y el nombre de distintos bailes (*foxtrot*, *twist*, *waltz,* etc) pueden emplearse como verbos de movimiento. Esta versatilidad no se encuentra en castellano; en nuestro corpus de verbos encontramos 3 verbos referidos a 'bailes' (*bailar*, *bailotear* (bailar de una manera descuidada) y *danzar*) frente a 19 en inglés, y 14 verbos referidos a 'vehículo' frente a 52 en inglés. A pesar de las diferencias cuantitativas, en ambas lenguas, encontramos tres tipos de verbos relacionados con vehículos: (1) verbos que implican desplazamiento mediante un vehículo: *conducir*, *pilotar*, *navegar*, *drive*, *cruise*, *ride* etc.; (2) verbos que denotan un vehículo o un instrumento específico: *bike*, *ferry, ship*, *ski*, *esquiar*, *patinar*, etc, y (3) verbos metonímicos que lexicalizan una parte de un vehículo para referirse al vehículo al completo: *remar* (remo por barco), *pedalear* (pedal por bicicleta), *oar*, *paddle* y *row* (remo por barco), *pedal* (pedal por bicicleta), *sail* (vela por barco), *wheel* (rueda por coche o vehículo con ruedas).

El léxico verbal en castellano es más parco en detalles sobre maneras de movimiento, pero encontramos tres verbos muy arraigados en la cultura española: *taconear*, *zapatear* y *chancletear*, que expresan información que parece no poder lexicalizarse en un verbo en inglés. Concretamente, estos verbos denotan un determinado sonido/ruido que se produce al bailar y/o al andar llevando un determinado tipo de calzado.

ESTUDIOS EXPERIMENTALES

Estudio 1. Definición y listado de rasgos semánticos

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Este estudio ha permitido identificar la información semántica que los hablantes nativos de ambas lenguas consideran relevante para describir las acciones: *moverse, andar, correr* y *saltar* en castellano, y *move, walk, run* and *jump* en inglés. En general, *moverse* y *move* se definen como verbos de movimiento que denotan tanto un movimiento interno de la Figura como un movimiento translativo; *andar* y *walk* se describen como verbos que representan la manera más básica de desplazarse empleando los propios medios de locomoción (es decir, las piernas); *correr* y *run* se definen como verbos de movimiento translativo caracterizados por una velocidad elevada y por una forma peculiar de mover las piernas; y, por último, *saltar* y *jump* se describen como verbos que denotan que la Figura se impulsa desde el suelo. Para este verbo, el cambio de lugar o movimiento translativo no parece ser un rasgo definitorio.

Estudio 2. Listado libre de verbos

Este estudio proporciona la primera evidencia empírica de que el inglés y el castellano organizan su lexicón verbal referido a movimiento humano del mismo modo, respaldando los resultados de nuestro análisis lingüístico. Ambas lenguas están más interesadas en expresar en sus verbos de movimiento distintos modos de andar, que de correr o de saltar, como podemos deducir tras observar que tanto los hablantes nativos de inglés como de castellano listaron más verbos de andar que de correr o de saltar.

Estudio 3. Valoración / Categorización de verbos

Uno de los problemas que surgió a la hora de codificar nuestro corpus de verbos en inglés y en castellano fue la dificultad de decidir si un verbo denotaba una manera de andar, de correr o de saltar, al no quedar siempre claro en las definiciones dadas por los diccionarios. Con este estudio obtuvimos evidencia empírica sobre qué verbos de movimiento (a) se consideran como maneras de andar, de correr o de saltar, (b) cuáles no parecen pertenecer a ningún patrón motor específico, y (c) cuáles parecen ser casos intermedios.

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En primer lugar, encontramos claros ejemplos de andar (p.ej., *acechar, acompañar, ambular, anadear, caminar, contonearse, desfilar, patear, rondar, renquear*; *amble, clump, crawl, creep, parade, plod, stagger, stalk, stride, tipote, trudge*), de correr (p.ej., *acelerar, aligerar, esprintar, fugarse*; inglés: *bolt, canter, charge, chase, dart, dash, flee, sprint, zoom*) y de saltar (p.ej., *brincar*; *bounce, hop, leap, skip, sommersault, spring, vault*). En segundo lugar, los verbos de cambio de postura (p.ej., *encorvarse, slouch*), los de movimiento obstruido (p.ej., *trip*), los verbos que se definen en diccionarios como andar o correr alegremente (p.ej., *retozar, frolic, frisk, gambol*) no parecen denotar ningún patrón motor específico. En tercer lugar, encontramos verbos que parecen implicar tanto andar como correr (p.ej., *corretear, desacelerar, esquivar, regatear*; *dribble, hasten, hurry, rush, skitter, trot*), otros andar y saltar (como *taconear* en castellano y *prance* en inglés) y, por último, el verbo *precipitarse* parece ser un buen ejemplo de correr y saltar. Adicionalmente, los resultados de este estudio confirman de nuevo los del estudio anterior; la mayoría de verbos de movimiento humano incluidos en este estudio se han considerado como mejores ejemplos de andar, que de correr o de saltar.

Conclusiones finales

El análisis contrastivo de una gran porción del léxico verbal de movimiento en inglés y en castellano ha permitido observar algunas semejanzas. En primer lugar, el mayor número de verbos amalgama Movimiento y otro componente semántico, bien Manera o Sendero, lo que sugiere que son los patrones de lexicalización más frecuentes en estas lenguas. En segundo lugar, los verbos de sendero expresan, al menos, 13 tipos de Sendero. Entre ellos, los que más frecuentemente se lexicalizan en verbos en ambas lenguas son: 'Lejos de la Base', 'Hasta encima o arriba de la Base – Hacia arriba', 'Hacia la Base', 'Hacia abajo desde la Base – Hacia abajo hasta la Base – Hacia abajo'. Por otro lado, 'Fuera de la Base' es el tipo de Sendero menos frecuente en ambos lexicones. En tercer lugar, ambas lenguas poseen un mayor número de verbos que expresan distintos modos de andar, que de correr o saltar. Estas tendencias sugieren que hay semejanzas importantes entre el inglés y el

castellano, y probablemente entre otras lenguas de marco verbal y satélite, en cómo se estructura el lexicón verbal de movimiento. Por tanto, la metodología empleada se puede extrapolar al estudio de otras lenguas de marco verbal y satélite con el propósito de testear si estas tres tendencias se aplican a otras lenguas.

Aparte de estas similitudes, también se ha reparado en una serie de diferencias interlingüísticas. Por un lado, el léxico verbal de manera de movimiento en inglés es mucho más extenso que el del castellano, como ya había sugerido la literatura anterior, y tiende a explotar alguna información semántica sobre Manera con mucha más frecuencia que en los verbos de manera en castellano (p.ej., información sobre el estado físico y mental de la Figura, detalles del movimiento de sus piernas mientras anda, corre o salta). Por el otro, el léxico verbal de sendero en castellano rebasa en número al inglés, aunque se ha observado que ambas lenguas pueden expresar los mismos tipos de Sendero.

Para concluir, el análisis semántico del corpus de verbos en inglés y en castellano tiene, como toda investigación, sus limitaciones. La codificación semántica de cada verbo se fundamenta en las definiciones dadas por diccionarios monolingües así como en mi introspección lingüística como hablante nativa de castellano y en la introspección de informantes nativos ingleses. El análisis llevado a cabo en este trabajo, por tanto, es uno entre otros análisis posibles, y en ningún momento se asume que la codificación semántica sea equivalente a la representación mental que los hablantes tienen de esos verbos. Sin embargo, el análisis semántico ha permitido formular hipótesis sobre la naturaleza del léxico verbal en inglés y en castellano, y proporciona una base lingüístico-tipológica sólida para continuar con la investigación a nivel experimental. Aunque una tesis doctoral no sea suficiente para abarcar y responder a todas las preguntas de investigación derivadas del análisis, la presente investigación ha logrado cubrir satisfactoriamente el subdominio del movimiento humano gracias a los tres estudios experimentales llevados a cabo. Por primera vez en esta área de investigación, estos estudios desvelan (a) lo que los hablantes piensan sobre el significado de unos verbos de movimiento básicos, (b) que ambas lenguas siguen la misma tendencia en la organización de la porción del léxico verbal referida al movimiento humano, y sugieren (c) que algunos verbos de movimiento implican más de un patrón motor.