



## THE COGNITIVE AND LINGUISTIC ASPECTS OF VERBS OF MOTION IN ENGLISH

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<b>Received:</b> 6 <sup>th</sup> June 2023 <b>Accepted:</b> 6 <sup>th</sup> July 2023 <b>Published:</b> 8 <sup>th</sup> August 2023	This scientific article explores the intricate relationship between language, cognition, and the expression of motion events in the English language. Verbs of motion play a crucial role in describing how entities move in space, and their analysis provides valuable insights into the cognitive representations of motion. Drawing on linguistic research, cognitive science, and psycholinguistics, this paper investigates the syntactic and semantic structures of motion verbs, their metaphorical extensions, and the role of gestures in their linguistic expression. Additionally, the article discusses how these linguistic expressions contribute to the construction of spatial conceptualization and communication in English-speaking communities.
<b>Keywords:</b> <i>Verbs of motion, English language, motion events, syntactic patterns, argument structure, semantic roles, path, manner, ground, aspectual properties, tense properties, metaphorical extensions.</i>	

### INTRODUCTION

Verbs of motion are a fundamental aspect of the English language, enabling speakers to describe and understand various motion events. This section provides an overview of the significance of motion verbs, their prevalence in everyday language use, and the research questions driving the analysis.

This section explores the syntactic properties of motion verbs in English, including intransitive, transitive, and ditransitive constructions. We examine how motion verbs interact with different sentence structures and explore the role of prepositions and particles in expressing complex motion events.

Here, we investigate the argument structure of motion verbs and the roles assigned to their arguments. We analyze how motion events involve participants such as the agent, theme, and goal, and how these roles influence the conceptualization of motion events in English.

This section delves into the semantic dimensions of motion verbs, including their ability to encode path information, manner of motion, and the spatial "ground" with which the motion is associated. We examine the various ways these dimensions are represented in motion expressions.

Motion verbs interact with aspect and tense, contributing to the temporal interpretation of motion events. This part of the article explores how different verb forms and temporal expressions interact with motion verbs to convey specific temporal nuances. In the expressions to walk slowly (quickly), or to come back quickly (slowly) the adverbs specify time intervals between individual kinetic quanta (their temporal sum

total marks the duration of the motion). Since these components of meaning pertain to temporal configuration of individual quanta, they operate at the level of physical structuration of movement as lexically encoded by the verb. More specifically, they operate within the sphere of kinetic (external temporal) structure of movement, which must be kept apart from the level of the internal temporal contour (internal semantic structure) of motion verbs. At this point let me make a brief terminological remark concerning the 'internal semantic structure' of verbs. This term is used in at least two different senses. It may describe the type of componential semantic analysis in which certain semantic concepts operating at a higher level of abstraction are specified (e.g. the concepts of change, motion, contact or cause), or it may be used to specify ways of viewing situation types in terms of the speaker's aspectual choices. The term 'internal semantic structure' in the latter sense relates to the internal temporal contour or distribution of an event in terms of the beginning, middle and end phases.

Language often employs motion verbs metaphorically to describe abstract concepts and emotions. This section investigates the metaphorical extensions of motion verbs in English and explores how these linguistic expressions reflect conceptual mappings between physical motion and abstract domains. Metaphoric uses of verbs are frequent in everyday language. We use phrases like surmounting a problem, eating our words, or stumbling on a solution in ordinary conversation. Beyond these local metaphors, research in cognitive linguistics has documented large systems of



conventional metaphors that pervade language, and verb metaphors feature prominently among these.

It is certainly true that due to the absence of its internal semantic structure, *nod* can only be predicated for single moments of time (*nod* can combine with the progressive only in its iterative meaning). However, punctuality of action does not necessarily have to be accompanied by the absence of the duration of the respective movement. For example, the movement as encoded in *nod* does have duration – this fact asserts itself in the verb's capacity to combine with the adverb *slowly* (one can *slowly nod* one's head). The compatibility of the adverb *slowly* with *nod* is enabled by the fact that *slowly*, marking a slow progression from one kinetic quantum to another, operates at the level of kinetic structuration of movement. (Needless to say, the term 'duration' as used in this connection specifies 'the sum total of the temporal intervals between individual kinetic quanta'.) That is, the level of the external temporal structuration must be kept apart from the level of the internal temporal structure of motion verbs. The punctuality of *nod* thus consists in the absence of its internal semantic structure (internal temporal contour), not in the absence of external temporal structuration – logically, the verb must go through all the kinetic phases if it is to be what it is claimed to be.

Before dealing with speed as a component of meaning pertaining to the external temporal structuration of motion verbs, let me first explain the terms 'manner-conflating verbs' and 'path-conflating verbs'.

**DISCUSSIONS.** In his description of motion situation, Talmy (1975, 1985, 2001) distinguishes the following components: the Figure (i.e. the object moving with respect to another object, called the Ground), the Path (i.e. the course followed by the Figure), and Motion (which refers to the presence per se of motion in the event of motion). In addition to these internal components, a Motion event can be associated with an external Co-event that most often bears the relation of Manner. For example, the verb *roll* (as in the sentence *The pencil rolled off the table*) conflates two components: Motion plus Manner. Fellbaum (1990:285) adds, among other semantic components, also the speed of motion (*run*, *stroll*).

Apart from a numerous group of manner-conflating verbs (*run*, *walk*, *jog*, *swim*, *creep*, *crawl*, *fly*, *stroll*, *rush*, *trudge along*), English has a number of motion verbs which conflate motion with path (*arrive*, *come*, *go*, *depart*, *fall*, *descend*, *turn*, *cross*, *enter*, *escape*, *ascend*, *retreat*, *recede*, *advance*, *proceed*, *exit*, *pass*). The aspects of path encoded in these verbs

'concern the configuration and position of the path, often specified in relation to the direction of motion'.

The adverbs *quickly* and *slowly*, marking a temporal progression from one kinetic quantum to another, can generally be combined with verbs of motion.

An early approach to studying verb metaphor in psychology was research on the verb mutability effect in sentence processing. Verb mutability refers to the phenomenon whereby, under conditions of semantic strain, the verb is more likely to adapt its meaning to the noun than the reverse. Gentner and France investigated this effect by having participants paraphrase simple intransitive sentences that varied in semantic strain. They selected eight nouns and eight verbs and combined them factorially to generate 64 sentences. The nouns and verbs were selected such that some combinations generated sentences in which the verb received its expected subject type, resulting in semantically unstrained, or literally interpretable, sentences (e.g., *The daughter agreed*), while other combinations generated sentences in which the noun violated the verb's expected subject type, resulting in semantically strained sentences that were not literally interpretable (e.g., *The car agreed*).

Gentner and France found that when paraphrasing, people altered the verb meanings more than the noun meanings overall, and that this effect increased with semantic strain. Thus, while participants generally preserved the standard meaning of both the noun and the verb when interpreting unstrained sentences (e.g., paraphrasing *The daughter agreed* as *The girl concurred*), there was a marked preference for changing the meaning of the verb, and not the noun, when interpreting strained sentences (e.g., paraphrasing *The car agreed* as *The automobile was easily controlled*). In other words, under conditions of semantic strain, people tended to interpret the verb metaphorically and the noun literally.

Embodied cognition suggests that language and bodily experiences are interconnected. This part of the article examines the role of gestures in motion events and their relationship to the linguistic expression of motion verbs, highlighting how bodily experiences shape language use.

**RESEARCH RESULTS.** Motion is generally defined as the movement of an object against a background. Every motion is described relative to a frame of reference. There are three types of spatial frame of reference: viewpoint-centered (egocentric), geocentric, and object-centered. Within viewpoint-centered frame of reference, the object's movement is described relative



to the observer's position (e.g., turn right). Geo-cardinal positions serve as the reference in a geocentric frame of reference (e.g., go to the south, raindrops are falling). In an object-centered frame of reference, the position of the moving object, or that of an external object, serves as the reference point (e.g., he entered the room). The differentiation between various types of frame of reference has some implications when concepts are described through the mediation of gestures. Gestures are defined as the spontaneously produced body movements accompanying our speech and thought define embodied actions as the purposeful and directed body states or body movements that an individual makes to learn something. These purposeful body states or body movements describe the spatial representations of concepts or relations between concepts. A very closely related concept is directed action. Thomas and Lleras define directed actions as body movements that students are instructed to engage in to learn a concept or to solve a problem. Directed actions can be seen as a subset of embodied actions. Throughout this article, we use 'embodied action' as a broad term that includes directed actions. The following two sections review some works on motion-based metaphors, gestures, and embodied actions to prepare the ground to show how these tools can be employed to enhance the process of mathematics teaching and learning. Many daily and scientific concepts are inherently motion events or are spatial in nature. For example, when we talk about a flying bird, we may show the trajectory of the movement by a hand gesture. When we talk about a circular object, we may use a hand gesture to show the shape of that object. Many concepts are metaphorically described in terms of motion events. The metaphor we are approaching holidays describes an abstract concept in terms of a motion event. The metaphorical phrase grasp an idea describes an abstract concept in terms of a body action. We may use gestures to describe these abstract concepts metaphorically. In mathematics, many concepts are metaphorically represented by spatial concepts or motion events. These metaphors are called mathematical metaphors. The role of mathematical metaphors in enhancing the process of mathematics learning has been supported by many works.

This section briefly compares the expression of verbs of motion in English to other languages, exploring both universal and language-specific patterns. We also discuss how cultural factors influence the linguistic representation of motion events.

**IN CONCLUSION**, this scientific article provides a comprehensive analysis of the cognitive and linguistic

aspects of verbs of motion in English. Understanding these aspects is crucial for language learners, researchers, and educators seeking to gain insights into the intricacies of expressing motion events in the English language. Furthermore, the exploration of the cognitive underpinnings of motion verbs enhances our comprehension of how language and thought intersect in the domain of motion events, contributing to the broader field of cognitive linguistics and psycholinguistics.

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