

Lexical Expressions of Motion in Physical Environments a Cognitive Linguistics Perspective

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Abstract

This study aims to delve into the interaction between motion verbs, manners, and paths in the Vietnamese language to look at the lexicalization of motion occurrences. Utilizing Talmy's lexicalization patterns for cognitive linguistics, the study seeks to understand how Vietnamese encodes and conceptualizes motion events in a variety of physical contexts, such as the air, water, and land. A mixed-methods approach is used in this work, integrating qualitative analysis of annotated textual data with quantitative frequency analysis. Vietnamese has a rich system of motion verbs that may be paired with manner and path expressions to produce complex and subtle descriptions of movement, according to the research. The language displays intricate differences when describing the direction, velocity, and kind of vehicle of motion, in addition to various linear, curved, vertical, circular, and multidirectional routes. The complex interplay between language, cognition, and the embodied experience of motion is highlighted by this linguistic variety, which is a reflection of Vietnamese speakers' astute observation and interpretation of the physical world. The work adds to our knowledge of how language organizes and expresses the basic idea of motion and provides insights into the cognitive and cultural bases of language expression.

Keywords: Motion Events, Lexicalization Patterns, Cognitive Linguistics, Physical Environments

INTRODUCTION

Numerous hypotheses have been put forth to explain how language represents motion, a notion that has been thoroughly studied by linguists all around the world. The idea of lexicalization patterns, first presented by Talmy (1985, 2000), looks into how languages encode motion events. In the words of Talmy (2000: 26), these patterns emphasize the choice between the path and mode of motion and their transformation into formal language components. Furthermore, Jackendoff (1990) used thematic role analysis to examine the semantic structures of motion verbs, while Langacker (1987) examined how motion is conceptualized in relation to time. In addition, Talmy (2000:27) stated that by examining a group of components that make up conceptual domains such as space, time, place, motion, and force, he attempts to address the question of how language organizes a concept at the general level.

International investigations have significantly contributed to our understanding of motion events. Slobin (1996, 2004), Nunez (2007), and Frez (2008) studied the representation of motion events in different languages, while Konishi et al. (2016) and Emerson et al. (2021) examined cross-linguistic transfer in 'Turkish-English bilinguals' accounts of motion occurrences. Han (2011) analyzed the lexicalization patterns of motion verbs in English and Vietnamese, highlighting typological distinctions in the strategies used to combine elements of path and manner of motion with the concept of movement. Bien Duong (2021) explored fictive motion models, highlighting that the semantic scope of motion verbs extends beyond literal interpretation, encompassing relationships that do not involve physical motion or state change.

This paper proposes a comprehensive analysis of the Vietnamese language's lexical representations of motion events in physical settings. It uses Talmy's lexicalization theory and cognitive semantics framework to analyze the intricate interplay between motion verbs, manners, and paths in Vietnamese. The study will use semantic and frequency analyses, followed by a qualitative examination of annotated data from various textual sources. This method will provide a comprehensive understanding of how motion events are conceptualized and encoded in Vietnamese across various physical contexts.

The research aims to decipher the complex interactions between lexical phrases, manners, and paths, focusing on the investigation of research questions related to motion occurrences in physical contexts within the Vietnamese language.

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How does the Vietnamese language encode and lexicalize motion events in different physical environments (air, water, and land) through the combination of motion verbs, manners, and paths?

What are the prominent patterns, frequencies, and semantic characteristics of the lexical expressions used to depict motion events across these diverse physical contexts?

Answering these questions, this study hopes to provide a more subtle knowledge of the linguistic representation and conceptualization of motion within the Vietnamese language, and to illuminate the relationship between language, cognition, and the physical world.

LITERATURE REVIEW

Background of the Study

Motion has been a subject of fascination for linguists worldwide, leading to the development of various theories and concepts to explain how language expresses this concept. Fillmore (1966, 1968) laid the foundation by outlining motion elements and presenting case grammar as a framework for dissecting verb tenses. Langacker (1987) examined motion's conceptualization in relation to the temporal domain, while Jackendoff (1990) explored the semantic structures of motion verbs using thematic role analysis. Leonard Talmy's research on lexicalization patterns (1985, 2000) established the idea that languages encode motion occurrences. This framework has influenced numerous studies across languages, such as Slobin's comparative assessments of motion event representation and Nunez (2007) and Frez (2008).

Recent research has focused on motion events in specific languages and circumstances. Han (2011) compared the lexicalization patterns of motion verbs in English and Vietnamese, emphasizing the typological and general principles that underlie these patterns. Bien Duong (2021) examined models of fictive motion, highlighting that the semantic range of motion verbs goes beyond literal interpretation to include interactions that do not always require physical motion. Konishi et al. (2016) and Emerson et al. (2021) conducted further research on individual differences in nonlinguistic event classification and their impact on motion verb understanding. These investigations have contributed to our understanding of the complex interplay between language, cognition, and the conceptualization of motion in various linguistic and cultural situations.

Cognitive Linguistics

Cognitive Linguistics is a contemporary approach to the study of language that focuses on the role of cognition in linguistic phenomena. A key pioneer of cognitive linguistics, Langacker (2008:4) defines it as a theoretical approach that explicitly recognizes the decisive role of meaning, conceptualization, and experience in the study of language and the foundational status of cognitive abilities like categorization, symbolization, perspective-taking, and metaphorical mapping. In this definition, Langacker posits that meaning, conceptualization, and human cognitive capacities are crucial components of language comprehension. It emphasizes the notion that language is derived from human intellect and is molded by our experiences and thought processes.

From another perspective, George Lakoff (1990: 1) adds that cognitive linguistics is an approach that goes beyond the visible structure of language and explores the conceptual underpinnings. He said that it examines the relationships between syntax and semantics, the metaphorical structure of concepts, the meaning of language in context, the foundations of language itself in human experience, and the nature of the human mind and brain. Lakoff explains that the study of the conceptual underpinnings of language is crucial. These include the link between form and meaning, metaphorical structuring, and the embodied aspect of language that is based on human experience and cognition.

In examining *Lexical Expressions of Motion in Physical Environments*, cognitive linguistics provides a useful framework for comprehending how motion occurrences are conceptualized and represented linguistically. Its focus on the interaction of language, cognition, and embodied experiences sheds light on the many ways that motion is interpreted, conceived, and stored in various languages. The linguistic expressions of motion in relation to the physical environments and the cognitive processes that underlie their conceptualization can be analyzed through the use of concepts such as *lexicalization patterns* (Talmy, 2000), *image schemas* (Lakoff, 1987), and *embodied simulations* (Bergen, 2012). However, Talmy's lexicalization pattern is chosen as the theoretical framework for this study.

Talmy's Lexicalization Patterns

Talmy's lexicalization patterns theory in cognitive linguistics provides a comprehensive framework for understanding how languages contain motion events. It focuses on how the linguistic structure organizes and lexicalizes motion components, such as path and manner, and how these elements are encoded into verbs, particles, and grammatical constructs.

Talmy's theory distinguishes between verb-framed and satellite-framed languages, with satellite-framed languages like English representing mode of motion through the verb root, and verb-framed languages like Spanish using gerunds or adverbial phrases. This distinction is crucial in cognitive linguistics, as it provides an analytical framework for understanding how different languages represent motion events in various physical contexts, such as air, water, and land.

Through an analysis of the lexicalization patterns of motion verbs, manners, and paths, the researcher can acquire valuable insights on how motion is conceptualized and represented linguistically in various circumstances. According to Talmy (2000: 27), I attempt to address the question of how language organizes a concept at the general level by examining a set of components that constitute conceptual domains such as space, time, situation, motion, and force. This theory can be used to investigate how the Vietnamese language encodes and organizes motion occurrences in various physical situations, providing insight into the interactions between language, cognition, and the physical world.

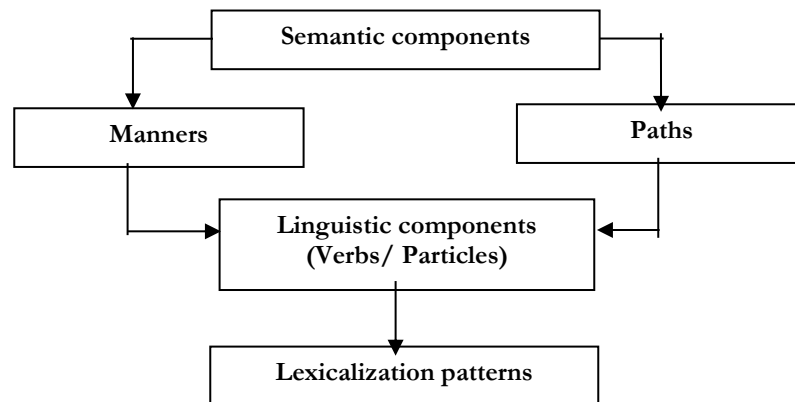


Figure 1. Lexicalization patterns

METHODOLOGY

Methodological Approaches

A mixed-approaches strategy is used in this study, integrating quantitative and qualitative methods. To find patterns and trends in the linguistic expressions of motion events, the quantitative approach uses frequency analysis. To gain a more subtle knowledge of how motion events are conceptualized and encoded in Vietnamese across a range of physical circumstances, the qualitative dimension involves a detailed investigation of annotated data from several textual sources.

Data Collection

Ten Vietnamese stories, coded ST01 through ST10, provided the study's data. A wide variety of genres, including fiction, non-fiction, and folktales, are included in these stories, guaranteeing a varied portrayal of descriptions of motion events. All of the motion event occurrences, together with the related behaviors and paths, are carefully marked and extracted for examination in the manually annotated stories that have been chosen.

Data Analysis

Talmy's lexicalization pattern theory serves as the foundation for the data analysis since it offers a framework for investigating how languages encode motion events. The lexical expressions—such as motion verbs, manners, and paths—that are employed to represent motion events are found by methodically analyzing the gathered data. Then, a thorough analysis of the frequency and semantic properties of these utterances makes it possible to pinpoint important

trends and classifications. In order to obtain a greater understanding of the subtleties and conceptualizations underlying the language representations of motion events in Vietnamese, a qualitative analysis is also carried out, in which the annotated data is carefully examined.

FINDING AND DISCUSSION

Manner Motion in The Physical Environments

Manner of motion describes the particular way, or style, in which a movement or activity is executed. It gives more specifics on the motion's attributes, like how quickly, smoothly, forcefully, or gracefully an item or entity moves in a given setting. The different motion modes discovered in the air, land, and water physical environments are compiled in the table below, along with the quantity of each mode and motion verbs discovered in the data:

Table 1. Manners of motion in physical environment

Environments	Manners	Verbs	Number
Airs	Style	Bay 'to fly', Liệng 'to hover', Lượn 'to glide', Trôi 'to drift', Lững lờ 'to float'	5
	Speed	Lao 'to dart', Phóng 'to propel', Vút 'to soar'	3
Total	02	08	
Land	Style	Bò 'to crawl', Trườn 'to crawl', Bước 'to step', Nhảy 'to jump', Chui 'to sneak', Mọc 'to grow', Đi bộ 'to walk', Trỗi 'to rise up', Nổi 'to rise', Mò mẫm 'to creep', Lò cò 'to trot', Lảo đảo 'to sway', Đi bộ 'to walk', Đi chập chững 'to toddle'	12
	Speed	Chạy 'to run', Chạy bộ 'to jog', Chạy 'to run', Lăn 'to roll', Trượt 'to glide'	5
	Vehicle	Đi xe ô tô 'to drive', Đi tàu hỏa 'to rail', Đi xe đạp 'to ride a bike'	3
Total	03	20	
Water	Figure's motion	Bơi 'to swim', Nặn 'to dive', Lội 'to wade', Chìm 'to sink', Nổi 'to float', Dạt 'to drift', Ngoi 'to rise up', Trỗi 'to surface', Chìm 'to sink', Lướt 'to skim'	10
	Ground's motion	Chảy 'to flow', Tràn 'to overflow', Bốc hơi 'to evaporate', Trôi 'to float'	4
Total	02	14	

Manner Motion in The Air

The results show that the examination of manner motion in the aerial domain of the Vietnamese language exposes a highly sophisticated and subtle linguistic system that fits with key typological conclusions from cross-linguistic studies on motion event encoding. This research reveals the intricate relationship between language, cognition, and embodied experiences in the spatial representation of movement. One of the most noticeable elements is the language classification of airborne motion into two unique categories: style manners and speed manners. This paradox shows the Vietnamese speakers' great awareness to the tiny changes in the ways figures move through the air, highlighting the language's profound comprehension of aerial kinematics. Verbs like *bay* (to fly), *lượn* (to glide), and *lững lờ* (to float) clearly convey the smooth and effortless artistic manners, producing a feeling of elegance and fluidity in the characters' motions. For instance, examine the sentence below:

- (1) Chim bồ câu đang **lượn** trên bầu trời.

The dove glides in the sky

This sentence elegantly illustrates the use of the verb *lượn* to depict the smooth and curving aerial movement of the bird, highlighting the language's ability to express the nuances of stylistic manners with precision. On the other hand, verbs like *phóng* (to propel), *vút* (to soar), and *lao* (to dart) capture the power and dynamic quality of flying motion by expressing the momentum and velocity of speed. Take the following sentence as an illustrative example.

- (2) Máy bay **phóng** lên bầu trời

The plane takes off.

This sentence is a good example of how the verb *phóng* may successfully convey the swift and forceful action of an airplane taking off, demonstrating how speedy manners are represented linguistically in Vietnamese.

The Vietnamese language exhibits a strong system for recording nuances of manner in aerial motion occurrences, demonstrating a unique blend of strategies. This lexical variation supports cross-linguistic observations about manner-rich descriptions in some language families. The Vietnamese language's sensitivity to spatial conceptualization allows

researchers to analyze how it encodes and conceptualizes motion occurrences in various physical contexts. The close connection between language, cognition, and embodied experiences is shown via the examination of Vietnamese aerial motion gestures. The speakers' extensive knowledge of aerial movement and their thorough observation of the natural world are reflected in their wide vocabulary repertoire, which highlights the cognitive and cultural underpinnings of language expression. This study adds to our understanding of how languages encode and conceptualize the basic idea of motion by utilizing Talmy's theoretical framework and the wealth of literature on motion verbs. It also sheds light on the complex interactions between linguistic representations and cognitive processes.

To sum up, the analysis of manner motion in the Vietnamese language's aerial domain reveals an extremely complex linguistic system that is consistent with important typological findings from cross-linguistic research. Using the extensive literature on motion verbs as a starting point and Talmy's lexicalization patterns as a theoretical framework, this research sheds light on the intricate connection between language, cognition, and embodied experiences in the spatial representation of movement. The work adds to our understanding of the cognitive and cultural foundations of language expression and underlines the extensive lexical diversity and distinctive combination of encoding mechanisms in the Vietnamese language.

Manner Motion on The Land

The terrestrial domain in Vietnamese consists of a third mode of motion known as the vehicle way, in addition to the style and speed manners shared with the aerial environment. The two subcategories of the land manners style are horizontal manners and vertical manners. The figurines serve as close-to-the-ground living things in horizontal ways; they often move at very moderate speeds and with distinct body motions. An illustration of this would be the sentence below:

(3) Con rắn đang **bò** trên đất

The snake is crawling on the ground.

In this example, the verb *bò* (to crawl) is used to describe how a snake moves on the ground and the snake's low, horizontal movement when it is in close contact with the ground, as illustrated in Figure 2.



(Source: <https://www.aplustopper.com/movement-in-snakes/>)

Figure 2. Manner in the snake's motion

The verbs *chui* (to sneak), *mọc* (to grow), *trỗi* (to surface), and *nhô* (to rise) refer to the motion directions of inanimate objects in the terrestrial environment. The movement of objects such as trees, termite mounds, and tree roots, which travel from lower locations below the surface to higher places above it, is usually described by these verbs. The vertical way verb *mọc*, for example, is used in the sentence below, which describes the bamboo's laborious and sluggish ascent, and is illustrated in Figure 3.

(4) Cây măng đã **mọc** lên

The bamboo shoots grew up.



(Source: <https://givasolar.com/>)

Figure 3. Manner in the bamboos' motion

The Vietnamese language uses a range of motion verbs to describe the physical contact between the body and the ground during movement, which relates to speed etiquette on land. These consist of *đi bộ* (to walk), *chạy* (to run), and *chạy bộ* (to jog). The manner verb *đi bộ* indicates a slower speed, but *chạy* and *chạy bộ* indicate high speeds of movement. These speed manners' statistics include both living things, like people and animals, and inanimate objects, like cars. Ultimately, certain vehicle etiquette is also expressed in Vietnamese, such as *đi xe đạp* (to ride a bicycle) and *đi ô tô* (to drive a car). These ways of moving demand that the characters executing these kinds of movements be human, since the first depends on the legs of the character to move, and the latter depends on an automobile's mechanism. Fourteen different manner verbs were found in the dataset that was evaluated to depict motion on land.

Vietnamese is one language that has a very intricate lexicalization system for earthly movement. The embodied kinematics of physical movement are represented by a wide variety of linguistic vocabulary among Vietnamese speakers. These vocabulary items range from the distinctive bodily gestures expressed by manners in the horizontal style, such as *bò* (to crawl), to the gradual upward trajectory described by manners in the vertical style, such as *trồng* (to grow). This attention to the smallest details of style is distinctive from many other languages, which could depend more heavily on path-based motion expressions. Moreover, the Vietnamese method reflects a culturally-specific point of view based on keen observation of the natural world and lived, sensorimotor experiences of the human body in motion. Vietnamese highlights the tight relationship between language, cognition, and the natural world by accurately describing the dynamic complexity of land movement thanks to its extensive vocabulary. The study provides support for linguistic studies on motion verbs by demonstrating that particular families are more likely to have manner-rich descriptions. Vietnamese data confirms this pattern. Languages arrange motion events according to a theoretical framework known as lexicalization patterns. Sensitivity to spatial cognition is seen in the Vietnamese language.

The study contends that the Vietnamese method of lexicalizing occurrences involving terrestrial mobility emphasizes the language's complex relationship to embodied cognition and cultural experiences. Rooted in the speakers' acute observation of the natural world and their lived experiences of navigating physical environments, the extensive repertoire of manner verbs and the subtle distinctions between horizontal, vertical, and speed manners suggest a keen attunement to the physical kinematics of movement. This viewpoint is consistent with the fundamental ideas of cognitive linguistics, which highlight how language is embodied and rooted in sensory experiences. Furthermore, we argue that the Vietnamese data cast doubt on the idea that manner-salient and path-salient languages can be strictly distinguished from one another. Rather, Vietnamese demonstrates a subtle interaction between method and path encoding, which reflects the intricate and diverse characteristics of spatial cognition. As will be covered in the next sections of the research, the language uses a variety of techniques to transmit path information in addition to its extensive vocabulary for describing methods.

All things considered, the researcher's viewpoint emphasizes the important information that can be discovered by studying the lexicalization of motion events in many languages, including Vietnamese. Researchers can get a deeper understanding of the complex links between language, cognition, and the physical environment by combining theoretical frameworks such as Talmy's lexicalization patterns with actual data and cross-linguistic observations.

Manner Motion In The Water

Concept of the motion in the water describes a range of techniques used to propel and move through an aquatic environment. These behaviors are frequently separated into two groups: ground motion and figure motion. Ten verbs

are used to describe the motion of the figure and four verbs describe the motion of the ground, according to the dataset that was evaluated. This suggests that Vietnamese has an extensive vocabulary for conveying aquatic motions.

Motions such as *bơi* (to swim), *lặn* (to dive), *lội* (to wade), *nổi* (to float), *dạt* (to drift), *ngoi* (to rise up), *trỗi* (to surface), *chìm* (to sink), and *lướt* (to skim) are some of the ways that figures move through water. The manners of *bơi*, *lội*, *nổi*, and *lướt*, for example, always indicate motion in which the figure makes contact with the water's surface, but the manners of *ngoi*, *trỗi*, and *chìm* are always indicative of unique styles with vertical motion directions. These distinctive differences are illustrated in the images below:

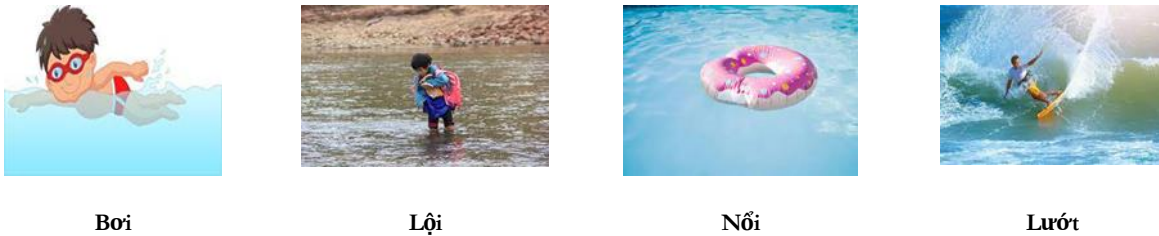


Figure 4: Manners of *bơi*, *lội*, *nổi* and *lướt*

A wide range of lexical expressions are exhibited by the figure's motion mannerisms in Vietnamese aquatic situations. Verbs like *bơi* (to swim), *lội* (to wade), *nổi* (to float), and *lướt* (to skim) illustrate how the figure moves in relation to the water's surface, emphasizing the interaction between the figure and the surface. Example 5 is a case in point.

- (5) Con cá **bơi** trong hồ
The fish is swimming in the pool.

The fish in this example moves fluidly through the water, whereas the youngster wades across the stream in the example below:

- (6) Em bé **lội** qua con suối
The child is wading across the stream.

This example highlights the figure's physical relationship with the water. These techniques beautifully depict the embodied sensation of swimming.

In Vietnamese aquatic situations, the ground's motion manners speak of the water's or other aquatic substances' own motion, not the motion of the figure. Verbs that describe the dynamic movement of water or other materials in an aquatic environment include *chảy* (to flow), *tràn* (to overflow), and *bốc hơi* (to evaporate).

- (7) Dòng sông **chảy** xiết
The river runs swiftly.

The verb *chảy* example portrays the river's continuous movement, but the verb *tràn* in example (8) conveys the water's excess or uncontrollable movement. The attention to the natural behaviors and processes seen in aquatic environments is reflected in these styles of speaking in Vietnamese.

- (8) Nước **tràn** ra khỏi bờ
The water overflows the banks.

The way that the movement of the figure and the motion of the ground interact is one of the distinguishing characteristics of the way that water motion is represented in Vietnamese. The language terms capture the movements of the figure as well as the dynamic behavior of the aquatic environment, highlighting the comprehensive understanding of motion in this field. Vietnamese is sensitive to the intricate and entangled character of movement in aquatic environments, which is reflected in the culture's keen awareness and observation of the natural world. This integrated

method for describing water-related motion occurrences underlines this sensitivity. The study shows that manner-rich descriptions are more prevalent in some language families, which validates typological findings on motion verbs in different languages. This trend is confirmed by Vietnamese data, showing a distinct combination of techniques and sensitivity to spatial conceptualization.

Vietnamese lexicalization of aquatic motion occurrences, according to the researcher, emphasizes the language's complex link with embodied cognition and cultural experiences. The speakers' wide range of manner verbs and their subtle distinctions between surface and vertical manners indicate a keen understanding of the physical kinematics of aquatic movement. These traits are rooted in their keen observation of the natural world and their personal experiences navigating water environments. This viewpoint is consistent with the core ideas of cognitive linguistics, which highlight the way in which language is derived from embodied cognition and sensory experiences. The Vietnamese results also cast doubt on the idea that manner-salient and path-salient languages may be strictly divided into two categories, showing a complex interaction between manner and path encoding that captures the diversity and complexity of spatial thinking.

Path Motion in The Physical Environment

While we talk about path motion in the physical world, we're talking about the paths, directions, or trajectories that things or people take while changing locations. Language differences in how these motion patterns are stored and communicated can be used to understand how speakers perceive and communicate the spatial features of movement. Different kinds of paths, such as linear, circular, vertical, curved, and multidirectional paths, are represented in the Vietnamese language using a variety of linguistic features. These paths are defined by the form, direction, or geographical information they provide; they are frequently articulated using verbs, prepositions, or adverbs. Table 2 presents a summary of the five path types found in the Vietnamese language, together with the number of verbs that correspond to each path and their corresponding frequencies in the dataset.

Table 2. Paths of Motion in Vietnamese

Environments	Paths	Verbs	Quantity
Air	Linear path	<i>Tới</i> 'to come', <i>về</i> 'to return', <i>vào</i> 'to enter', <i>ra</i> 'to exist',	4
Land	Circular path	<i>Quanh</i> 'to go around'	1
Water	Vertical path	<i>Lên</i> 'to ascend', <i>xuống</i> 'to descend'	2
	Curvilinear path	<i>vòng</i> 'to rotate'	1
	Multidirectional path	<i>Tung tóe</i> 'to scatter' <i>phân tán</i> 'to disperse', <i>rãi rác</i> 'to spread out'	3
Total	05	11	

Linear- Path Motion

A trajectory or a trip that follows an uninterrupted, straight course is referred to as a linear path in Vietnamese. The land, the sea, and the air are the three environments in which this kind of journey is expressed. A linear path may be identified by its straight forward, predetermined itinerary and lack of any discernible deviations from the original path. It can be thought of as a straight line with minor curvature or as a segment of a line connecting two points.

Four verbs - *tới* (to arrive), *về* (to return), *vào* (to enter), and *ra* (to depart)—are used in Vietnamese to indicate linear paths. The two pairs of symmetric paths that these verbs belong to are *tới* and *về* and *vào* and *ra*. Consider the example below, which uses the verb *tới* to express the directionality of the bird's flight towards the tree.

(9) Chim bay **tới** cái cây.

The bird flew to the tree.

Another example is that the word *về* is also used in example (10) to denote the speaker's direct route back to their home.

(10) Tôi **về** nhà

I went home.

Vietnamese speakers are able to generate a complex tapestry of motion event descriptions with these verbs and their combinations with other motion verbs, demonstrating the language's attention to the fine subtleties of movement, which are illustrated in Figure 5 below.

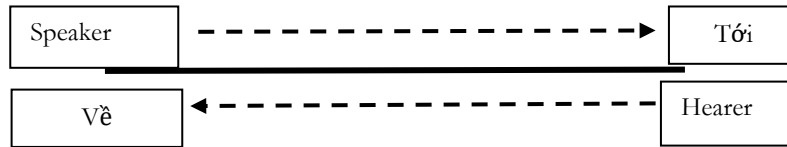


Figure 5: The Scheme of the paths tới and về

It is noteworthy that Vietnamese speakers, by confusing these verbs with an extensive vocabulary of manner-of-motion words, are able to correctly communicate the intricacies of movement. Vietnamese people have a strong sense of the natural environment, embodied experiences, and a perceptive understanding of motion, all of which are reflected in their language. Vietnamese expresses linear route motion in a way that highlights the intricate connection between language, cognition, and the physical environment. Furthermore, Vietnamese stands out among many other languages that rely more heavily on path-based motion expressions for language use, for its vast vocabulary and attention to even the tiniest aspects of style. This culturally-specific perspective is offered by the Vietnamese speakers' embodied experiences of physical exercise and their keen awareness of their natural surroundings. Vietnamese uses a wide range of linguistic strategies, including verbs, prepositions, and adverbial phrases, to effectively portray the dynamic intricacies of motion, illuminating the tight relationship between language, cognition, and the natural world. The study of Vietnamese linear path motion supports research on motion verbs in other languages. Manner-rich descriptions are more common in some language families, and Vietnamese data confirms this pattern. The theoretical framework of lexicalization patterns by Talmy offers insight into language organization and encoding.

Vietnamese lexicalization of linear route motion occurrences, according to the researcher, emphasizes the language's complex link with embodied cognition and cultural experiences. A keen awareness of the physical kinematics of movement is suggested by the large repertoire of manner verbs and the subtle differences between *tới* and *về*, as well as *vào* and *ra*. These are rooted in the speakers' acute observation of the natural world and their lived experiences of navigating physical environments. This viewpoint is consistent with cognitive linguistics' core theories, which emphasize how language is embodied and rooted in sensory experiences. The Vietnamese findings, the researcher further argues, contradict the idea that manner-salient and path-salient languages may be clearly separated from one another. Instead, Vietnamese exhibits a complex interaction between method and path encoding, which reflects the multidimensional and complex nature of spatial cognition. The language uses a variety of techniques to communicate path information in addition to its large vocabulary for expressing ways, as will be covered in later areas of the study.

Curvilinear- Path Motion

A range of linguistic components that convey the idea of travel along a curved or non-linear trajectory are used to communicate the concept of curvilinear route motion in Vietnamese. The use of descriptive verbs or adjectives that imply a curved trajectory, like the path *vòng*, is one efficient way to depict a curvilinear path in Vietnamese. When used as a verb, this path includes the two basic semantic elements of motion and path. On the other hand, when *vòng* is used as an adverb, it usually means moving around or surrounding something, suggesting a curving route. Its usage is frequently observed in conjunction with various motion verbs, and these interactions can be categorized into two distinct types within the three environments of air, water, and land.

Table 3. Curvilinear paths

Aerial environment		Aquatic environment		Territorial environment	
Bay Lượn Trôi	vòng	Bơi Lướt Chảy Trôi	vòng	Bò Trườn Nhảy Đi bộ Chạy Đi bộ Chạy bộ Đi xe đạp Đi ô tô	vòng

It can be seen that *vòng* is directly combined with motion verbs in the first category, which captures the path's curving or circular geometry. For example, while speaking of an aerial setting, one might say *chim bay vòng quanh cây*, which means (the bird flies around the tree). The word *vòng* modifies *bay* (fly) to indicate the fly's circular course. Comparably, *cá bơi*

vòng quanh bể (the fish swims around the pond) and *bò vòng quanh cây* (to crawl around the tree) may be expressed in aquatic and terrestrial environments, respectively. In order to portray the concept of a curving road, the second kind uses the adverbial word *vòng quanh* (around), which is frequently coupled with motion verbs. For instance, *bò vòng quanh cây* (to crawl around the tree), *chim bay vòng quanh cây* (the bird soars around the tree), or *cá bơi vòng quanh bể* (the fish swims around the pond) can all be spoken. The motion verb in this instance is modified by the adverbial phrase *vòng quanh*, which expressly indicates the motion event's curved or circular course.

Based on the gathered data, a curving path may be represented in Vietnamese by a single word: *vòng*, which means (to go around). This verb can be used to express both motion and path semantics at the same time because it can serve as both a motion verb and an adverbial modifier. For example, in the sentence *chim bay vòng quanh cây* (the bird flies around the tree), the verb *vòng* denotes the bird's curved, circular trajectory as it moves through the air. When referring to the curvilinear course in the air, sea, and land, Vietnamese speakers use a similar word. *Vòng*, a verb or an adverbial phrase, is the identical linguistic element used in all three situations to represent the concept of a curved or circular trajectory of motion. The relevance of this idea in the Vietnamese language's portrayal of motion occurrences is shown by the pattern's ubiquity in a variety of physical situations.

Despite the lack of a dedicated vocabulary item, the manner in which curving routes are described in Vietnamese is a testament to both the speakers' thorough awareness of the natural world and the language's extensive linguistic resources. Vietnamese demonstrates the close relationship between language, cognition, and physiological experience by effectively conveying the complicated notion of movement along curved trajectories with a variety of verbs, prepositions, and adverbial phrases. Vietnamese distinguishes itself from many other languages that could rely more heavily on linear or directional path descriptions with its emphasis on motion expression, highlighting the language's subtle and culturally-specific viewpoint on spatial thinking. The study of Vietnamese curvilinear route motion supports typological findings in motion verbs. Manner-rich descriptions are more common in some language families, and Vietnamese demonstrates a distinct blend of methods, indicating sensitivity to spatial cognition despite not following verb-framed or satellite-framed typology.

The researcher believes that the way curvilinear route motion events are lexicalized in Vietnamese draws attention to the complex interaction that exists between the language and embodied cognition as well as cultural experiences. The wide range of manner verbs and the fine differences between various kinds of curving routes point to a sophisticated understanding of the kinematics of movement. These traits stem from the speakers' keen observations of the natural world and their own encounters with interacting with physical settings. This point of view is consistent with the fundamental ideas of cognitive linguistics, which highlight the way in which language is derived from sensory experiences and embodied cognition. Furthermore, the Vietnamese findings show a subtle relationship between manner and path encoding that represents the complex and varied components of spatial cognition, challenging the idea that manner-salient and path-salient languages can be rigorously dichotomized.

Vertical Path Motion

The idea of vertical path motion is linguistically articulated in Vietnamese by means of directional verbs and adverbial phrases that indicate movement either upward or downhill. The sense of motion occurring in a vertical or vertically oriented manner is conveyed by these language features. The two main verbs in Vietnamese that are used to depict vertical routes are *lên* (to climb) and *xuống* (to fall). When describing vertical upward motion, the verb *lên* is used, whereas the verb *xuống* is used to express downhill motion. To describe vertical movement more precisely, these verbs might be paired with other motion verbs. Examples of such combinations include *bay lên* (to fly up), *nhảy xuống* (to jump down), and *nhô lên* (to rise up). Moreover, prepositions or directional words like *lên* (up) and *xuống* (down) can also be used in conjunction with nouns or phrases to expressly denote vertical pathways, such as in *lên cầu thang* (up the stairs) or *xuống hầm* (down to the basement).

The two primary verbs, *lên* and *xuống*, are used to express vertical motion across the three physical environments of air, water, and land in Vietnamese. These verbs can be paired with a range of manner motion verbs to provide complex descriptions of upward and downward movement, allowing Vietnamese speakers to convey the intricate dynamics of vertical motion in a nuanced and detailed manner. For example, in an aerial context, one could say:

(11) Chim đang **bay lên** cao trên bầu trời.

The bird is flying up high in the sky.

In an aquatic environment, the sentence could be:

(12) Người lặn đang **ngoi lên** từ dưới đáy hồ.

The diver is rising up from the bottom of the lake.

And in a terrestrial context, the following statement could be made:

(13) Cậu bé đang **nhảy xuống** từ trên tảng đá.

The boy is jumping down from the rock.

These examples show how verbs like *bay* (to fly), *ngoi* (to rise up), and *nhảy* (to jump) are coupled with the verbs *lên* and *xuống* to describe vertical motion in various physical situations. Whereas many other languages may depend more heavily on linear or directed path descriptions, the Vietnamese approach to vertical path motion reveals the language's sophisticated sensitivity to the nuances of spatial cognition and embodied experience. Vietnamese speakers exhibit a great degree of attention to detail in their portrayal of motion because of the intimate connection between language, cognition, and physical experience as well as their keen observation and interpretation of the physical world. Typological insights on motion verbs are supported by the study of Vietnamese vertical route motion. Although Vietnamese does not fully follow Talmy's theory of lexicalization patterns, it does show sensitivity to spatial conceptualization, which is consistent with research conducted by Slobin and Nunez.

From the researcher's perspective, the way that vertical path motion events are lexicalized in Vietnamese draws attention to how closely the language is related to both cultural experiences and embodied cognition. Sentences like *lên* and *xuống*, which express upward and downhill movement, indicate a deep understanding of the kinematics of vertical motion. The deep awareness of the natural world and firsthand experience with physical situations are the sources of this linguistic proficiency among Vietnamese speakers. This viewpoint is in line with the fundamental ideas of cognitive linguistics, which place an emphasis on language's embodied character and connection to sensory experiences. Additionally, the researcher contends that the Vietnamese data calls into question the strict distinction between manner- and path-salient languages. Instead, Vietnamese exhibits a dynamic interaction between style and route encoding, reflecting the complex and diverse nature of spatial cognition. The study of vertical path motion shows that, in addition to its rich vocabulary for conveying methods, the language utilizes a range of strategies to relay path information.

Circular Path Motion

Circular path motion is the term used to describe motion along a revolving or circular route in language. Vietnamese conveys this idea in a number of ways that evoke rotation or a circle of movement. Descriptive verbs like *xoay* (to spin) and *quay* (to move about) suggest the semantic sense of circular or revolving motion. Moreover, these verbs can be combined with adverbs such as *quanh* (around) or *vòng* (circle) to create idioms that denote circular pathways, such as *xoay vòng* (to spin in a circle) or *quay quanh* (to walk about in a circle). These linguistic devices are effectively used to convey the concept of motion along a revolving or circular route, which is summarize in Table 4.

Table 4. Circular paths

Aerial environment		Aquatic environment		Terrestrial environment	
Bay	quanh	Bơi	quanh	Bò	quanh
Lượn		Lướt		Nhảy	
Trôi		Chảy		Đi bộ	
	Trôi	Chạy			
		Đi bộ			
		Chạy bộ			
		Đi xe đạp			
		Đi ô tô			

From the data analysis, it was found that there is only really one main verb in Vietnamese, *vòng* (to move about), which may be used to express a circle. This verb can be used as an adverbial modifier as well as a motion verb, expressing route semantics in addition to motion semantics. Take into consideration the following example, where the word *vòng* indicates the bird's curved, circular flight path in the air:

(14) Chim bay **vòng quanh** cây

The bird flies around the tree.

Vietnamese uses the same technique to represent circular route motion in the three different physical situations (land, sea, and air). *Quanh* is the same language element used in all three settings to represent the idea of a curved or round trajectory of motion, either as an adverbial phrase or as a verb. This pattern's pervasiveness in a variety of physical contexts emphasizes how crucial it is to how motion occurrences are represented in Vietnamese. This linguistic pattern is widely used in many different physical circumstances, which highlights the language's adaptability and the speakers' astute awareness of their environment.

Essentially, circular path motion is reflected by Vietnamese speakers in a way that highlights the language's abundant linguistic resources as well as its speakers' keen environmental awareness. Vietnamese is able to express the complicated idea of travel along curved trajectories using a mix of verbs, prepositions, and adverbial phrases, even though the language does not have a specific lexical item for circular pathways. Vietnamese emphasizes a complex and culturally-specific viewpoint on spatial conceptualization through its motion representation, which sets it apart from many other languages that could depend more heavily on linear or directional path descriptions. The Vietnamese study of circular route motion confirms typological results in the motion verb literature. Though Vietnamese does not fit neatly into Talmy's typology of verb-framed or satellite-framed languages, it does show a spatial conceptualization sensitivity that is in line with the findings of scholars such as Slobin and Nunez. The Vietnamese data show a unique combination of tactics, suggesting a dynamic interplay between manner and path encoding that captures the variety and intricacy of spatial cognition.

The researcher's argument about Vietnamese's lexicalization of circular route motion occurrences, emphasizes the language's complex link with embodied cognition and cultural experiences. The wide variety of way verbs and the subtle differences between different kinds of circular routes indicate a deep comprehension of movement kinematics. These characteristics result from the speakers' real-life experiences traversing physical places and their acute perception of the natural world. This viewpoint is consistent with the fundamental ideas of cognitive linguistics, which highlight the relationship between language and embodied cognition as well as sensory experiences. Further, the Vietnamese findings show a complex interaction between manner and path encoding that reflects the complex structure of spatial cognition, challenging the idea that manner-salient and path-salient languages may be rigidly divided.

Multidirectional Path Motion

Movement that takes place along numerous trajectories or in different directions is referred to as multidirectional path motion in Vietnamese. Instead of showing a single, straight line, it represents the idea of something or someone moving along several routes or trajectories. This kind of motion depicts a trajectory that is more complex and dynamic and is not limited to a single axis or dimension. Movement over multidirectional paths can take place in combinations of these trajectories as well as in horizontal, vertical, or diagonal orientations. Vietnamese multidirectional pathways are characterized linguistically by the use of descriptive verbs, adverbial phrases, or combinations of these that suggest dispersion, scattering, or divergence in the direction of travel.

Three primary verbs—*tung tóe* (to scatter), *phân tán* (to disperse), and *rãi rác* (to spread out)—are identified in the dataset as being used to indicate multidirectional pathways in Vietnamese. Think about the following instances:

(15) Hạt giống bị gió **tung tóe** khắp vùng.

The seeds were scattered by the wind across the region.

In this sentence, the verb *tung tóe* conveys the notion of the seeds being dispersed in various directions by the force of the wind, rather than following a single trajectory.

(16) Đám người **phân tán** sau khi biểu tình kết thúc.

The crowd dispersed after the protest ended.

Here, the verb *phân tán* depicts the crowd moving in multiple directions and along different paths as they depart from the protest site.

(17) Những đám mây đen **rải rác** trên bầu trời.

The dark clouds were spread out across the sky.

In this example, the verb *rải rác* suggests that the clouds were scattered or distributed in various areas of the sky, rather than concentrated in a single location.

Although multidirectional route motion is applicable to terrestrial, aquatic, and airspace contexts, the precise terminology used will vary depending on the situation and the entities involved. In airborne environments, multidirectional routes are frequently linked to the dispersal of light-weight particles or items, like seeds or clouds. Multidirectional routes can be used to describe the spreading or diffusion of liquids or other substances in water in aquatic situations. Multidirectional routes on land can show how people, animals, or things travel in several directions, when a crowd disperses or goods are disseminated. Whatever the context, the idea of multidirectional routes emphasizes how well Vietnamese conveys the complex and dynamic quality of motion, demonstrating the speakers' acute awareness of their surroundings.

The examination of Vietnamese multidirectional route motion is consistent with important typological findings in the literature on motion verbs. Certain language groups have a higher prevalence of manner-rich descriptions, which prominently reflect the method of motion; Vietnamese evidence supports this tendency. Vietnamese demonstrates a unique combination of methods for storing motion events, demonstrating a sensitivity to spatial conceptualization, through the use of a wide variety of language devices, including descriptive verbs, adverbial phrases, and their combinations.

From the researcher's perspective, the way multidirectional path motion events are lexicalized in Vietnamese highlights the language's intricate relationship with embodied cognition and cultural experiences. The speakers' keen observation of the natural world and their ability to convey complex and dynamic motion events with precision are reflected in their aptitude for capturing the nuances of multidirectional routes. This viewpoint is consistent with the core tenets of cognitive linguistics, which emphasize the embodied nature of language and its roots in sensory experiences. Furthermore, the Vietnamese data challenges the notion of a strict dichotomy between manner-salient and path-salient languages, exhibiting a nuanced interplay between manner and path encoding that reflects the multidimensional and complex aspects of spatial cognition.

CONCLUSION

This study looked at how motion events in the Vietnamese language are lexicalized using pathways and manners. The results show that Vietnamese has a complex system of motion verbs that form precise and comprehensive descriptions of motion in physical contexts when combined with manners and pathways. There are considerable differences between Vietnamese motion verbs in terms of their courses and ways. Together with manner adverbs, they can be used to explain the motion's pace, mode, and gesture. To further describe the course, trajectory, or direction of the event, they can also be used with path adverbs. Because of this combination, users may communicate activities clearly and in depth within their physical surroundings, giving the Vietnamese language greater versatility.

But keep in mind that this study was limited to Vietnamese, so extrapolating these conclusions to other languages would present some difficulties. More investigation and in-depth study will be needed to examine how different languages lexicalize motion occurrences in real-world settings. Furthermore, because textual data analysis was the study's primary method, it might not have adequately captured the subtleties of how motion expressions are employed in naturalistic speech or other situations.

In order to facilitate cross-linguistic comparisons and provide insights into the general and language-specific trends in the lexicalization of motion events, future studies might broaden the scope of the analysis to include a wider range of languages. A more thorough knowledge of the use of motion expressions in realistic contexts may also be possible

through the integration of spoken data and observational techniques. The cognitive and perceptual foundations of this language domain may also be clarified by looking into the acquisition and developmental paths of motion expressions.

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