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Fictive Motion in Modern Persian Within the Framework of Cognitive Semantics

MASHA NIKABADI
Department of English, Isfahan (Khorasgan) Branch,
Islamic Azad University, Isfahan, Iran

AHMADREZA LOTFI
Department of English, Isfahan (Khorasgan) Branch,
Islamic Azad University, Isfahan, Iran
ahmad.reza.lotfi@khuisf.ac.ir

BAHRAM HADIAN
Department of English, Isfahan (Khorasgan) Branch,
Islamic Azad University, Isfahan, Iran

ABSTRACT

This paper tries to implement Talmy's (2000) model of fictive motion in the Persian language to investigate incipiently to what extent this model of fictive motion events is applicable in the Persian language and secondarily to inspect the semantic constituents of fictive motion sentences. Therefore, a preference task entailing sixteen extracted sentences from Talmy's (2000) classifications of fictive motion was developed to scrutinise Persian speakers' intuitions in evaluating fictive motion. These sentences were translated into Persian, and a similar sentence was also reproduced for every translated sentence, as well as nine pairs of filler sentences, to analyse the cognitive quality of fictive motion events perceived by the Persian speakers. One hundred and five Persian students participated in a two-stage task based on a convenience sampling procedure. The results reported that 86.9% of participants marked motion sentences. Since prepositional phrases were singled out, with an average of 56, as the motion constituents, it leads to the conclusion that Paths are the most frequent semantic elements in the Persian language.

Keywords: Fictive motion; Fictive motion categories; Motion; Paths; Persian language; Prepositional phrase

INTRODUCTION

As a central domain of human experience, motion is one of the key cognitive structures which is closely entwined with perceptual mechanisms. It is a multifaceted topic in speakers' daily experiences, and people normally know what the motion is when someone or something moves, and they even know how to linguistically transfer such experiences (Filipović & Ibarretxe-Antuñano, 2015). Moreover, motion events' popularity in cognitive linguistics across different languages has had important research repercussions in the Iranian context. Therefore, the concept of fictive motion events is described in this paper to highlight its importance in human languages. However, many argue that the concept of motion is treated fairly similarly in various languages across the world (e.g. Landau & Jackendoff, 1993; Miller & Johnson-Laird, 1976). From this standpoint, languages are likely to decipher the relational location and trajectory of movement with a restricted set of resources.

Generally, motion is defined as a change or displacement of an object's position over time. In math and physics, however, different descriptions in terms of change, displacement, and distance are considered for motion (Tyson et al., 2000). It should be borne in mind that if an object

does not change relative to its surroundings, it is believed to be motionless and stationary. It is evident that absolute motion cannot be estimated mathematically because there is no absolute motion, and everything is in motion in the universe (Tyson et al., 2000).

Clearly, figure, ground, path and manner are four semantic elements of motion events. The figure is the object that moves or presents in a stationary location, the ground is the object in respect to which the figure moves, the path refers to the translational motion, and manner refers to the actual movement which is implied by the verb (Slobin, 1996; Talmy, 1985).

Owing to the significant work of Leonard Talmy, motion has been recently known as a well-examined domain in linguistic typology and semantics (Bergmann & Matlock, 2015).
As a gateway to a vast and varied world of linguistic research, central ideas such as motion events have provided the concerned scholars with a unique area of research through which they have come up with a wide range of related theories in an attempt to clarify various issues of interest including theories related to motion events.

THE PHILOSOPHY OF FICTIVE MOTION

In current years, the notion of fictive motion events has received much attention in both psycholinguistics and cognitive linguistics. Obviously, all languages refer to motionless circumstances systematically using constructions primarily used for conveying the meaning of motion events – a phenomenon technically labelled as constructional fictive motion (Talmy, 2000).

Moreover, experiencing a sense of motion for fictive motion forms is quite common among language speakers. What is hypothesised as the moving entity in an experience of motion greatly differs from one individual to another. Even in the same motion event, the sense of motion could be conceptualised differently by different speakers in different languages (Talmy, 2000). Such differential conceptions of motion can be related to the unique ways whereby listeners conceive the entity and direction of the fictive motion events based on their own imaginations.

Matlock (2004) examined the relationship between thought and language utilising motion events. For this purpose, she applied four experiments to find out how *individuals* tried to understand fictive motion events. The results revealed that mental simulation was indispensable to fictive motion processing and visualisation. She also observed that the linguistic behaviour underlying fictive motion constructions was motivated by simulated motion and scanning.

English and Spanish languages are often used as common languages in motion analysis due to the similarities and differences between satellite and verb-framed languages. The path or trajectory of a motion event is expressed in English as the core element of motion, while Spanish usually shows the path in the main verb, relegating the expression of manner to adjuncts. Férez (2008) argues that motion verb roots might alter sentence information independent from path and manner variables; however, this fact is generally overlooked in the majority of the studies related to motion events.

In a different study, Takemoto (2010), comparing French and German languages, investigated the possibility of subjectification of fictive motion expressions. He found certain differences in the use and basic manner-of-motion verb events. He pointed out that the use of German unmarked intransitive motion verbs through subjectification had a higher frequency compared to French. In addition, she reported that the unmarked transitive motion verbs represented fictive emanation in French.

Stosic et al. (2015), in an experiment, compared French, Italian, German and Serbian languages in terms of fictive motion events. It was found that the frequency of fictive motion expressions occurring in these languages was significantly different in that some types had a lower frequency compared with others.

Finally, in 2020, Deng and Zhu, focusing on the processing of fictive motion and literal motion during natural language conception, utilised electroencephalographic aroused response potentials. The findings demonstrated that the processing of fictive motion events requires increased cognitive effort compared with literal motion conditions.

The popularity of motion events and their behaviour across different languages has had important research repercussions in the Iranian context. Experts in linguistics and cognitive linguistics have tried to fathom the characteristics of the structures enacting motion in the Persian language.

Sha'bani (2008) used pairs of sentences that were semantically similar but fictively dissimilar to examine the festivity of motion sentences. In fact, twenty-five sentence pairs were used as the testing corpus to identify and decode fictiveness. The results of the study revealed a differentiation between the conceptualisation of fictive motion sentences and that of non-fictive motion sentences. Moreover, he drew a conclusion that the depiction of fictive motion sentences takes longer for the participants in relation to the non-fictive motion sentences.

Babai (2011) examined the change of state and motion in Persian fictive motion events. She found out that Persian was one of the languages in which speakers tend to use compound verbs rather than simple verbs to encode motion events. The results revealed that the Persian language utilises both head-framed and non-head-framed constructions to encode path-in-motion events. Concordantly, Mesgarkhoei (2012) found out that there were fourteen paths for fictive motion verbs in the Persian language. Using a corpus of 148 motion verbs from the "Soxan" dictionary, she reached the conclusion that the path components are more frequently used by Persian speakers compared with the others.

In 2014, Afrashi and Rahmani, focusing on the nature of fictive motion and coextension paths, highlighted the importance of metaphoric and fictive motion distinctions in the Persian language. They found that Persian speakers were reluctant to produce fictive motion expressions in the spoken mode. Comparing Persian with English and Japanese, they also concluded that English speakers tend to use motion events more than Persian and Japanese speakers, respectively.

In 2017, Akhavan, Nozari and Göksun were the first researchers to examine motion events conceptualisation in speech and gestures in Persian language. The findings revealed that fictive motion events in Persian language have their own idiosyncratic features. They concluded that Farsi speakers used both path and manner constituents with identical frequency in their speech regardless of any particular gestures.

In a more recent study, Rezaee and Dianatie (2017) examined the differences between metaphors and fictive motion events, and they discovered certain features and limitations. By analysing 98 sentences containing fictive motion events in Persian, they found out that there is no limitation on tense and mood in Persian regarding fictive motion events. It was also found out that Persians had the potential to admix various fictive motion events in different directions and paths. Notably, the results also indicated that metaphoric motion and fictive motion differ from each other in two main ways. First, metaphoric motion sentences could represent conceptual metaphors. Second, every metaphoric motion sentence reflected only one of the representations of a conceptual metaphor.

Akhlaghi et al. (2018) evaluating and comparing narratives in two groups of children and adults based on Talmy's theoretical framework and using Pear story film, a six-minute film that was produced to test the distinction of a simple story from language to language, found out that there was a meaningful difference in using self-contained motion verbs such as *shiver, tremble, spin and twirl* used by male and female native speakers. However, with the application of verbs like *walk* and *run*, there was no meaningful difference. Finally, they concluded that cognitive processes underlying motion verbs were the same for both groups and were completed before the age of nine.

By comparing the motion verbs in both Persian and English languages, Eslamipour and Sharefzade (2019) provided a hierarchical diagram embracing different categories of the typology concerning motion events: Manner > Specified Path > Unspecified Path > Figure > Ground in Persian language versus Specified Path > Manner / Figure in English. They concluded that unlike English, the Persian language tends to be more satellite-framed.

In another study, Imani and Motavallian Naeini (2020) investigated the combination of two paths, up and down, with the motion verbs go and come, to draw an analogy between the semantic frames of the former verbs in Persian and English. To that effect, 120 sentences containing the aforementioned path verbs were drawn from the major Corpus of Bijankhan. Through the FrameNet database, they juxtaposed the semantic frames of the verbs with those of their English peers. Finally, they concluded that FrameNet offers a different frame for those Persian path verbs and their English equivalents. Moreover, they addressed the metaphorical relationships of these verbs with other semantic frames. They also concluded the basic necessity of linguistic distinctions for the further function of FrameNet in the description of other languages.

In general, fictive motion has become the focus of attention in both psycholinguistics and cognitive linguistics. Axiomatically, the scholars who have worked on fictive motion events and categories in Persian have provided an atomistic account of how fictive motion events, categories, and corresponding issues work in the Persian language. Hence, the primary significance of the present study is to investigate the semantic/conceptual constituents of motion events based on the typology offered by Talmy. In other words, the principal goal of this study is to authenticate the nature of fictive motion events perceived and interpreted by the Persian speakers. As such, it seeks to reveal how motion events are lexicalised and coded in the Persian language. Therefore, the findings in this study may contribute to ongoing research in the domains of semantics, linguistic typology, language universals, cognitive linguistics, and other related disciplines. In fact, they may have important implications for disciplinary and/or interdisciplinary majors such as translation, teaching English as a second language, and cognitive studies.

Not surprisingly, several Iranian linguists have been working on fictive motion events; however, they have failed to address the full range of categories and dimensions defined by Talmy (2000). In the Iranian context, many scholars have overlooked Talmy's classifications of fictive motion, centring their research solely on descriptive analyses. Although descriptive-based methodologies are truly common in linguistics and cognitive studies, the present study is focused on both descriptive and empirical methods of investigation. Thus, the goal here is to focus on different facets of fictive motion in the Persian language using a mixed-method research design.

FICTIVE MOTION TRANSLATION

Translating expressions containing fictive motion events has recently become a problem (Langacker, 1986, 2005; Talmy, 1996, 2000). The main reason is that in expressions containing fictive motion events, very often, a full-scale one-to-one correspondence is not possible in interlanguage translations, and this may create a serious problem for translators (Duff, 1981; Newmark, 2003). The bulk of research on fictive motion translation across languages has revealed that the rendering of factive motion events is less complex than those of fictive motion expressions (Rojo & Valenzuela, 2003; Stosic & Sarda, 2009). On the other hand, translators do not follow the same strategies when translating both factive and fictive motions. Different writers have proposed different reasons for such variations. Waliński (2015) has offered the notion of cognitive constraints applicability.

It should be noted that translation studies may offer insightful ideas about fictive motion events in various languages (Rojo & Valenzuela, 2003). More specifically, these writers admit that fictive motion translations often involve problems such as missing information on the manner of motion, omitting the path, and preferring source language motion verbs to the target language counterparts.

Slobin (1996) points to the reduction of nearly 24% of the path information and 49% of the manner information in the translations of actual motion expressions from English to Spanish. In addition, the results reported by Rojo and Valenzuela (2003) show that the omission of path information is approximately about 6.11%), while the omission of manner is around 10.5% of the cases under scrutiny. They also argue that the conceptual conditions may be of great help to translators in the translation of fictive motion expressions, specifically those providing details on the translation of manner and path.

In addition to the importance of translation studies in fictive motion events, the relationship between native speakers' personality traits and speaking is not explicit yet. As stated in Aljuaid (2022), it was believed that personality traits such as introversion/extroversion do not play a crucial role in the learners' speaking performance. He also suggested further research to find more links between these two.

Therefore, translation of fictive motion expressions largely depends on the language translators' intellectual capacity and expertise, the constraints of the context and discourse, and the cognitive principles. Moreover, knowing about the semantic conditions, the cause of structuring fictive motion can help translators to find the most appropriate equivalents for fictive motion expressions across languages (Waliński, 2015).

FICTIVE MOTION CATEGORIES

Fictive motion events in English are classified into six distinct categories (Talmy, 2000). They include emanation, pattern paths, frame-relative motion, advent paths, access paths, and coextension paths. Emanation refers to fictive motion emerging from an unidentified object among the classifications of fictive motion. Orientation paths, the first form of emanation, are further divided into five groups. The other forms of emanations are radiation, shadow, and sensory paths. For further clarification, examples of these categories were extracted randomly from Talmy's fictive motion categories (2000) and then translated into the Persian language. A similar sentence was also reproduced for every translated sentence to analyse the cognitive quality of fictive motion

events perceived by the Persian speakers. These sentence test prompts were semantically almost close but fictively different and provided an admixture of motion and motionless events, respectively.

ORIENTATION PATHS

The orientation path is the emergence of a linear entity from the object's front. It is conceptualised or perceived as an entity's lateral motion (Talmy, 2000), which includes prospect paths, alignment paths, demonstrated paths, targeting paths, and line of sight.

PROSPECT PATHS

Prospect path is the fictive motion of a face-type front object about its surroundings.

(a) The cliff wall faces toward the valley (Talmy, 2000).
(b) Saxre pišʔâmadegi dârad 3rdPRS be samte/ru be PP darre (literal translation).
(c) Saxre ru be darre pišʔâmadegi dârad (motion translation).
(d) Saxre ru be darre ʔast (motionless translation).

ALIGNMENT PATHS

The alignment paths relate to a non-motion straight linear object with a point-type front as a type of orientation path.

(a) The snake is lying toward the light (Talmy, 2000).
(b) Mâr derâz kešide ʔast PRS PRF ru be nur (literal translation).
(c) Mâr ru be nur derâz kešide ʔast (motion translation).
(d) Mâr dar nur derâz kešide ʔast (motionless translation).

DEMONSTRATE PATHS

This path involves a linear object with a point-type front in which a fictive line emerges to direct someone's attention along the path.

(a) The arrow on the signpost pointed toward the town (Talmy, 2000).
(b) Feleše ruye tâblo ʔešâre mikonad PRS 3rd be šahr (literal translation).
(c) Feleše ruye tâblo be samte šahr ʔešâre mikonad (motion translation).
(d) Feleše ruye tâblo be samte šahr ʔast (motionless translation).

TARGETING PATHS

An agent intentionally sets the alignment of an object. Thus, the hypothetical line of preceding objects follows a path that depends on the object's environment. This subsequent motion is both real (due to the agent's intentional motion) and fictive.

(a) I pointed (my finger/my camera) into the living room (Talmy, 2000).
(b) Man ʔešâre kardam PST 1st rube ʔotâq (literal translation).
(c) Man (bâ ʔangoštam/durbinam) be ʔotâqʔešâre kardam (motion translation).
(d) ʔangoštam/durbinam rube ʔotâq ʔast (motionless translation).

LINE OF SIGHT

It is a hypothetical line appearing from the front of the visual implement.

(a) I slowly looked toward the door (Talmy, 2000).
(b) Man be ʔârâmi negâh kardam PST 1st be/samte dar (literal translation).
(c) be ʔârâmi be samte dar negâh kardam. (motion translation).
(d) be ʔârâmi dar râ negâh kardam (motionless translation).

RADIATION PATHS

As the second emanation type, the radiation path is the emergence of continuous radiation from an energy source.

(a) The sun is shining into the cave (Talmy, 2000).
(b) Xoršid mitâbad PRS 3rd be darune qâr (literal translation).
(c) Xoršid be darune qâr mitâbad (motion translation).
(d) Xoršid nazdike qâr mitâbad (motionless translation).

SHADOW PATHS

If some object's visible shadow stimulates a fictive motion on some surface, it is called a shadow path.

(a) The pillar's shadow fell onto the wall (Talmy, 2000).
(b) Sotun ye sâye ʔoftâd PST 3rd ruye divâr(literal translation).
(c) sâye ye sotun ruye divâr ʔoftâd (motion translation).
(d) sâye ye sotun ruye divâr ʔast (motionless translation).

SENSORY PATHS

Two entities, experiencer and experienced, are involved in this fictive motion. In this path, the experiencer emits something intangible toward the experienced.

(a) I can see him all the way from where I am standing (Talmy, 2000).
(b) Man (mitavânam) bebinam PRS 1st ʔu râ ʔaz jâʔi ke man ʔistâdeʔam PRS PRF 1st (literal translation).
(c) ʔaz jâʔi ke ʔistâdeʔam ʔu râ mibinam(motion translation).
(d) ʔu râ mibinam(motionless translation).

PATTERN PATHS

It is the fictive perception of some configuration while moving through the space. It occurs when the physical entities show some form of motion factively. Pattern path type of fictive motion is comparable with emanation type due to the fictive movement of an entity through the space in these two categories.

(a) As I painted the ceiling, (a line of) paint spots slowly progressed across the door (Talmy, 2000)
(b) Vaqtike man rang kardam PST1st saqf, (xati ʔaz) rang qatarâte beʔârâmi kešide mišod PST3rd tâ dar (literal translation).
(c) vaqti ke saqf râ rang kardam xati ʔaz qatarâte rang beʔârâmi ruye zamin kešide šod(motion translation).
(d) vaqti ke saqf râ rang kardam xati ʔaz qatarâte rang beʔârâmi ruye zamin čekid (motionless translation).

FRAME-RELATIVE MOTION

This category of fictive motion is classified into two types: first, frame relative motion with a factively moving observer and second, frame relative motion with a factively stationary observer. The first type is divided into some subcategories like global frame, local frame, shift in mid-reference from global to local frame, and global-part local frame. The second type also embraces some subclasses, such as the global frame and the local frame.

1. (a) I was walking through the woods, and this branch sticking out hit me (Talmy, 2000).
(b) Man râh miraftam PST1st dar miâne jangal va ʔin šaxeʔye birun zade xord be man(literal translation).
(c) Dar jangal râh miraftam va šaxe deraxti ke birun zade bud dar češmam raft (motion translation).
(d) Dar jangal râh miraftam va šaxe deraxti be češmam ʔâsib zad (motionless translation).

2. (a) The stream flows past my house.
(b) Rudxâne migozarad PRS 3rd ʔaz xâneʔye man(literal translation).
(c) Rudxâne ʔaz kenâre xâneʔye mâ migozarad(motion translation).
(d) Rudxâne kenâre xâneʔye mâ ʔast(motionless translation).

ADVENT PATHS

The spread of a static object's location is observable in this type of fictive motion. While the depicted motion of the object is fictive, its stationary state is factive. Advent path consists of two key subtypes: site arrival, containing the object's fictive motion and site manifestation, which is a fictive change of the object on its location (Talmy, 2000).

1. (a) The beam leans/tilts away from the wall (Talmy, 2000).
(b) Parto e nur xam mišavad PRS third ʔaz ruye divâr (literal translation).
(c) Parto e nur ʔaz ruye divâr xam mišavad(motion translation).
(d) Parto e nur nazdike divâr xam mišavad (motionless translation).

2. (a) Termite mounds are scattered/strewn/spread/distributed all over the plain (Talmy, 2000).
(b) Moriʔyâne ha tape parâ kande šode budand PST PRF 3rd sartâsare dašt (literal translation).
(c) Tape moriʔyâne ha dar sartâsare dašt parâ kande šode budand (motion translation).
(d) Tape moriʔyâne ha dar dašt parâ kande šode budand (motionless translation).

3. (a)This rock formation occurs/recurs/appears/reappears/ shows up near volcanoes (Talmy, 2000).
   (b) ʔin sang tarkibe padidâr mišavad PRS 3rd dar nazdiki ʔâtašfešân (literal translation).
   (c) ʔin tarkibe sang dar nazdiki ʔâtašfešân padidâr mišavad (motion translation).
   (d) ʔin tarkibe sang dar nazdiki ʔâtašfešân ʔast (motionless translation).

ACCESS PATHS

Access paths contain a static object's location, represented factively, followed by some other entity (represented fictively).

(a) The cloud is 1000 feet up from the ground (Talmy, 2000).
(b) ʔabr hast 1000 metr bâlâ ʔaz sathe zamin (literal translation).
(c) ʔabr ha 1000 metr ʔaz sathe zamin bâlâ tar hastand (motion translation).
(d) ʔabr ha 1000 metr bâlâ tar hastand (motionless translation).

COEXTENSION PATHS

Coextension paths as the last category of fictive motion in Talmy (2000) is a depiction of the form, location and orientation of an object, extended spatially, over the object's extent. In addition, the motion of some entity along or over the form of the object is fictive.

(a) The fence descends from the plateau to the valley (Talmy, 2000).
(b) Narde sarâzir mišavad ʔaz dašt be darre(literal translation).
(c) Narde hâ ʔaz dašt be darre sarâzir mišavand (motion translation).
(d) Narde hâ kenâre dašt va darre budand(motionless translation).

METHODOLOGY

This study, involved a face-to-face stage followed by an online stage in which sixteen sentences were randomly drawn from the collection of thirty-six sentences representing the categories introduced in Talmy's model. Since, there are some examples for each main category, at least one example was chosen and then translated into Persian language. The other examples containing the same function were not rendered and they all were excluded.

It is interesting to note that, in the translation of fictive motion sentences from English into the Persian language, care was taken to find the most acceptable Persian equivalents for the English verbs and the prepositions in the test sentences. Subsequently, to analyse the cognitive quality of fictive motion events perceived by the Persian speakers, a similar sentence was also reproduced for every translated sentence. These sentence test prompts were semantically close but fictively different and provided an admixture of motion and motionless events, respectively.

Interestingly, care was also taken to make sure that inter-sentential differences existing among the pairs of sentences are not easily recognisable. Nine filler sentence pairs were also added to the sixteen sentence test prompts formulated before, which were sandwiched between the main sentence pairs comprising the preference task.

A word of caution is deemed necessary here. Prior to conducting a full-scale research project, a pilot study was carried out to pinpoint any possible flaws in the task as the measuring instrument, to examine the comprehensibility of the task, and to find out the existing

problems, if any. The pilot study was conducted with eight participants. The results provided useful feedback, which led to certain changes in the rewriting or replacement of several translated equivalents at this stage.

PARTICIPANTS

One hundred and five participants, both male and female, took part in the preference task. They were all undergraduate students studying different disciplines and academic levels at the Islamic Azad University Isfahan (Khorasgan) Branch, and they were selected using the convenience sampling method. Their average age ranged between 18 and 30. In addition, variables such as gender, language, culture, and background knowledge were also controlled to optimise the reliability of the data further.

INSTRUMENT

Three different but complementary instruments were used in the preference task for collecting the required data. This task contained twenty-nine pairs of sentences, extracted randomly from Talmy's collection of fictive motion events examples. Besides, nine pairs of factive motion sentences were randomly sandwiched between the prompts as fillers. Overall, the task included twenty-five pairs of fictive motion and motionless sentences to estimate the participants' intuition concerning motion and motionless events used in the targeted prompts.

Additionally, the type of questions provided in the preference task was free-answer questions where the participants were supposed to identify the sentences by underlining the parts representing the motion based on their perception.

Alternatively, to eliminate any possible ambiguity and to help the participants learn how they should tackle this task, the researcher also arranged for a debriefing session to provide the participants with an oral explanation about the nature of the task and the way they should perform it. This session took place before the Coronavirus pandemic.

The second stage of this study was launched during the Covid-19 pandemic. At this stage, social media were employed as a functionally useful tool for collecting the required data. As such, a recorded voice message was sent to 42 participants online via Telegram and WhatsApp. The message included the preference task in PDF format. Since it was not possible to hold a debriefing session, a recorded voice message in the form of instruction was used to inform the participants how to perform the task appropriately. The instruction provided the participants with both the order and the procedure of dealing with the PDF format of the preference task, eliminating any likelihood of misunderstanding or ambiguity.

DATA COLLECTION

Clearly, 63 Participants were tested in the classroom environment and 42 through social media. Those 63 participants were instructed to read each pair of sentences carefully and then choose the sentence indicating the motion event in each pair. They were further asked to underline the word revealing the motion. In regard to the online stage, a recorded voice message and a PDF format of the task were utilised. The candidates in this stage received a recorded voice explanation for doing the task. All in all, in both situations, the participants were provided with a stress-free environment with no time constraints in order to complete the task successfully.

Moreover, insightful information could be obtained from the students with the average age ranged between 10 and 14. Therefore, the participants would not be university students but a number of secondary school students.

DATA ANALYSIS

The data collected in face-to-face and online stages in this study was classified into different categories to cover all potential possibilities involving motion diagnosis and interpretation. The categories comprised sentences with motion events and sentences with motionless events. The main objective of the preference task was to examine participants' recognition of sentences with motion rather than motionless events by choosing the appropriate target event in each pair. To guarantee data authenticity, the answers provided by the participants by chance and those not answered at all were also considered in the data analysis. To analyse the data, SPSS statistical software was employed to estimate the frequency and the percentage values of the responses provided by the participants for each category.

The existing differences were further analysed by utilising Chi-square and one-way ANOVA statistical tests followed by a Post Hoc test named Games Howell. While the rationale behind using the Chi-square statistical technique was to measure if there was an equal probability of occurrence across all targeted categories, the application of ANOVA was another attempt to further attest to the significance of variations among various motion event categories. In the Chi-square analysis, it was expected that motion sentences would reflect the most probable category, and based on the mean and standard deviation values belonging to the three independent categories, the ANOVA test aimed to alternatively determine whether there was any statistical evidence showing that the targeted means are significantly different. Subsequently, the follow-up Post Hoc analysis method was implemented to compare and contrast the target categories in a two-by-two fashion in order to ascertain the extent to which the differences between target categories are statistically meaningful.

When participants were asked to underline a word that showed motion in each sentence, we identified the critical constituents of the sentence. This included simple verbs, compound verbs, nominal elements of compound verbs, prepositional phrases, and other elements (e.g., adverbs and adjectives). Figure 4.2 shows the number of participants who underlined each sentence component for each motion sentence. The mean value for each sentence component is also shown (Figure 3).

RESULTS

The present study provides a report of the analysis of the obtained data, which were analysed with regard to the research questions of the study: (1) Does Talmy's model of fictive motion appear in the Persian language as it appeared in English? (2) What are the recognised motion constituents in sentences by Persian speakers? A preference task was operationalised to elicit the required data from one hundred and five Persian speakers.

The participants' responses to the first question were divided into four categories: sentences with motion, without motion, sentences with both motion and motionless events. Table 1 shows the distribution by frequency and percentage. Here, 86.9% of participants chose motion sentences, 12.2% of them chose the motionless sentences, and 0.6% and 0.3% of them chose both motion and motionless sentences respectively.

TABLE 1. Fictive motion frequency in the Persian language

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	With motion	2646	86.9	86.9	86.9
	Without motion	373	12.2	12.2	99.1
	Both	18	.6	.6	99.7
	None	8	.3	.3	100.0
	Total	3045	100.0	100.0	

Input data are reported as observed columns in the Chi-squared output file. The software calculated the expected columns based on the assumption of equal probabilities. Therefore, the differences between the expected and observed columns appear as residual columns (Table 2).

TABLE 2. Expected and observed frequencies

	Observed N	Expected N	Residual
With motion	2646	761.3	1884.8
Without motion	373	761.3	-388.2
Both	18	761.3	-743.2
None	8	761.3	-753.2
Total	3045		

In the significance level, alpha is the probability that you will make the mistake of rejecting the null hypothesis when, in fact, it is true and ranges from 0 to 1. On the assumption of $\alpha = 0.05$ and DF =3, the Chi-square was 6335.405. Accordingly, Df was the number of categories minus one. The Chi-square significance was lower than 0.05, rejecting the null hypothesis due to the non-parametric test result (Table 3).

TABLE 3. Null hypothesis test summary

	Null Hypothesis	Test	Sig.	Decision
1	The categories of motion occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.

Table 3 presents a further finding regarding the non-parametric test, which rejects the null hypothesis in terms of frequency.

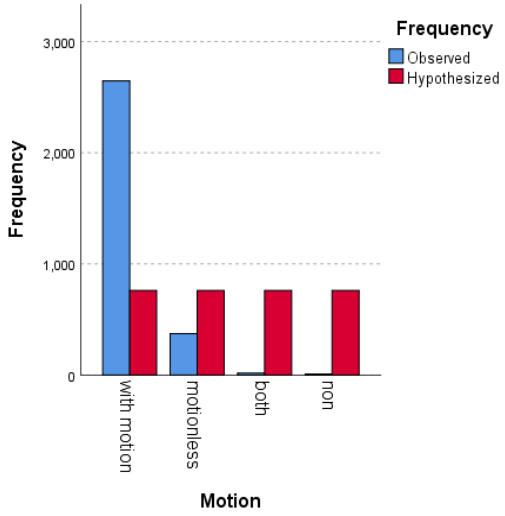

FIGURE 1. Observed and hypothesised frequency

In the following table, the values, such as the mean and variance of all categories derived from SPSS, were reported.

TABLE 4. Mean and variance magnitude frequency

Motion	Mean	N	Std. Deviation	Variance
With motion	92.1262	2646	8.41755	70.855
Without motion	19.0697	373	10.50655	110.388
Both	1.6667	18	.76696	.588
None	1.7500	8	1.03510	1.071
Total	82.4049	3045	26.54034	704.390

Table 5 shows that the Games-Howell non-equivalent method is the most suitable method for the post-hoc analysis. In addition, Table 5 reports the analysis of the results of the Games-Howell method.

TABLE 5. Outcome analysis of Games-Howell method dependent variable: frequency

Games-Howell						
(I) Motion	(J) Motion	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
With motion	without motion	73.05652*	.56809	.000	71.5915	74.5215
	both	90.45956*	.24384	.000	89.8139	91.1052
	none	90.37623*	.40088	.000	89.1515	91.6010
Without motion	with motion	-73.05652*	.56809	.000	-74.5215	-71.5915
	both	17.40304*	.57326	.000	15.9235	18.8826
	none	17.31971*	.65565	.000	15.5916	19.0478
Both	with motion	-90.45956*	.24384	.000	-91.1052	-89.8139
	without motion	-17.40304*	.57326	.000	-18.8826	-15.9235
	none	-.08333	.40818	.997	-1.3199	1.1532

Non	with motion	-90.37623*	.40088	.000	-91.6010	-89.1515
	without motion	-17.31971*	.65565	.000	-19.0478	-15.5916
	both	.08333	.40818	.997	-1.1532	1.3199

The second research question of the current study was intended to identify the essential constituents of fictive motion sentences. To this end, the participants were required to single out the sentence constituents (NCV, CV, SV, PP, Adj, and Adv), depicting the motion. Table 6 below provides the results as the number of selected constituents by the participants and motion constituents.

TABLE 6. Sentence constituents comparative table

Sentence no	Category	Number of selected elements by participants					Motion element
		NCV	CV	SV	PP	Adv/Adj	
1	Prospect paths	60	0	0	36	9	pišʔâmadegi(NCV) pišʔâmadegi dârad(CV) ru be darre(PP)
2	Alignment paths	15	42	0	48	0	derâz kešide ʔast(CV) ru be nur(PP)
3	Demonstrative paths	0	70	0	35	0	ʔešâre mikonad(CV) be samte šahr(PP)
4	Targeting paths	0	60	0	40	5	ʔešâre kardam (CV) ru be ʔotâq(PP)
5	Line of sight	0	23	0	67	5	negâh kardam(CV) be samte dar(PP)
6	Radiation paths	0	0	28	77	0	mitabad (SV) be darune qâr(PP)
7	Shadow paths	0	0	40	56	9	ʔoftâd(SV) ruye divâr(PP)
8	Sensory paths	0	0	10	95	0	mibinam(SV) ʔaz jâʔi(PP)
9	Pattern paths	0	40	0	55	10	kešide mišod(SV) ruye zamin (PP)
10	Frame relative motion with a factively moving observer	0	0	30	70	5	raft(SV) dar češmam (PP)
11	Frame relative with factively stationary observer	0	0	40	60	5	Migozarad(SV) ʔaz (kenâre) xâne(PP)
12	Advent paths site arrival With passive verb form	0	0	30	60	15	parâkande šode budand (CV) dar sartâsare (pp)
13	Advent paths site arrival with an active verb form	0	0	40	65	0	xam mišavad (SV) ʔaz ruye divâr(PP)
14	Advent paths Site manifestation	0	40	0	0	0	Padidâr mišavand(CV)
15	Access paths	0	0	0	65	40	ʔaz sathe zamin(PP) bâlâ tar(ADJ)
16	Coextension paths	0	35	0	70	0	sarâzir mišavand(CV) ʔaz dašt be darre(PP)

As it is shown, the Prospect Paths was the solitary category among others in which the nominal element of the compound verb was singled out 60 times, larger than the other constituents. Compound verbs depicted motion for the participants 42, 70, 60, 23, 40, 40, and 35 times, respectively, in certain categories, namely, Alignment Paths, Demonstrative Paths, Targeting Paths, Line of sight, Pattern Paths, Advent Paths, and Coextension Paths. Prepositional phrase, the most selected sentence constituent, ranged from 0 in the minimum to 95 in the maximum amount, pertaining to Advent Paths Site manifestation and Sensory Paths successively. Moreover, Adjectives and Adverbs were underlined as the motion constituent of the sentence in Advent paths site arrival with passive verb form and Access Paths greater than the other categories. The number of underlined constituents of the categories presented in Table 6 can be graphically shown in Figure 2.

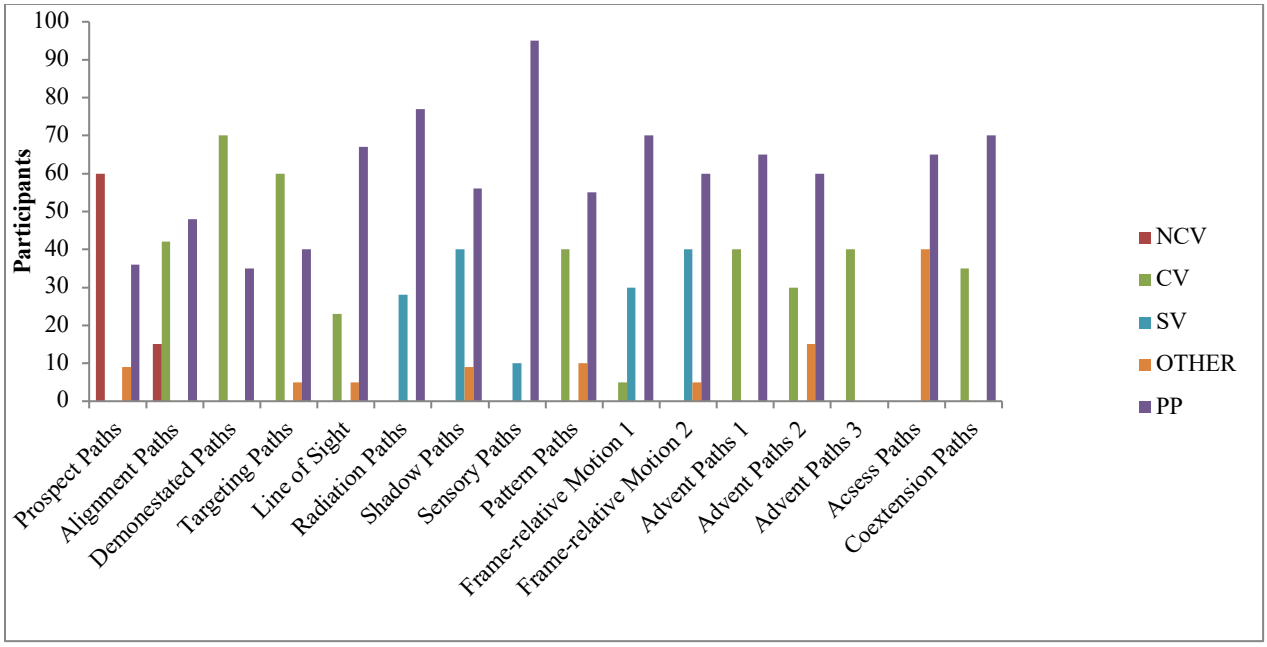

FIGURE 2. Sentence constituents comparative diagram

The bar graph in the Figure 2 shows that the prepositional phrase and compound verb in all categories were simulated motion considerably different from other constituents. The filler sentences were discarded from the toolbar diagram because they were not the study's interest.

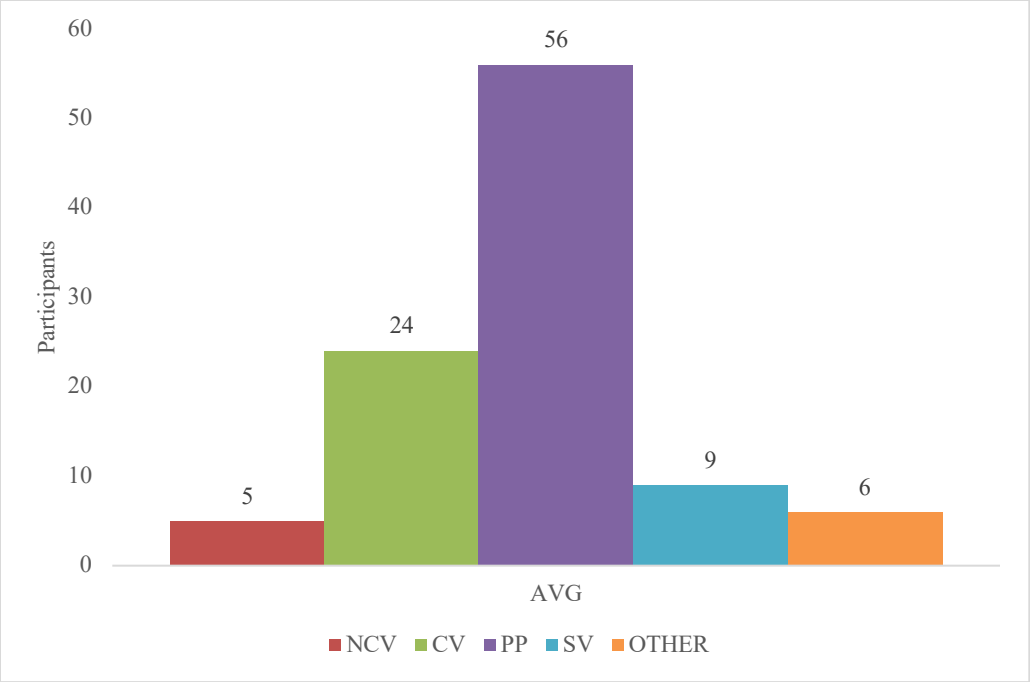

FIGURE 3. Sentence constituents average

Figure 3 illustrates the average of underlined sentence constituents in each bar graph. It can be vividly observed that the prepositional phrase average is considerably different from one another, giving rise to the conclusion that prepositional phrase is the merely constituent depicted motion for the participants more than the others.

DISCUSSION

In this paper, I have discussed the possibility of Talmy's model of fictive motion in Persian. Fictive motion, defined as the person's mental scanning of a motionless object, is pervasive in the language (Langacker, 2005). The results of this study have lent support to the claim of the first question about the existence of fictive motion events in the Persian language. As shown in the first stage of the experiment, almost 87% of the participants affirmed the fictivity of the sentences by marking the fictive motion sentence in each pair. One reason why nearly all the participants in the present study cognised the festivity of the sentences is in agreement with Sha'bani's study in 2008. He explored Persian speakers' intuition in the recognition of fictiveness. The results revealed a differentiation between the conceptualisation of fictive motion sentences and that of non-fictive motion sentences. Additionally, he claimed that the depiction of fictive motion sentences takes longer for the participants than the non-fictive motion sentences. The result of this stage is also in line with that of Stosic et al. (2015), in which French, Italian, German and Serbian languages were compared in terms of fictive motion events. It was found that the frequency of fictive motion expressions occurring in these languages was significantly different in that some types had a lower frequency compared with others.

To address the second question of the study, the participants were required to underline the word presenting motion in fictive motion sentences. Consequently, the prepositional phrase simulated motion considerably differently from other constituents, with an average of 56. The selected prepositional phrases were *be samte darre* (toward the valley), *be samte šahr* (toward the town), *ru be nur* (toward the light), *ru be ʔotâq* (into the living room), *be samte dar* (toward the door), *be darune qâr* (into the cave), *ruye divâr* (onto the wall), *ʔaz jâʔi* (from where), *tâ dar* (across the door), *be man* (sticking out hit me), *ʔaz (kenâr) xâne* (past my house), *ʔaz ru ye divâr* (away from the wall), *dar sar tâ sar* (all over), *ʔaz sath zamin* (from the ground), and *be dare* (to the valley).

Compound verbs with an average of 24 were highlighted as another motion constituent in fictive motion sentences. They were; *pišʔâmadegi dârad* (faces), *derâz kešide ʔast* (is lying), *ʔešâre mikonad* (pointed), *ʔešâre kardam* (pointed), *negâh kardan* (looked), *por karde ʔand* (are scattered), *padidâr mišavand* (appears), and *sarâzir mišavad* (descend).

The results of this study are in line with those of Rojo and Valenzuela (2003), in which the path is conveyed by propositions, and verbs usually have a tendency to conflate motion and manner in English. In a study by Akhavan et al. (2017), Farsi speakers use path and manner with the same frequency in their language, which is in keeping with the findings of this study. In another study, Babai (2011) observed that motion verbs are most represented by compound verbs and less by simple verbs. She noted that compound verbs in the Persian language are rendered as a whole word, and the main verb indicates the manner. Similarly, the results of this study suggested that motion is evoked more in compound verbs than simple verbs in Persian speakers.

CONCLUSION

In a nutshell, motion and fictive motion events have been quite brilliantly scrutinised in cognitive linguistic studies. This work has presented Talmy's (2000) model of fictive motion events in cognitive linguistics and implemented his model in the Persian language. To this end, a two-stage study was conducted to inspect the Persian speakers' perception and intuition of fictive motion events. Therefore, a preference task containing 16 pairs of motion and motionless sentences (extracted and translated into the Persian language) along with nine fillers was employed and then handed out to 105 Persian speakers. The first stage investigated to what extent fictive motion sentences are recognisable for Persian speakers, the stage in which the participants were to verify the sentences that evoke motion. The main objective of this stage was to examine participants' recognition of sentences with motion rather than motionless events by choosing the appropriate target event in each pair. Stage 2, moreover, examined the motion constituent in fictive motion sentences to wit: the participants underlined the constituent of the fictive motion sentences that depicted motion. The results in the first stage revealed that approximately 87% of the participants distinguished and marked motion from motionless sentences. This supports our hypothesis that Talmy's model is operative and recognisable in the Persian language. In the second stage, prepositional phrases were underlined with an average of 56 and compound verbs with an average of 24, which means path conjured motion for Persian speakers more than the other semantic constituents such as compound and simple verbs.

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