

Cause of motion in non-agentive motion events in Jordanian Arabic: towards a semantic and syntactic analysis

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The aim of this research is to present a semantic and syntactic analysis of non-agentive motion verb sentences in Jordanian Arabic (JA) with special attention to Cause of motion. It questions whether Cause is encoded in non-agentive motion verbs or appears elsewhere in the JA sentences. The study adopts two theoretical frameworks, namely Talmy's theory of motion and Construction Grammar Approach. 50 native speakers of JA participate in a written elicitation task to collect data in the form of sentences that depict non-agentive motion events. In particular, they are requested to describe motion events embodied in 18 animated images. The analysis reveals that non-agentive motion events in JA are constructed semantically and syntactically by a subject denoting a Figure, a verb denoting Motion conflated with other possible semantic components, a complement denoting an optional Ground and another optional complement or external clause denoting Cause of motion. The analysis also shows that Cause is not lexicalized in the verbs of non-agentive motion in JA. Cause can be implicit when it is unknown or contextually encoded, and it can appear explicitly in the satellite position as a prepositional phrase complement or an external subordinate clause.

KEYWORDS: Construction Grammar, lexicalization, non-agentive motion, satellite-framed pattern, Talmy's typology, verb-framed pattern.

1. Introduction

The analysis of motion events was first presented by Talmy (1972, 1985, 2000), who proposed a framework for describing and categorizing different types of motion events across languages. To describe motion events based on Talmy's (2000) theory, there are four obligatory internal conceptual components; Figure [F] (the moving object), Move or Motion [Mo], Path [P] (the tra-

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jectory), and Ground [G] (the spatial reference). In addition, a motion event can be associated with Manner [Ma] and Cause [Ca] as external Co-event elements (Talmy 2000). Manner [Ma], which indicates the way motion is performed as in running, sliding, walking, crawling, etc., can be optionally encoded in several languages. Cause [Ca] of motion is another external component, and it is controlled by an explicit or implicit agent that initiates or triggers the motion. The causal agent can be a person, an animal, a force of nature, or any other entity capable of causing motion. The internal and external components of motion are presented in the following sentence taken from Talmy (2000: 28).

- (1) *I [Ca] flicked [Mo + Ma] the ant [F] off [P] my plate [G].*

In a revised version of his theory, Talmy (1985, 2000) proposed his binary typology of motion when he observed that languages differ in the way they encode the Path and Manner components of motion. Particularly, he divided world languages into two main categories, namely ‘verb-framed languages’ (V-languages) and ‘satellite-framed languages’ (S-languages). In the first group (V-languages), Path information is encoded in the main verb of the clause whereas Manner information tends to optionally appear in a satellite or verb particle of the clause. Semitic (e.g. Hebrew, Arabic), Polynesian, Romance (e.g. Spanish, French, and Italian), Korean, Turkish, Tamil, Nez Perce, and Caddo are considered typical V-languages (Talmy 1991). The following Spanish sentence illustrates this pattern.

- (2) *Metí [Mo + P] el barril [F] a la bodega [G] rodándolo [Mo + Ma].*
 I-moved-in the keg to the storeroom rolling-it
 ‘I rolled the keg into the storeroom’. (Talmy 2000: 51)

In (2), Manner information optionally appears in the gerundive form *rodándolo* ‘rolling’. On the other hand, Path information is lexicalized in the main verb *metí* ‘move in’, which expresses the movement of the Figure *el barril* ‘the keg’ into the Ground ‘the storeroom’.

In the second group (S-languages), Manner of motion appears in the main verb whereas Path information is expressed in the satellite or the locative complement of the clause. The languages that seem to appear in this type are Indo-European languages (except for post-Latin Romance languages), Finno-Ugric (Finnish, Hungarian), Chinese, Ojibwa, Warlpiri in addition to English which provides a better match to this type. The following English sentence describing the same motion event as in (2) illustrates this language type (S-languages).

- (3) *I rolled [Mo + Ma] the keg [F] into [P] the storeroom [G].* (Talmy 2000: 28)

As presented in (3), Manner of motion is encoded in the main verb *roll* whereas information about Path appears in the satellite position *into the store-room*.

Previous studies carried out on motion events seem to lend support to Talmy's (1985, 2000) typology of motion using data of motion verb sentences from languages like English and Spanish (Aske 1989; Slobin 1996; Ozcaliskan & Slobin 1999 and Navarro-Ortega 2017, among others), Dutch, German, Icelandic, Swedish, Polish, Russian, Serbo-Croatian, French, Portuguese, Spanish, Hebrew and Turkish (Slobin 1997), English and Polish (Slobin, Ibarretxe-Antuñano, Kopecka & Majid 2014). These studies have provided evidence for the cross-linguistic validity of Talmy's (1985, 2000) typology by analyzing motion verb sentences in various languages. They also draw the conclusion that this theory is useful in understanding the dimensions that contribute to the classification of languages worldwide. In another direction, Talmy's theory has been revised by several studies concluding that his binary classification based on expressing either Manner or Path of motion does not account for all world languages. This proposal is evidenced by the results of studies conducted on a variety of languages like French and English (Cummins 1996), Spanish and English (Naigles, Eisenberg, Kako, Highter & McGraw 1998), English, Dutch, German, Icelandic, Swedish, Polish, Russian, Serbo-Croatian, French, Portuguese, Spanish, Hebrew and Turkish (Slobin 2004), Italian (Benincà & Poletto 2006; Simone 2008; Iacobini & Masini 2009; Iacobini 2012), Thai (Zlatev & Yangklang 2004), Chinese (Lamarre 2007; Shan 2018 and Wen & Shan 2021), English and the translation equivalents in Icelandic, Dutch, Bulgarian and Japanese (Croft *et al.* 2010). In addition, other scholars reveal that Talmy's typology does not hold in some morphologically rich languages like Hindi (Narasimhan 2003), Standard Arabic (Al Qarni 2010; Zeddari 2016 and Alhamdan, Alenazi & Maalej 2018) and some of its dialects like Tunisian Arabic (Saidi 2007 & Louhichi 2015) and Jordanian Arabic (Riziq & Hamdan 2022). Moreover, Talmy's theory does not focus on some other conceptual components such as Figure, Ground and Cause, which are key aspects of the conceptual structure of motion (Férez 2008; Alhamdan *et al.* 2018). These studies suggest that this typological distinction is far from being dichotomous, and thus world languages are not restricted to a particular pattern. They typically present a mixed type of typological patterns (i.e. V-framed and S-framed patterns in addition to other minor patterns) when describing motion.

The preceding discussion implies a need for additional consideration of the significance attributed to other conceptual components (i.e. Figure, Ground and Cause) within the broader context of the motion event. As a matter of fact, Cause of motion has been investigated based on minimal data of caused motion events cross-linguistically (Fillmore 1971; Goldberg 1992,

2006; Talmy 2000; Radden & Dirven 2007; Alhamdan *et al.* 2018; Hickmann, Hendriks & Anne-Katharina 2018; Pinker 2019; Busso & Romagno 2021; Romagno 2021; Tusun & Hendriks 2022 and Ly 2022; Romagno 2023). It may be the case that Cause is not a remarkable component that contributes to the typological classification of world languages and is often overlooked in studies of motion events, which predominantly focus on the analysis of the Path and Manner components of motion, emphasizing their pivotal role in understanding the dimensions that classify languages. (Cummins 1996; Naigles *et al.* 1998; Benincà & Poletto 2006; Saidi 2007; Simone 2008; Iacobini & Masini 2009; Iacobini 2012; Louhichi 2015). However, recent studies have shown that understanding the role of Cause in motion events can provide valuable insights into language structure and cognition (Busso & Romagno 2021; Tusun & Hendriks 2022 and Ly 2022).

2. Caused-motion constructions

In analyzing Cause of motion, Talmy (2000) uses English examples to distinguish between self-agentive, agentive and non-agentive causation. For the reader's convenience, self-agentive causation indicates that an agent is responsible for causing its own motion. Agentive causation demonstrates that an agent causes the Figure's movement whereas non-agentive causation describes motion where its Figure moves on its own without the presence of any agent. Talmy (2000) states that some motion verbs can incorporate the three different causation types as in the verb *roll*. See the following sentences taken from Talmy (2000: 72).

- | | | | |
|-----|----|--|-------------------------|
| (4) | a. | <i>The boy rolled across the field on purpose.</i> | Self-agentive causation |
| | b. | <i>The boy rolled the log across the field.</i> | Agentive causation |
| | c. | <i>The log rolled across the field.</i> | Non-agentive causation |

In sentence a., the boy intentionally causes himself to roll across the field. In sentence b., the boy acts as an agent and causes the log to roll across the field. Finally, in sentence c., the log rolls across the field without any specific agent causing the action of rolling. Through an investigation of the semantic properties of motion verbs with reference to Cause, several studies have investigated the distinction between the causative-anticausative alternation. This alternation refers to the relationship between pairs of transitive and intransitive verbs, where the transitive counterpart is approximately understood as causing the action to happen intransitively (Gentner 1981; Levin & Hovav 1994; Wolff 2003; Koontz-Garboden 2009; Heidinger 2010; Aikhenvald 2011; Pinker 2019; Zibin 2019). In this regard, Levin & Hovav (1994) investigates the causative alternation in English, focusing on pairs of transitive and

intransitive sentences like *Antonia broke the vase* and *The vase broke*, indicating that breaking can be either caused by someone (i.e. voluntary/agentive) or simply happen (non-voluntary/non-agentive). Pinker (2019) examines verbs like *make* suggesting that one can say *I made a cake* but not *the cake made*, indicating that *make* must always be agentive. Another differentiation he explains occurs between *to kill* and *to die* (i.e. an occurrence, dying, and causing an occurrence, killing). According to Pinker (2019), there is a semantic difference between events that are agent-oriented, which must have an agent who causes them and those that do not. One can say *I killed him* (i.e. voluntary/agentive) but not *I died him* (i.e. non-voluntary/non-agentive). Using data from JA, Zibin (2019) analyzes the structural, morphological and semantic characteristics of causative and anticausative verbs and reveals that verbs in JA need to satisfy morphological and semantic constraints to be able to alternate.

It should be noted that the majority of the preliminary research is carried out on agentive motion events, also termed as caused-motion events by several scholars (Fillmore 1971; Goldberg 1992, 2006 and Radden & Dirven 2007). Early in the literature, Fillmore (1971) demonstrates that the caused-motion event in (5) is semantically derived from an underlying structure consisting of two propositions, typically captured by *My hitting the ball caused it to go over the fence*.

- (5) *I hit the ball over the fence.*

Cognitive Semantics as a subfield of Cognitive Linguistics has been used to investigate how meaning is constructed and understood in a variety of lexical studies on several domains including motion (Fillmore 1971, 1977, 1988; Jackendoff 1983, 1985, 1990; Fauconnier 1985; Lakoff 1987 and Talmy 2000). Some Cognitive Semantic frameworks, such as Cognitive Grammar (Langacker 1987), Construction Grammar (Goldberg 1992, 1995, 2006), Language Typology (Talmy 1985, 2000), Theory of Argument Structure (Pinker 1989, 2013), do not consider semantics as a separate module within the linguistic model. Syntax, for instance, is viewed as closely intertwined with semantics, with structure being derived from the inherent semantic properties of lexical items embodied in sentences. These frameworks emphasize the interplay between syntax, semantics, and cognition in shaping meaning. Goldberg (1992, 1995, 2006) adopts Construction Grammar framework to analyze agentive or caused-motion events addressing the mappings made between meaning and form as a prime example of linguistic analysis. She (1992: 243) states that the basic semantics of the caused-motion event construction is that the cause argument [Ca] directly causes the theme argument [F] to move along a Path [P] designated by the directional phrase.

Syntactically, this construction has the form [SBJ [V OBJ OBL]] where SBJ is a subject, OBJ is an object and OBL is an oblique object which represents a locative complement. To demonstrate, the argument structure of the verb *spray* has a semantic structure that is mapped onto a syntactic structure as shown below.

(6) *They sprayed the paint onto the wall.* (Goldberg 1992: 243)

Syntactic structure	SBJ	V	OBJ	OBL
Semantic structure	Ca	Mo	F	P
	They	spray	the paint	onto the wall

Table 1. Argument structure of *spray*.

As presented in Table 1, the subject *they* expresses the cause argument of *spray*. The object *the paint* presents the Figure whilst the Path of motion is encoded in the oblique object *onto the wall*.

Following the same line with more semantic and syntactic interplay, Radden & Dirven (2007: 292) claim that the expressions of caused-motion are demonstrated by “a subject denoting a Cause, a predicate denoting Motion, a direct object denoting the moving theme and a complement denoting the goal or source”. They describe the caused-motion construction as an energetic force, typically a human agent who brings about the movement of a thing to or from a location; more abstractly: X causes Y to move to/from Z as in example (7a). In addition, the caused-motion event can also involve a natural force causing the motion of a thing away from a source as shown in (7b).

- (7) a. *Santa Claus* [Ca] *puts* [Mo] *sweets* [F] *in* [P] *children’s stockings* [G].
b. *The storm* [Ca] *blew* [Mo] *the roof* [F] *off* [P] *the police station* [G].
(Radden & Dirven 2007: 292)

Taking a deeper look at example (7b), it indicates that the subject position is not always occupied by a human agent to perform motion.

The storm, representing a natural force, is the cause argument that enhances the movement of the Figure, *the roof* in this example.

In another argument structure, if *the storm* is omitted, and *the roof* is moved into the subject position as in (8), the motion event is regarded as non-agentive (similar to the structure presented earlier in (4c)) since the Cause argument is absent. However, *the roof* in the subject position continues to be the Figure or the theme whose location is changed in this motion event.

- (8) *The roof* [F] *blew* [Mo] *off* [P] *the police station* [G].

The proposal here might question our understanding of the concept of Cause. In other words, if there is no explicit Cause argument in a sentence, does this imply that the motion event has no encoded Cause? The present study sheds light on this issue by examining the lexicalization patterns of non-agentive verbs and the sentence constructions using data from JA, where the Cause argument in this Arabic vernacular is absent. By analyzing these constructions, we can gain a deeper understanding of how causality is encoded in language and whether it is always explicitly stated or can be inferred from other linguistic cues. This research has important implications for our understanding of the relationship between syntax, semantics, and the conceptualization of causality in language.

3. Cause of motion in Arabic

Several Arabic studies have focused on the analysis of self-agentive sentences (Saidi 2007; Zeddari 2016 and Othman & Alhailawani 2023). Riziq & Hamdan (2022) examine self-agentive motion verbs embodied in sentences in JA as in the example below.

- (9) *sa:mi* [F + Ca] *ʃabar* [Mo + P] *i-nnahir* [G]
 Sami crossed the river
 ‘Sami crossed the river’.

This motion event depicts the movement of the Figure ‘Sami’ who causes self-motion by passing horizontally from one side into another along the Ground (i.e. *i-nnahir* ‘the river’).

In addition, few Arabic-based studies have used agentive motion events as data to identify the conceptual structure of motion (Al Qarni 2010; Louhichi 2015; Alhamdan et al. 2018). Al Qarni (2010) analyzes agentive motion events in Standard Arabic from semantic and syntactic perspectives. As illustrated in the example below, she states that the subject slot is filled by the causal agent -t ‘she’, the Figure *ʔal-kursiyy-a* ‘the chair’ is typically expressed in the direct object, and the Ground *ʔa:wilat-i*: ‘my desk’ appears in the complement of the clause.

- (10) *saḥab-a* [Mo]-t [Ca] *ʔal-kursiyy-a* [F] *l-waḥi:d-a* *ḫalf-a* [P] *ʔa:wilat-i*: [G]
 pulled she the chair the only behind desk my
 ‘She pulled the only chair behind my desk’. (Al Qarni 2010: 154)

Alhamdan et al. (2018) points out that Cause of motion in Modern Standard Arabic can be lexicalized in the augmented verb (i.e. non-bare

verb) with causative construction as in the example below. Notably, Arabic augmented verbs are exposed to vocalic and consonantal changes which yield a number of patterns that are called by Arab grammarians as *wazn* ‘weight’ (Bulos & Carroll 1965). It is note-worthy that the bare triliteral pattern *faʿala* can be augmented by adding one letter to the root, yielding the following main augmented patterns *faʿʿala* as in *ḫarraḡ-a* ‘cause to leave’, *fa:ʿala* as in *raaqaṣ-a* ‘dance with’, and *ʔafʿala* as in *ʔaḫraḡ-a* ‘cause to leave’.

- (11) *ḫarraḡ-a/ʔaḫraḡ-a* [Mo + Ca] *-l-qa:di* [Ca] *al-muḡrim-a* [F] *min-a* [P] *-l-mahkama-ti* [G]
 exit the judge the criminal from the courtroom
 ‘The judge had/made the criminal leave the courtroom’. (Alhamdan *et al.* 2018: 7)

In this caused-motion construction, the judge in the subject position is the one who causes the Figure ‘the criminal’ to leave the courtroom by a legal decision. The causative verb *ḫarraja/ʔaḫraḡa* signifies that the judge is the agent who made the Figure represented by ‘the criminal’, exit the courtroom. This causative aspect highlights that the departure of the criminal is a result of the judge’s intentional and legal decision within the context of the courtroom proceedings.

As reported by Alhamdan *et al.* (2018), if Cause is not encoded in the verb, it can be expressed in an adverbial construction or in a separate clause as in (12) and (13), respectively.

- (12) *raḡiʿ-a* [Mo] *yaḡri:* [Mo + Ma] *ʔila* [P] *-l-bayt-i* [G] (*ḫawf-an min-a -l-ʕiqab-i*) [Ca]
 return run to the house for fear of the punishment
 ‘He returned home running for fear of punishment’. (Alhamdan *et al.* 2018: 7)
 (13) *raḡiʿ-a* [Mo] *ʔila* [P] *-l-bayt-i* [G] (*li-ʔann-a z-zalam-a ʔadraka-hu*) [Ca]
 return to the house because the darkness reached him
 ‘He returned home because night was falling’. (Alhamdan *et al.* 2018: 7)

In (12), the Cause of motion, which is running (*yaḡri:*), is the fear of punishment (*ḫawf-an min-a -l-ʕiqab-i*). The verb itself does not directly encode this cause, so it is expressed in this adverbial construction *ḫawf-an min-a -l-ʕiqab-i* ‘for fear of the punishment’. In (13), the Cause for the motion of returning (*raḡiʿ-a*) is that the darkness (*z-zalam-a*) was falling and reached him (*li-ʔann-a z-zalam-a ʔadraka-hu*). Again, the verb does not contain the Cause, so it is expressed in a separate clause.

To sum up, Cause of motion as an agent argument is encoded in the subject position in self-agentive and agentive motion events in a variety of languages, including Arabic. In addition, adverbial constructions and separate clauses can also be employed to indicate cause in motion events in Arabic (Alhamdan *et al.* 2018). As is clear, the two categories of motion events – self-agentive and agentive – received a great deal of attention from both cognitive

and typological perspectives. Nevertheless, to the researcher's best knowledge, non-agentive motion with reference to Cause has been poorly presented. Further, a limited number of Arabic studies have focused on the semantics of motion verbs (Abdulrahim 2013) and the interface between semantics and syntax using Arabic data; particularly JA (Riziq & Hamdan 2022). The current study aims to fill this gap by investigating the semantics and syntax of non-agentive motion events in JA, specifically focusing on the encoding of cause in such sentences. By examining a wide range of JA motion events using the two key theories, namely Construction Grammar by Goldberg (1992, 1995, 2006) and Talmy's (1985, 2000) theory of motion, the study seeks to shed light on the complexities of non-agentive motion events and contribute to our understanding of the semantics-syntax interface in Arabic. Concisely, the current study seeks answers to the following questions: (i) What are the constructional and lexicalization patterns apparent in non-agentive motion events in JA? (ii) What are the main linguistic constructions used to express Cause in JA non-agentive motion?

4. Methodology

4.1 Data collection

The study involved 50 native speakers of JA who are students of a Jordanian university. They are 26 males and 24 females within the age range of 18-40. The data was collected through a written elicitation task. The task required subjects to describe motion events in their native language and to specify the Cause of each motion, if possible. A total of 18 animated GIF images displaying non-agentive motion were systematically selected from the GIF website. The selection of GIFs aimed to cover a wide range of non-agentive motions such as falling, rolling, or sliding, in order to capture diverse descriptions from the subjects of the study. These GIFs viewed a person or an object performing motion in a real-life environment where the average duration of each GIF is approximately 2.5 seconds.

The subjects sat in a quiet room to enhance concentration and minimize distractions. The room was equipped with data show, comfortable chairs and adequate lighting to ensure optimal viewing conditions for the animated images. Prior to the task, the subjects were given a sheet of paper to write down their sentences of motion. They were given examples of non-agentive motion events earlier to guide them through the task and to make sure that the subjects are able to suggest informative sentences that can identify all the needed conceptual components of motion. Additionally, they were instructed to take their time and carefully observe each animated image before writing. They were

informed that their sentences would be used for research purposes only and their privacy would be respected. Notably, the experiment took no longer than 20 minutes to be completed including a short training task at the beginning.

For consistency and space constraints, the study included only verbal sentences with bare verbs, so that when nominal sentences were spontaneously suggested by the subjects, they were directly converted into verbal ones.¹ Further, all sentences with augmented verbs were excluded from the study. Notably, some minor edits regarding the word order were also provided by the author to make the basic motion events presented in an SVO order (subject, verb, object). El-Yasin (1985) noted that this word order has a tendency to be more natural than the VSO order in Arabic because it is commonly used in the context of dialectal Arabic. The list of non-agentive motion events was handed to five native speakers of JA who are Arabic instructors from a Jordanian University to validate the data of motion events and to suggest any amendments in terms of meaning and structure. The final list of non-agentive motion events included 41 sentences (See Appendix A).

4.2 Data analysis

The present study adopts Construction Grammar theoretical framework (Goldberg 1992, 1995, 2006), which looks into the role meaning and grammatical structures play in shaping meaning considering the semantic properties of not only the verb but rather the properties of overall argument structure of the motion event to put stress on how Cause is semantically and syntactically constructed in JA non-agentive motion. Talmy's (1985, 2000) theory of motion is also used to complement the analysis of Cause in JA non-agentive motion by identifying the lexicalization patterns embodied in non-agentive motion verbs and other syntactic elements.

For ease of reference, each example of motion is numbered, followed by transliteration and then by an English gloss. It is noteworthy that the base form is used as the formal equivalent of the JA verb. Additionally, the conceptual components are identified and symbolized as follows: Motion [Mo], Figure [F], Manner [Ma], Path [P], Cause [Ca] and Ground [G] in the motion events, and the syntactic components are also labeled as follows: Subject [SBJ], Verb [V], Object [OBJ], Prepositional Phrase Complement [PPC] and External Clause [EC].

5. Findings and discussion

The semantic and syntactic analysis of JA non-agentive sentences revealed that Cause of motion cannot be encoded in non-agentive verbs. However, motion without its Cause cannot stand. This suggests that non-agentive verbs

in JA require an external force or factor to cause the motion. Without this external cause, the non-agentive verb lacks the necessary context or reason for the motion to occur. In this light, the study showed that Cause can be either explicit or implicit in this type of motion. Explicit Cause optionally appears in the satellite position as prepositional phrase complements (PPCs) or external clauses (ECs). Implicit Cause, on the other hand, is regarded as a null element, yet it is either contextually encoded or perhaps unknown. When it comes to the lexicalization patterns, the analysis of non-agentive motion verb sentences in JA showed that the two patterns (i.e. V-framed and S-framed patterns) proposed by Talmy (1985, 2000) were attested. With more attention to the other conceptual components, the analysis also found minor lexicalization patterns encoded in these verbs (i.e. Motion + Path + Manner, Motion + Path + Ground, and Motion + Path + Figure + Ground) (See Appendix B). For the reader's convenience, the terms 'non-agentive' and 'non-voluntary' motion are used interchangeably in the analysis. Below is a presentation and discussion of the lexicalization patterns embodied in non-agentive motion verb sentences in JA. The tables presented under each example show the mapping made between the verb's semantic and syntactic arguments.

5.1 V-framed Pattern

(Motion + Path): *sa:l* 'leak', *fa:d* 'flood', *sakkar* 'close', *fatah* 'open', *dalaḥ* 'leak', *farr* 'leak', *tarag* 'close', *fa:r* 'flood', *tafaḥ* 'flood', *ḫabat* 'close', *radd* 'close', *nizil* 'descend'

- (14) *ʔil mayy* [F] *fa:dat* [Mo + P] (*min -il maṭar il yaẓi:r*) [Ca] / (*laʔanno -il maṭar yaẓi:r*) [Ca]
 the water flooded (of the rain the heavy) / (because the rain heavy)
 'The water flooded (because of heavy rainfall) or (because the rain is heavy)'.

Syntactic structure	SBJ	V	(PPC)	(EC)
Semantic structure	F	Mo + P	(Ca)	(Ca)
	<i>ʔil mayy</i>	<i>fa:dat</i>	(<i>min -il maṭar -il yaẓi:r</i>)	(<i>laʔanno -il maṭar yaẓi:r</i>)
	'the water'	'flood'	'of heavy rainfall'	'because the rain is heavy'

Table 2. Argument structure of motion event (14) in JA.

The verb *fa:d* 'flood' encodes Motion and Path components. It presents a vertical overflow of a large amount of water beyond its normal limits. It

semantically implies inherent non-voluntary motion where there is no explicit agent to cause the movement of the Figure *?il mayy* ‘the water’. In this motion event, Cause is neither lexicalized in the verb nor in the subject. It optionally appears in the prepositional phrase complement *min -il matar -il yazi:r* ‘because of heavy rainfall’ or in the external clause *la?anno -il maṭar yazi:r* ‘because the rain is heavy’. Moreover, the absence of Cause in this motion event does not indicate that there is no Cause since it can be inferred from the animated image that there is heavy rainfall. As shown in Table 2, the argument structure of *fa:d* ‘flood’ in JA links the Figure *?il mayy* ‘the water’ to the subject and optionally connects the Cause of motion to the prepositional phrase *min -il maṭar -il yazi:r* ‘because of heavy rainfall’ or the external clause *la?anno -il maṭar yazi:r* ‘because the rain is heavy’.

- (15) *?il ba:b* [F] *fataḥ* [Mo + P] (*min- il hawa*) [Ca] / (*la?anno-il hawa gawi:*) [Ca]
the door opened (because of the wind) / (because the wind strong)
‘The door opened (because of the wind) or (because the wind is strong)’.

Syntactic structure	SBJ	V	(PPC)	(EC)
Semantic structure	F	Mo + P	(Ca)	(Ca)
	<i>?il ba:b</i>	<i>fataḥ</i>	(<i>min- il hawa</i>)	(<i>la?anno-il hawa gawi:</i>)
	‘the door’	‘open’	‘because of the wind’	‘because the wind is strong’

Table 3. Argument structure of motion event (15) in JA.

The verb *fataḥ* ‘open’ describes the movement of the Figure *?il ba:b* ‘the door’ on its own when its state changes to permit passage, yet its location is unchanged. *fataḥ* ‘open’ in this motion event requires only one semantic argument (i.e. the Figure *?il ba:b* ‘the door’) to be linked to one syntactic argument in the subject (See Table 3). Cause of motion can be specified in the complement *min- il hawa* ‘from the wind’ or in the external clause *la?anno-il hawa gawi:* ‘because the wind is strong’. Otherwise, it can be contextually encoded. As is clear, the semantic structure of *fataḥ* ‘open’ in this motion event implies non-agentive motion that occurs with no identifiable agent. Nevertheless, it can also present agentive motion (not the focus of the study) with transitive argument structure as in the example below.

- (16) *il-walad* [Ca] *fataḥ-* [Mo + P] *il ba:b* [F].
the boy opened the door
‘The boy opened the door’.

Syntactic structure	SBJ	V	OBJ
Semantic structure	Ca	Mo + P	F
	<i>il-walad</i>	<i>fataħ</i>	<i>il ba:b</i>
	'the boy'	'open'	'the door'

Table 4. Argument structure of motion event (16) in JA.

Example (16) presents a caused-motion construction. In particular, the verb *fataħ* 'open' in this example is an agent-oriented verb which implies that motion is performed by the identifiable external agent *il-walad* 'the boy' who does not necessarily move but causes the movement of the Figure *il ba:b* 'the door'. In Table 4, the verb *fataħ* 'open' assigns the cause argument to the subject position and the Figure *il ba:b* 'the door' to the object position. As is clear, the verb *fataħ* 'open' is not morphologically marked in JA, yet it can subcategorize for both transitive and intransitive constructions, semantically, agentive and non-agentive motion, respectively.

5.2 S-framed Pattern

(Motion + Manner): *ha:ğ* 'ramp', *daħal* 'roll', *nagaz* 'flinch', *rağaf* 'quiver', *zaħat* 'slip off', *zalat* 'slip off', *mazaṭ* 'slip off', *malas* 'slip off', *habb* 'blow', *galab* 'flip', *fatt* 'slip off', *jafal* 'flinch'

- (17) *il-walad* [F] *nagaz* [Mo + Ma] (*min- il χo:f*) [Ca] / (*laʔan-no χa:f*) [Ca]
 the boy flinched (of the fear) / because he scared
 'The boy flinched (of fear) or (because he got scared)'.

Syntactic structure	SBJ	V	(PPC)	(EC)
Semantic structure	F	Mo + Ma	(Ca)	(Ca)
	<i>il- wlad</i>	<i>nagaz</i>	(<i>min- il χo:f</i>)	(<i>laʔanno χa:f</i>)
	'the boy'	'flinch'	'of fear'	'because he got scared'

Table 5. Argument structure of motion event (17) in JA.

nagaz 'flinch' is a Manner verb that expresses a sudden or quick nervous movement as an instinctive reaction to fear or surprise. *nagaz* 'flinch' is non-voluntary. Since then, the performance of this motion is not controlled by any agent confirming that flinching can simply occur with no explicit Cause. However, it can also be performed by the presence of an external Cause that can be shown in the satellite as in the complement *min-il χo:f* 'of fear' or the

external Cause *laʔanno ʁa:f* ‘because he got scared’. *nagaz* ‘flinch’ has one obligatory argument preceding the verb which links the Figure *il-walad* ‘the boy’ to the subject (see Table 5). Although this verb is non-voluntary, it can render voluntary motion too, when causativized. The causative construction of the verb *nagaz* ‘flinch’ is morphologically structured by doubling the middle consonant to form *naggaz* ‘cause to flinch’. In the causative structure, the subject expresses the cause argument that controls the movement of the Figure which occupies the object position.

- (18) *ʔil baħar* [F] *ha:ɕ* [Mo + Ma] (*min- il hawa*) [Ca] / (*laʔanno-il hawa gawi:*) [Ca]
the sea ramped (from the wind) / (because the wind strong)
‘The sea ramped (because of the wind) or (because the wind is strong)’.

Syntactic structure	SBJ	V	(PPC)	(EC)
Semantic structure	F	Mo + Ma	(Ca)	(Ca)
	<i>ʔil baħar</i>	<i>ha:ɕ</i>	(<i>min- il hawa</i>)	(<i>laʔanno-il hawa gawi:</i>)
	‘the sea’	‘ramp’	‘because of the wind’	‘because the wind is strong’

Table 6. Argument structure of motion event (18) in JA.

In this example, *ha:ɕ* ‘ramp’ describes non-agentive motion that is performed by a natural force (i.e. the wind in this context). The wind as an external Cause of motion appears in two constructions: prepositional phrase complement or external clause. It causes unbalanced movement to the Figure *il baħar* ‘the sea’. Nonetheless, the wind, if not stated, is inferred from the context because it is treated as known. Such information is generally not stated and consequently counts as part of what is communicated but not said. As shown in Table 6, *ha:ɕ* ‘ramp’ requires one argument the Figure *il baħar* ‘the sea’ to be assigned to the subject.

5.3 Motion + Path + Manner: *saħal* ‘slip off’, *ta:f* ‘float’, *tafa:* ‘float’, *t:af* ‘float’, *ʁa:m* ‘float’, *ta:r* ‘fly’

- (19) *ʔil ʁa:tim* [F] *saħal* [Mo + Ma + P] (*min ʔu sbaʕ il-biniṭ*) [P + G] (*laʔanno kbir:*) [Ca]
the ring slipped (off finger the girl) (because it big)
‘The ring slipped (off the girl’s finger) (because it is big)’.

Syntactic structure	SBJ	V	(PPC)	(EC)
Semantic structure	F	Mo + P + Ma	(G)	(Ca)
	<i>ʔil ʕa:tim</i>	<i>saħal</i>	<i>(min ʔuṣbaʕ il-binit)</i>	<i>(laʔanno kbi:r)</i>
	'the ring'	'slip'	'off the girl's finger'	'because it is big'

Table 7. Argument structure of motion event (19) in JA.

In (19), the verb *saħal* 'slip' encoding Manner and Path of motion is non-voluntary as its Figure is incapable of motion on its own. The inanimate Figure *ʔil ʕa:tim* 'the ring' moves with no force smoothly from the source Ground which is *ʔuṣbaʕ il-binit* 'the girl's finger' downward in this motion event. In addition, Table 7 shows that the Figure *ʔil ʕa:tim* 'the ring' is linked to the subject and that the Ground optionally appears in the complement *min ʔuṣbaʕ il-binit* 'off the girl's finger'. Regarding Cause of motion, it can be attached to the main clause as in the external subordinate clause (i.e. *laʔanno kbi:r* 'because it is big').

- (20) *ʔi-ttabi* [F] *ta:f-at* [Mo + P + Ma] (*ʕal mayy*) [P + G]
the ball floated (on the water)
'The ball floated on the water'.

Syntactic structure	SBJ	V	(PPC)
Semantic structure	F	Mo + P + Ma	(G)
	<i>ʔi-ttabi</i>	<i>ta:f-at</i>	<i>(ʕal may)</i>
	'the ball'	'float'	'on the water'

Table 8. Argument structure of motion event (20) in JA.

In this motion event, *ʔi-ttabi* 'the ball' is the Figure that moves slowly near the surface of a liquid without sinking. Cause of motion is regarded as null in this motion event. It can be delivered that the physical properties of the ball cause its movement to the top of water. In actuality, the ball floats because it is extremely lightweight, hollow and filled with air. Also, the water's surface tension makes it easy for the ball to float. Table 8 indicates that the subject position is occupied by the Figure *ʔi-ttabi* 'the ball' and the complement that follows the verb presents the Ground *-il may* 'the water' where the Figure settled.

5.4 Motion + Path + Ground: *yirig* ‘drown’, *wigiʕ* ‘fall’, *ta:h* ‘fall’, *zalag* ‘slip’

- (21) *il-binit* [F] *yirgat* [Mo + P + G] *fil baħar* [P + G] *laʔanha ma btiʕraf tisbaħ*
 the girl drowned in the sea because no know swim
 ‘The girl drowned in the sea because she does not know how to swim’.

Syntactic structure	SBJ	V	(PPC)	(EC)
Semantic structure	F	Mo + P + G	(G)	(Ca)
	<i>il-binit</i>	<i>yirig-at</i>	<i>fil baħar</i>	<i>laʔanno ma btiʕraf tisbaħ</i>
	‘the girl’	‘drown’	‘in the sea’	‘because she does not know how to swim’

Table 9. Argument structure of motion event (21) in JA.

In (21), *yirig* ‘drown’ conflates Motion with Path (i.e. down) and Ground (i.e. *ʔil baħar* ‘the sea’). It describes how the Figure *il-binit* ‘the girl’ cannot control her movement through the Ground resulting in drowning. It is worth mentioning that drowning occurs when submersion in water causes suffocation or interferes with breathing. The non-agentive verb *yirig* ‘drown’ assigns the subject position to the Figure *il-binit* ‘the girl’ and the complement *fil baħar* ‘in the sea’ to the Ground. Interestingly, the Ground, in the context of drowning, can refer to any body of water and that it is not specifically tied to the sea in the sentence. In addition, the Ground is encoded in the verb; thus, omitting it from the motion event would convey a literal interpretation that the Figure moves through a body of water. Further, Cause in this example appears in the external clause *laʔanno ma btiʕraf tisbaħ* ‘because she does not know how to swim’ as an optional component.

- (22) *il-walad* [F] *wigiʕ* [Mo + P + G] (*ʕal ʔarid*) [P + G] (*min -ittaʕab*) [Ca] /
(laʔanno taʕba:n) [Ca]
 the boy fell (to the ground) (from exhaustion) / (because he exhausted)
 ‘They boy fell (to the ground) (due to exhaustion) or (because he is exhausted)’.

Syntactic structure	SBJ	V	(PPC)	(PPC)	(EC)
Semantic structure	F	Mo + P + G	(G)	(Ca)	(Ca)
	<i>il-walad</i>	<i>wiḡiʃ</i>	<i>ʃal ʔariḍ</i>	<i>(min -ittaʃab)</i>	<i>(laʔanno taʃba:n)</i>
	'the boy'	'fall'	'to the ground'	'due to exhaustion'	'because he is exhausted'

Table 10. Argument structure of motion event (22) in JA.

In (22), *wiḡiʃ* 'fall' encodes vertical Path moving the Figure *il-walad* 'the boy' from a high position to a low position freely toward the Ground *il ʔariḍ* which is also encoded in the verb unlike its English equivalent 'fall', which does not inherently encode the concept of Ground. *wiḡiʃ* 'fall' implies non-agentive motion; it describes motion that is performed under the influence of gravity. The verb *wiḡiʃ* 'fall' has an argument structure that links the Figure *il-walad* 'the boy' to the subject that precedes the verb and the Ground *ʃal ʔariḍ* 'to the ground' to the complement. Cause can also be optionally specified in the complement *min -ittaʃab* 'due to exhaustion' or in the external clause *laʔanno taʃba:n* 'because he is exhausted'. Otherwise, it is contextually inferred.

5.5 Motion + Path + Figure + Ground: *ʃattat* 'rain', *θalḡat* 'snow'

- (23) *ʃatta-t* [Mo + P + F + G].
 rained it
 'It rained'.

Syntactic structure	V	SBJ
Semantic structure	Mo + P + F + G	G
	<i>ʃatta</i>	<i>-t</i>
	'rain'	'it'

Table 11. Argument structure of motion event (23) in JA.

In (23), the verb *ʃatta* 'rain' in JA denotes motion describing how the encoded Figure 'rain' moves from a higher position toward the Ground. Importantly, Talmy (2000) considered 'rain' as a Figure-conflating verb; however, he did not point to the fact that the Ground and the downward Path are

semantically lexicalized in the verb similar to its counterpart *fatta* in Arabic. Further, these verbs imply that the Ground, even if not directly specified, is the final position for the encoded Figure *ḥita* ‘rain’. As reported in the literature, weather verbs like ‘rain’ have generally been regarded as ‘no argument predicates’ occurring without an overt argument (Quirk & Greenbaum 1973; Seppänen 2002; Huddleston & Pullum 2005). The pronoun *it* occupying the subject position in *It rains*, is typically considered an expletive subject, which is inserted solely for syntactic reasons with no semantic roles. However, Chomsky (1981) and Rizzi (1990) have argued against this position, noting that it does not always behave like an expletive. They argue instead that it is selected by the verb and assigned a semantic role, either as a non-referential or a referential argument (i.e. the sky) as suggested by Bennis (1986), Pesetsky (1995) and Stephens (2007).

Arabic is a highly derivational and inflectional language (Dendane 2007). Derivationally, the verb *fatta* ‘rain’ is derived from the Figure *ḥita* ‘rain’. *ḥita* ‘rain’ undergoes a derivational change to become the verb *fatta* ‘rain’. This process involves internal morphological changes causing alterations to vowels and consonants. Precisely, the vowel /i/ in *ḥita* is changed into /a/, and the consonant /t/ within the same word is doubled to create the desired verb *fatta* ‘rain’. Inflectionally, the pronoun /-t/ attaches to the verb *fatta* ‘rain’ to refer to the 3rd person singular feminine pronoun. This pronoun carries a referential argument, which is the feminine noun ‘the sky’ (i.e. the Ground). As shown in Table 11, the argument structure of the verb *fatta* ‘rain’ allows for the presence of the pronoun *-t* in the subject position.

5.6 Discussion

The analysis of motion verb sentences in JA has revealed that non-agentive motion event is constructed semantically and syntactically by a subject denoting a Figure, a verb denoting Motion conflated with other possible conceptual components, a complement denoting an optional Ground and another optional complement or external clause denoting Cause of motion. This construction allows for a flexible representation of non-agentive motion events in JA. The inclusion of optional components such as the Ground and Cause of motion provides additional context and information about the event. This can be illustrated in Table 12.

Syntactic structure	SBJ	V	(PPC)	(PPC)	(EC)
Semantic structure	F	Mo + (P + Ma + F + G)	(G)	(Ca)	(Ca)

Table 12. Argument structure of non-agentive motion in JA.

The analysis has also indicated that non-agentive motion is not constrained to Cause of motion. That is, Cause is an optional component, and it is not lexicalized in non-agentive motion verbs. Semantically, there is no identifiable agent that controls the movement of Figures in non-agentive motion events. However, the absence of agent does not confirm that motion simply occurs with no Cause. Cause can be implicit and thus regarded as either unknown or contextually encoded. It can also be explicit when it is semantically and syntactically identified in the satellite position as a prepositional phrase complement introduced by the causative preposition *min* 'from, of, or because of' or an external subordinate clause introduced by *laʔanno* 'because'.

The study has also provided further evidence against a rigid syn-chronic dichotomy between V-type and S-type. Conflating both Path and Manner in a motion verb is possible in JA. These findings are well supported by several studies reported in the literature, that is Talmy's typology does not account for world languages, including Arabic (Slobin 1996; 2004; Saidi 2007; Al Qarni 2010; Louhichi 2015; Alhamdan *et al.* 2018). Further patterns were also found with special attention to the other conceptual components (i.e. Motion + Path + Manner, Motion + Path + Ground, and Motion + Path + Figure + Ground). This suggests that Talmy's typology may not fully capture the complexity of world languages like Arabic.

6. Conclusion

The study aimed to present a semantic and syntactic analysis of non-agentive motion verb sentences in JA. It looked into the linguistic constructions that are used to express Cause of motion in JA. It also investigated the possible lexicalization patterns that are encoded in JA non-agentive motion verbs as an attempt to provide further evidence to test the validity of Talmy's (1985, 2000) typology of motion.

Our examination of non-agentive motion events in JA has led to conclude that this type of motion is constructed with a Figure, which is expressed in the subject position. Motion, typically featured in the verb, is accompanied by Ground, which may optionally be presented in the complement. Lastly, Cause appears either within the complement or in an external clause. The analysis also revealed that the binary classifications of Talmy (1985, 2000) were attested in non-agentive motion verbs in JA. This finding may suggest that languages are better presented as a typologically mixed type.

The study indicates that Construction Grammar Approach is essential in the deep analysis of non-agentive motion events because it helped in uncovering those semantic arguments that are mapped onto the syntactic arguments, and those arguments that are semantically and syntactically optional or con-

textually encoded. Talmy's typology of motion proved to be a useful model that helps in understanding the distribution of conceptual components across languages, but it seems that it does not provide a comprehensive system to how motion is universally constructed.

Given the findings of the study, further research is required on the semantic and syntactic argument structure of non-agentive motion across languages. While Talmy's typology of motion offers valuable insights into the distribution of conceptual components in different languages, it may not capture the full complexity of how motion is universally constructed. Further research and analysis are needed to develop a more comprehensive system that accounts for all aspects of non-agentive motion verbs and sentences across languages. Cause of motion also requires more attention in light of Cognitive semantics approaches.

Abbreviations

Ca = Cause; EC = External Clause; F = Figure; G = Ground; JA = Jordanian Arabic; Ma = Manner; Mo = Motion; OBJ = Object; OBL = Oblique Object; P = Path; PPC = Prepositional Phrase Complement; S = Satellite; SBJ = Subject; V = Verb.

Notes

¹ According to Albasria School's definition of sentence types in Standard Arabic grammar, nominal sentences begin with nominals, such as nouns and pronouns, and comprise a structure of Subject + Predicate. Verbal sentences, on the other hand, start with verbs aligned with the VSO structure (Habash *et al.* 2007).

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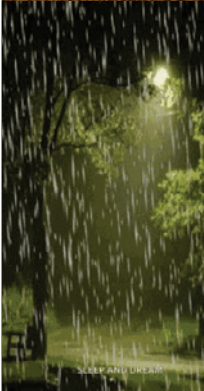
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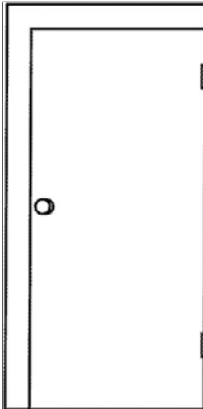
Appendix A

JA motion events and their English translations

Animated images	JA motion events	English translation
	ʔiθaliḏʒ nizil	The snow fell down.
	ʔiddinya θallaḏʒat	It snowed.
	i-ttābi dahlat lʔnno -l arid miʃ mistiwyeh	The ball rolled down because the ground is not straight.
	i-ttābi sahlāt lʔnno -l arid mayleh	The ball slipped down because the ground is inclined.
	il- walad raḏʒaf min -l bard	The boy quivered from the cold.
	il- sagif bidlif may laʔanno fi: hofra	The ceiling is leaking because there is a hole.
	il- sagif biʃor may laʔanno fi: ʒozog fo:g	The ceiling is leaking because there is a hole up.
	il- may sa:lat min -i- ssagif	The water leaked from the ceiling.

	il- ḫatim sihil min ṭuṣbaṣ il binit laʔanno kbi:r	The ring slipped off the girl's finger because it is big.
	il- ḫatim wigiṣ min ṭuṣbaṣ il binit laʔanno kbi:r	The ring fell off the girl's finger because it is big.
	i-ddinya ʔattat	It rained.
	i-ddinya zaḫḫat	It rained heavily.
	i-ttabi ṣa:mat ṣal mayy	The ball floated on the water.
	i-ttabi ṭafat ṣal mayy	The ball floated on the water.
	i-ttabi ṭa:fat ṣal mayy	The ball floated on the water.
	i-ttabi ṭa:ʃat ṣal mayy	The ball floated on the water.
	i-ʃʃali ṭa:rat min -il hawa	The scarf blew away in the wind.
	il-walad wigiṣ ṣal ʔarid min -ittaṣab / laʔanno taṣba:n	The boy fell down of exhaustion / because he is exhausted.
	il-walad ṭ:aḥ ṣal ʔarid min -ittaṣab / lʔanno taṣba:n	The boy fell down of exhaustion / because he is exhausted.

Cause of motion in non-agentive motion events in Jordanian Arabic

	il ba:b tarag min -il-hawa il-gawi	The door closed because of the strong wind.
	il ba:b sakkar min -il-hawa il-gawi / l?anno -il-hawa gawi	The door closed because of the strong wind / because the wind is strong.
	il ba:b radd min -il-hawa il-gawi	The door closed because of the strong wind.
	il ba:b xabat min -il-hawa il-gawi	The door closed because of the strong wind.
	il-binit yirgat l?anno ma btiʔraf tisbaḥ	The girl drowned because she does not know how to swim.
	il-mayy fa:rat min i-ʃʃita:	The water flooded because of heavy rain.
	il-mayy fa:dat min i-ʃʃita:	The water flooded because of heavy rain.
	il-mayy tafhat min i-ʃʃita:	The water flooded because of heavy rain.
	i-ssabu:ni zaḥtat min ʔi:d il-walad	The soap slipped off the boy's hand.
	i-ssabu:ni zaḥtat min ʔi:d il-walad	The soap slipped off the boy's hand.
	i-ssabu:ni maztat min ʔi:d il-walad	The soap slipped off the boy's hand.
	i-ssabu:ni maḥsat min ʔi:d il-walad	The soap slipped off the boy's hand.
	i-ssabu:ni fattat min ʔi:d il-walad	The soap slipped off the boy's hand.

	il- hawa: habb	The wind blew.
	il- baħar ħa:ġ min -il-hawa il-gawi	The sea ramped because of the strong wind.
	il-walad zalag ʕal ʔarid	The boy slipped to the ground.
	il- walad wigiʕ ʕal ʔarid lʔanno itzahlag	The boy fell down to the ground because he slipped over.
	il-ba:b fataħ min -il-hawa il-gawi / lʔanno -il-hawa il-gawi	The door opened because of the strong wind / because the wind is strong
	i-ssayyara galbat fi- ʕʕariʕ laʔanha misriʕa:	The car flipped over the road because it was driven fast.
	il-walad nagaz min -il ʕo:f / laʔanno ʕa:f	The boy flinched of fear / because he got scared.
	il-walad ɖafal min -il ʕo:f / laʔanno ʕa:f	The boy flinched of fear / because he got scared.

Appendix B

The classifications of JA non-agentive motion verbs

JA motion verbs	English translation	Semantic components encoded in the verb
<i>nizil</i>	fell down	motion + path
<i>θallaḡat</i>	snow	motion + path + figure + ground
<i>daḡal</i>	roll	motion + manner
<i>raḡaf</i>	quiver	motion + manner
<i>dalaf</i>	leak	motion + path
<i>farr</i>	leak	motion + path
<i>sa:l</i>	leak	motion + path
<i>sihil</i>	slip off	motion + manner + path
<i>fattat</i>	rain	motion + path + figure + ground
<i>ʕa:m</i>	float	motion + manner + path
<i>ta:r</i>	fly	motion + manner + path
<i>taḡ</i>	fall	motion + path + ground
<i>tarag</i>	close	motion + path
<i>ta:f</i>	float	motion + manner + path
<i>ta:f</i>	float	motion + manner + path
<i>tafa</i>	float	motion + manner + path
<i>yirig</i>	drown	motion + path + ground
<i>fa:r</i>	flood	motion + path
<i>tafaḡ</i>	flood	motion + path
<i>fa:d</i>	flood	motion + path
<i>zaḡat</i>	slip off	motion + manner
<i>zalat</i>	slip off	motion + manner
<i>mazat</i>	slip off	motion + manner
<i>malas</i>	slip off	motion + manner
<i>habb</i>	blow	motion + manner
<i>ha:ḡ</i>	ramp	motion + manner
<i>zalag</i>	slip	motion + path + ground
<i>wigiḡ</i>	fall	motion + path + ground
<i>fataḡ</i>	open	motion + path
<i>ḡabat</i>	close	motion + path
<i>radd</i>	close	motion + path
<i>sakkar</i>	close	motion + path
<i>galab</i>	flip off	motion + manner
<i>fatt</i>	flinch	motion + manner
<i>nagaz</i>	flinch	motion + manner
<i>jafal</i>	flinch	motion + manner