MASARYK UNIVERSITY

Directed Motion
at the Syntax-Semantics Interface

Naděžda Kudrnáčová

Brno

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Introduction

The study is a contribution to the analysis of the principled connections between verbal meanings and syntactic configurations. It offers an analysis of English motion verbs in relation to the directionality of motion. It posits directed motion as a distinct category and shows the role that the directionality of motion plays at both a semantic and a syntactic level. The analysis covers also the causal structuration of motion events, paying special attention to the position of the directionality of motion.

The analysis is based on the British National Corpus. The bracketed symbols after the examples indicate the respective text samples. In order to further support the argumentation (or, in one case, to compensate for a lack of an appropriate example in the British National Corpus) four attested examples obtained via the Google web search machine have been included.

The layout of the study is as follows:

Chapter 1 offers a short classification of motion verbs into two lexical semantic categories as given in the relevant literature. A subsequent analysis of the semantic structure of a selected group of self-agentive verbs of locomotion as reflected in their syntactic behaviour shows that argument expressions need not effect the extension of the verb's meaning.

Chapter 2 is a continuation of the analysis of the interaction between the verb and its arguments as presented in Chapter 1. It demonstrates the constitutive role of the concept of 'directed motion' in the formation of certain syntactic configurations and addresses the question of the incompatibility of verbs expressing directed motion with arguments expressing a change of state. This chapter includes also the analysis of the difference of the conceptualization of path in literal and metaphorical motion and shows that this difference is a result of the conceptual difference between a change of location and a change of state.

Chapter 3 offers a semantico-syntactic analysis of selected groups of motion verbs in relation to the directionality of the motion. It provides further evidence that the directionality of the motion does not represent a mere extension of the verb's meaning. It also pays attention to the degree of semantic weight as borne by the traversal of the path and by the manner of its execution, and looks at the explicit dissociation of the two phenomena as effected in one, relatively rarely studied, type of syntactic construction.

Chapter 4 looks at the temporal progression in space as expressed in pace adverbs. It also points to their evaluative status, underlain by their inherently relative nature.

Chapter 5 provides a case study of the verb *burn* in its directed motion sense. The analysis is carried out with special regard to the relation between the traversal of the path and the manner of its execution as manifested in the causal structuration of the situation. The analysis confirms the difference in the conceptual status of a change of location and a change of state.

Chapter 6 presents an analysis of two types of semantico-syntactic patterns that effect the conflation of a change of location and a change of state. It looks at the ways in which a change of location and a change of state can be accommodated in a single causal frame. The analysis provides further evidence of the non-incremental formation of verbal meanings and of the non-additive status of the directionality of the motion.

Chapter 7 deals with resultativity in directed agentive locomotion events. It addresses the question of the relationship between the traversal of path and manner of motion in the causal structuration of a directed motion event and shows that the non-additive status of the directionality of the motion asserts itself at this level, too.

1. The Formation of Verbal Meanings

1.1 Classification of Motion Verbs

Motion verbs are commonly classified into two distinct categories, manner of motion verbs and path verbs. Manner of motion verbs encode information about the physical modality of motion but, in contrast to the so-called path verbs, do not provide information about a specific direction of motion unless they combine with a directional phrase (cf., e.g., Levin 1993: 267): *John walked*, *John ran*, *John staggered*, *John swam*, etc. By contrast, path verbs, also referred to as "verbs of inherently directed motion" (Rosen 1984), are mute about the manner of motion and only encode information about the direction of the motion: *John came*, *John left*, *John arrived*, etc. The aspects of the path encoded in these verbs "concern the configuration and position of the path, often specified in relation to the direction of motion" (Matsumoto 1996:190). Therefore, it is sometimes claimed that manner of motion is in complementary distribution with direction (e.g., Levin and Rappaport Hovav 1992:252). In the typology offered by Asher and Sablayrolles (1996), path verbs are referred to as "verbs of direction" and manner verbs as "verbs of displacement". As shown by Talmy (1985), the dominant pattern of lexicalization in English is to conflate motion with manner, leaving path to be expressed by path phrases or by verb particles, termed by Talmy "satellites" (e.g., *in* or *out* as in *I ran in*, *I ran out*).[1]

Manner of motion verbs do not form a uniform lexico-semantic class but include a number of sub-types (cf., e.g., Miller and Johnson-Laird 1976). Levin and Rappaport Hovav (1992) classify manner of motion verbs into two types. The first type comprises verbs that imply a direct external cause, thus not involving what Levin and Rappaport Hovav term "protagonist control": *move*, *roll*, *spin*, *rotate*, *whirl*, etc. The second type comprises verbs that do not encode a direct external cause. Therefore, they typically involve "protagonist control", e.g. *walk*, *run*, *swim*, *jog* (these verbs denote self-agentive locomotion).

The analysis presented in this section will concentrate on the self-agentive manner of motion verbs and will demonstrate the following facts:

a) Contrary to the view that manner of motion verbs form a more or less coherent group with regard to their syntactic behaviour, not all verbs belonging to this class behave in the same way (therefore,

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[1] In Romance languages, for example, the characteristic pattern is to conflate motion and path (Slobin 1996, Talmy 1985).

lexical semantic structures of verbs necessitate a more detailed analysis).

b) In the process of the integration of the verb into the construction, the verb's meaning may undergo substantial changes.

c) The verb's meaning is thus not "extended" by the addition of argument expressions (particularly in view of the fact that the possible combinations of argument expressions are subject to a number of restrictions).

d) The bare construction (*John walked*, *John ran*) bears its own meaning potential, in a way which is not shared by the "extended" constructions.

1.2 The Heterogeneousness of the Class of Self-Agentive Locomotion Verbs

According to theories that take the building of verbal meanings as based on the incrementality of their semantic augmentation, verbs used in "basic" constructions (exemplified, in the self-agentive locomotion domain, by constructions of the *John walked* type) represent core lexical units whose meanings can be augmented by the addition of certain combinations of argument expressions (see esp. Levin and Rappaport Hovav 1992 and 1995, and Rappaport Hovav and Levin 1998). The view that constructions with the minimal possible amount of arguments are basic owing to the fact that the more complex, "extended" constructions are formed from these simpler ones can also be found in Hale and Keyser (1998). The constructions in which the verbs occur represent projections of the verbal semantic structure (cf. also Pinker 1989). The verbs are viewed as factors licensing the arguments and their possible combinations and the syntactic constructions are viewed as realizations of the syntactically relevant components of the verb's semantic structure. The idiosyncratic aspects of the verb's meaning are taken as not participating in the formation of a given construction but as serving to merely differentiate between individual members of the verbal class. That is, the number and types of complements (and their possible combinations) are not associated with individual verbs but with verbal classes. What may be called the 'regularity in the variation' is licensed by the verbal semantic structure – more specifically, by a certain set of semantic features supposed to be shared by all the members of the given verbal class. These features then represent those components of the verbal lexico-semantic content that are syntactically relevant, i.e. that determine the verbal syntactic behaviour.

In the projectionist theory manner of motion verbs are taken as forming a distinct group marked by its characteristic syntactic behaviour with the component 'manner of motion' representing the semantic factor determining the verbal syntactic behaviour. To demonstrate the syntactic variability of agentive manner of motion verbs, Rappaport Hovav and Levin (1998:98) adduce the following set of syntactic constructions into which these verbs may enter:

(1) Pat ran.
(2) Pat ran to the beach.
(3) Pat ran herself ragged.
(4) Pat ran her shoes to shreds.
(5) Pat ran clear of the falling rocks.
(6) The coach ran the athletes around the track.

By contrast, the range of syntactic constructions available for path verbs is considerably restricted:

(7) John went (/arrived/left).
(8) John went to the station (/arrived at the station/left the station).
(9) * John went (/arrived /left) himself ragged.
(10) * John went (/arrived/left) his shoes to shreds.
(11) * John went (/arrived/left) clear of the oncoming car.
(12) * John went (/arrived/left) the athletes around the track.

Rappaport Hovav and Levin (1998) explain the syntactic rigidity of path verbs by appealing to the fact that the so-called result verbs, to which path verbs belong, are considerably constrained in their behaviour. Path verbs lexicalize the result of the event, whereas manner of motion verbs lexicalize the type of the process leading to the result and, as such, readily appear in a number of syntactic constructions.

The presence (and, by the same token, the absence) of the information about the manner of the given process is thus seen as the crucial factor licensing the syntactic behaviour of motion verbs. However, in view of the fact that the absence of the information regarding the manner of the motion cannot, by itself, explain why syntactic constructions with path verbs in (7) and (8) are possible, whereas those in (9)–(12) are not, the reason must be sought in the nature of the link of this factor to some other aspect of meaning, namely, to the verb's potential to express agentivity. It cannot be overlooked that path verbs are not admitted into constructions that convey complex, causative events – cf. the acceptability of these constructions with manner of motion verbs in (3), (4) and (6). Causativity is underlain by transitivity. More specifically, it is underlain by the transmission of energy from one participant to another (this may be the same participant, i.e. the

participant whose "self" is divided into the acting self and the acted upon self, as in *John walked himself to the station, John walked himself to exhaustion*). Manner of motion verbs, owing to encoding information about the manner of the activity, bear reference to the source of energy underlying its execution, hence they are admitted into the causative contructions under consideration. These constructions convey the frame meaning "an agent performs an action and this action has a back effect on his state", which rules out path verbs because they do not encode agents. In other words, path verbs, merely encoding information about the type of the path, do not have the capacity to refer to the source of energy underlying the motion. They encode information about the motion in its "bare" form, deprived of all the "additional" information, so to say. That is, they refer to the mere fact of progression in space, which is an aspect of meaning that is not directly related to the executor of the motion (or, rather, does not need the executor for its expression). These observations are in line with Perlmutter's (1978) account, namely, that subjects of unaccusative verbs, to which path verbs belong, are deep-structure objects (cf. also Dušková's (1988:357) differentiation between the agent and the bearer of the event).

By contrast, the meaning component 'a manner of motion' lends itself easily to be a carrier of the information about whether the motion is agentive or not, owing to the simple fact that the manner of the motion is related to the manner of its execution (this fact has also been noted by Levin and Rappaport Hovav 1992). Manner of motion verbs, bearing reference to the source of energy underlying the motion, can thus be used in causative constructions:

(13) John walked himself to the station.
(14) John walked Michael to the station.
(15) John walked himself to exhaustion.
(16) John walked Michael to exhaustion.

However, not all manner of motion verbs are admitted into these types of syntactic constructions (cf. also Boas 2003). Rappaport Hovav and Levin's (1998) claim that manner of motion verbs form a coherent class, in that they display the same syntactic behaviour, is untenable. Faber and Mairal Usón (1999) put forward basically the same view as Rappaport Hovav and Levin. They regard what they term "perceptual and semantic parameters" in manner-of-walking verbs (*stamp*, *strut*, *stagger*, *totter*, etc.) as only semantic "because they do not significantly affect syntax" (1999:114). Consider, e.g., the implausibility of the verb *jog* in the causative types of constructions:

(17) * John jogged himself to the park.

(18) *? John jogged Michael to the park.
(19) * John jogged himself to exhaustion.
(20) *? John jogged Michael to exhaustion.

These constructions are open for verbs that encode the basic types of human agentive locomotion such as *walk*, *march*, *dance*, *swim* or *run*. They are barred for manner of motion verbs that

a) encode movements that are not subject to the executor's control in their entirety:
   (21) * John staggered (/stumbled/limped) himself to exhaustion.
   (22) * John staggered (/stumbled/limped) himself to the door.
   (23) * John staggered (/stumbled/limped) Michael to the door.

b) have an evaluative status, as in *pad, strut* or *amble*:
   (24) * John strutted (/padded/ambled) himself to exhaustion.
   (25) * John strutted (/padded/ambled) himself to the house.
   (26) * John strutted (/padded/ambled) Michael home.

c) deviate from the kinetic norm, as in *waddle, totter* or *lollop*:
   (27) * John waddled (/tottered/lolloped) himself to exhaustion.
   (28) * John waddled (/tottered/lolloped) himself to the house.
   (29) * John waddled (/tottered/lolloped) Michael home.

d) provide information on pragmatic aspects accompanying the motion. These verbs encode information on the situational frame in which the motion is set. The verb *jog*, e.g, refers to the goal underlying the motion (this fact may, in addition, have a bearing on the manner of the motion itself). The verb *wander*, by contrast, encodes the absence of the goal of motion. Cf.:
   (30) * John wandered himself to exhaustion.
   (31) * John wandered himself to the park.
   (32) * John wandered Michael to the park.

The groups specified in (a), (b) and (c) do not represent sharply delimited verbal categories but display overlaps. The verb *strut*, for example, points to the agent's state and, at the same time, expresses the meaning that the execution of the motion is not subject to the agent's conscious control in all its aspects. Moreover, the verb *strut*, functioning as a troponym of *walk* (Fellbaum 1990), may be evaluated as encoding a movement that deviates from the kinetic norm as involved in "walking".

There is yet another semantic factor that may come into play, namely the cyclicity of the motion. This factor is undoubtedly in operation in the causative construction of the *John walked himself to exhaustion* type, which expresses the effect that the motion has on its executor. This construction

requires that the movement achieve a certain degree of intensity, which can underlie the causative role of the movement with respect to the change of the agent's state (the term 'iterativeness' does not seem appropriate here, because it denotes the repetition of the same movement, i.e. the repetition of delimited, bounded motion units). *Walk*, *dance*, *march*, *run* or *swim* encode the cyclicity of the movement as part of their inherent meaning, but *jump* does not:

(33) *John jumped himself to exhaustion.

Admittedly, jumping may be repeated (i.e. one can perform a series of jumps), but this very fact does not improve the plausibility of the construction. One may speculate that the implausibility of this construction with *jump* is underlain by a purely pragmatic factor, namely by the non-prototypicality of the type of repeated motion in question. However, in the face of the possibility of forming this construction with *sneeze*, even this factor loses (some of) its explanatory power:

(34) Ages seemed to pass although it was only moments, until a pollen-laden grass flower tickled his nose and he sneezed himself back to life again. (ACB)

This sentence is a good example illustrating the role that the 'cyclicity' (or, as is the case here, the 'iterativeness') of the action plays in forming the "back-effect" type of causative construction under consideration, although it may be argued that *sneeze* is not a motion verb "proper". Nevertheless, it does involve a motion component, as evidenced by the possibility of forming a caused motion construction of the type *John sneezed the napkin off the table* (cf. Goldberg 1995).[2]

It should be pointed out here that even the 'cyclicity of motion' as one of the factors deciding on the verb's applicability in the "back-effect" type of causative construction cannot, by itself, explain why rotation, in spite of representing a clear instance of cyclicity, need not ensure that the verb lexicalizing this type of movement is admitted into this type of construction:

(35) ? The dervish rolled himself to exhaustion.

This sentence is highly questionable even when used in an appropriate context (for example, when the dervish rolls himself on the ground for a considerably long time).

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[2] As pointed out by Vendler (1984:299), all overt actions involve bodily movement. Therefore, it is not always possible to draw a sharp dividing line between verbs denoting "pure" motion and those denoting other types of physical activities.