# Concerning the radial network view of argument structure: The case of the English caused-motion pattern

**Abstract**. On the basis of the analysis of a sample of data drawn from the large English corpus *enTenTen13*, the present paper provides an account of the caused-motion pattern which calls for caution on the radial network view of argument structure, common among proponents of Construction Grammar In my study, I first analyzed a sample of occurrences which are supposed to instantiate the central sense of this grammatical pattern; then, I considered a few instances of the supposed semantic extensions of the pattern. Based on my findings, I claim that the distinction between a set of different senses is less than convincing. Instead, I propose that the different realizations of the pattern are better characterized as standing in a relationship of family resemblance, sharing a common syntactic structure and only a very general meaning denoting a change of circumstances. This flexible approach allows capturing the peculiarities of the different instantiations by positing a series of low-level generalizations based on specific senses of the lexical items).

Keywords: argument structure; English caused-motion pattern; change phrase; family resemblance, radial network; syntactic polysemy.

## 1. Introduction

In the present contribution, I will address the topic of polysemy in syntax. The view of argument structures as radial categories common among proponents of Construction Grammar (CxG henceforth) has recently been criticized for drawing generalizations over meanings too hastily, with the result that a number of constraints need to be posited in order to rule out implausible senses (e.g. Boas 2003, 2008a; Croft 2003; Perek 2014; see also Faulhaber 2011; Herbst 2011). Furthermore, this perspective has been criticized for drawing unnecessary boundaries between grammatical patterns (e.g. Broccias 2000, 2003). In my study, I will focus on the English grammatical pattern normally referred to as the 'caused-motion construction', but in this paper, the label 'construction' will be replaced by the more theory-neutral one of 'pattern'.[1] First of all, I will illustrate some occurrences of this pattern with a sample of verbs which are normally considered to instantiate its 'central sense' X causes Y to move $Z_{path}$ (e.g. *She threw the paper into the bin*). Then, I will turn my attention to its supposed 'radial extensions'. On the basis of the results of my analysis, I will suggest that the radial network

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[1] This is due to the fact that the notion of 'construction' as is normally used in mainstream CxG (e.g. Goldberg 2006) does not seem to significantly differ from that of 'pattern' used by pre-Chomskyan linguists (e.g. Jespersen 1924; Sapir 1921), as pointed out by Itkonen (2011).

view of argument structure does not seem warranted, at least as far as the caused-motion pattern is concerned. As an alternative, I will propose that the instantiations of the caused-motion pattern may be better characterized as standing in a relationship of family resemblance (Wittgenstein 1953) with each other. Only a very general meaning common to all these instantiations seems to be detectable, and it does not seem necessarily related to motion, but rather to a change of circumstances affecting either the causer or the theme participant or some other aspect of the situation. This observation seems to go in the direction of Broccias's (2003) proposal to merge the 'caused-motion' pattern with other patterns which share the same syntactic structure under the umbrella label of 'change' pattern. While a general meaning can be observed, I will propose that low-level generalizations based on specific word senses are still necessary to avoid overgeneralizations and the consequential proliferation of constraints (cf. Boas 2003, 2005).

## 2. Argument structure and syntactic polysemy

CxG awards a role of paramount importance to argument structure (A-S from now on). A-S specifies how the arguments of a verb are realized and is considered as the part of grammar mapping syntax with semantics. According to Goldberg (e.g. 1995, 2006), the meaning of a sentence is determined by the interaction of the frame semantics of the verb and the A-S (see Fillmore 1982). From this perspective, the English caused-motion pattern requires that the verb is combined with three arguments: a causer, a theme, and a goal. These arguments will be realized syntactically as subject, direct object, and oblique, respectively. Consider the following sentence (from Goldberg 1995, p. 3):

(1)     Pat sneezed the napkin off the table.

The meaning of this sentence will be provided by the interaction between the semantics of

the verb *sneeze* and the A-S of the caused-motion pattern. The semantics of a verb includes the delimitation of participant roles, which are instances of the more general argument roles associated with the construction. Verbs lexically determine which aspects of their frame-semantic knowledge are obligatorily profiled. Thus, the argument structure of the English caused-motion pattern can be seen as the combination of the syntactic properties shown in (2), and the basic meaning reported in (3) below:

(2)  a.  structure:  [NP V NP PP/AdvP]

 b.  function:  Subj V Obj Obl$_{path/loc}$

(3)  CAUSE-MOVE (**causer theme** path)

Only the causer role must be fused with a participant role of the verb: the remaining two can be contributed by the syntactic pattern. Indeed, looking back at the example in (1) above, it is possible to notice that the verb *sneeze* has only one participant role. The interplay between the frame evoked by the verb and the schematic meaning of the A-S gives rise to the meaning of the sentence as a whole.

In Goldberg's (1995) view, syntactic patterns are polysemous: a pattern is typically associated with a family of closely related senses rather than a single, abstract sense. However, one of these senses is considered more 'basic', while the other ones are seen as extensions from this central sense. For instance, the English caused-motion pattern typically implies that the causer argument directly causes the theme argument to move along a path designated by the directional phrase, as in the case of the example sentence in (1). It follows that the English caused-motion pattern will provide an expression with the core meaning X causes Y to move Z$_{path}$ (i.e., something causes something else to change location).[2] While this can be considered the central sense of the pattern, less prototypical examples display different kinds of meaning.

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[2] Goldberg (e.g. 2006, ch. 4) posits that A-Ss show a high degree of overlapping with certain general purpose verbs. For instance, the English caused-motion pattern is allegedly related to the meaning of the verb *put*.

Goldberg (1995, p. 76) identifies at least five different senses related to this pattern, listed in (4) below:

(4)　　a.　　SENSE1: 'X causes Y to move $Z_{path}$' (central sense)

INSTANTIATED BY: verbs of force-exertion (e.g. *push, kick, sneeze, shove*)

e.g. Pat pushed the piano into the room.

b.　　SENSE2: conditions of satisfaction imply 'X causes Y to move $Z_{path}$'

INSTANTIATED BY: verbs of saying with associated satisfaction conditions (e.g. *ask, order, send*)

e.g. Pat ordered him into the room

c.　　SENSE3: 'X enables Y to move $Z_{path}$'

INSTANTIATED BY: verbs of enablement (e.g. *allow, let*)

e.g. Pat allowed Chris into the room

d.　　SENSE4: 'X prevents Y from moving $Z_{path}$'

INSTANTIATED BY: verbs of blocking (e.g. *lock, keep, barricade*)

e.g. Pat locked him into the room

e.　　SENSE5: 'X helps Y to move $Z_{path}$'

INSTANTIATED BY: verbs of helping (e.g. *help, assist, guide, show, walk*)

e.g. Pat assisted him into the room

The senses in (4b)-(4e) are taken to be systematic patterns of extension from the central sense illustrated in (4a). The notion of syntactic polysemy ('constructional polysemy' in CxG

terms) is not unproblematic, though. Indeed, it has been repeatedly challenged over the years. Croft (2003) observed that, because the meaning of a syntactic pattern in context is fully dependent on the verb it co-occurs with, it is less than obvious that these patterns are truly polysemous. This casts doubt on the viability of the concept of syntactic polysemy altogether. As an example, Croft mentioned the case of the ditransitive clause (e.g. *I brought Pat a glass of water*), which pairs the double-object syntactic pattern (Sbj V $Obj_1$ $Obj_2$) with a core meaning of 'caused possession' (X caused Y to receive Z).[3] According to Goldberg (1995, p. 75), the semantics of this pattern has several radial extensions; however, Croft (2003, p. 55) points out that, "each semantic class is associated with only one sense of the ditransitive", and this association is not always straightforward. For instance, the semantic extension 'X intends to cause Y to receive Z' is only compatible with verbs of creation (e.g. *Joe baked Bob a cake*), and the reason is not obvious, given that this class of verbs does not conflict with the meaning of many other extensions, whose interaction with the verb would make perfect sense. Croft then calls the notion of syntactic polysemy into question, arguing instead that these cases are best accounted for by treating the A-S as a network of "verb-class-specific" patterns, i.e. low-level meaningful generalizations over a clearly delimited semantic verb class, only instantiated with verbs of that class.

Perek (2014) carried out a systematic analysis of the conative pattern (e.g. *I kicked at the ball*) in terms of syntactic polysemy, and he encountered the same problem highlighted by Croft:

> …while there can be several different readings of a single conative sentence, not all interpretations are equally available in all instances. For example, in no case would conative sentences with verbs of ingestion mean 'X moves towards Y in order to ingest

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[3] Kay (2005) also provided an account of the ditransitive pattern which is very different from Goldberg's. While Kay still subscribes to the radial network view, he posited a different set of senses compared to Goldberg (1995), providing further evidence that establishing different senses of a syntactic pattern is not straightforward.

Y'. Conversely, verbs of rubbing could never be used in the conative construction to convey the meaning 'X rubs a part of Y and goes towards having Y totally rubbed', let alone an allative interpretation (i.e. 'X goes towards Y to rub Y').

(Perek 2014, p. 71)

Perek notes that there are perfectly sensible combinations that are nonetheless not allowed, which would not be the case if the pattern were truly polysemous. Converging with Croft (2003), Perek concludes that the meaning of the pattern is better seen as a cluster of low-level generalizations over similar verb meanings, rather than as a network of related senses (this idea is more fully fleshed out in Perek 2015; cf. also Boas 2003, 2008a; Broccias 2001, 2007).[4]

In the present study, on the basis of an analysis of the English caused-motion pattern, I will call for caution on the radial network view of argument structure, for two main reasons. First of all, the notion of a 'central sense' is not uncontroversial. Proponents of CxG would maintain that sense1 is the most basic sense, from which all the other senses are derived because it is the simplest and the most concrete. While this seems plausible from a diachronic or a psycholinguistic perspective, at the synchronic level of grammatical description the relevance of this claim is not clear. Simplicity and concreteness may be criteria to establish the order in which the different senses of the pattern should be listed, but it is not clear why the pattern should be seen as a radial network, with a center and a few extensions. Second, the need to break up the meaning of a syntactic pattern into a set of distinct senses is far from obvious. Indeed, in the present study, I will build on previous criticism and put forward an alternative proposal, based on the notions of family resemblance and low-level generalizations.

In the next section, I will first focus on a sample of sentences which are supposed to instantiate the central sense of the pattern. Then, I will direct my attention to a sample of sentences which are supposed to instantiate the radial extensions. On the basis of my analysis, I will argue that the instantiations of the caused-motion pattern can differ along distinct

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[4] The process of generalization is based on analogy (Anttila 1972, 1977; Itkonen 2005).

dimensions, and do not seem to legitimate a radial network view of A-S. Rather, while all the instantiations of the caused-motion pattern share a common syntactic structure, with regard to meaning they seem to constitute a heterogeneous cluster of sentences whose common meaning can only be found at a very general level.

## 3. The English caused-motion pattern

A caused-motion event is defined in *FrameNet* (FN henceforth, https://framenet.icsi.berkeley.edu) as follows: "An agent causes a theme to move from a source along a path to a goal". In the present paper, the label 'agent' will be replaced with 'causer'. So defined, the event can be divided into two subevents: a 'causing' event, whereby a causer participant applies force on a theme participant, and a 'motion' event, whereby the theme participant moves from a source, along a path, to a goal. The caused-motion pattern is conventionally associated with force-exertion verbs (Goldberg 1995, p. 161).

While Goldberg posits that the difference between the core sense and the semantic extensions of the A-S can be described in terms of force dynamics, I will argue that discrepancies between sentences which are supposed to instantiate the same 'sense' (i.e. either the central sense or one of the extensions) can also be accounted for in force-dynamic terms. Furthermore, I will argue that differences in terms of other dimensions (temporality, deontic nuances, profiling, transitivity) contribute to further differentiate among supposed instantiations of a single sense (cf. Broccias 2003, 2007). In subsection 3.1, I will provide a characterization of a sample of sentences which are supposed to instantiate the central sense of the English caused-motion pattern. In subsection 3.2, illustrate a sample of sentences which are supposed to instantiate the radial extensions.

### 3.1 The central sense: verbs of force-exertion

As specified in section 2 above, Goldberg (1995) defines the central sense of the English caused-motion pattern as 'X causes Y to move $Z_{path}$'. From her perspective, this meaning

generalizes over verbs which denote force-exertion. Although in Goldberg's account it is often mentioned that the semantic structure of A-S can be captured by the notion of force dynamics (e.g. Talmy 2000), this point is not elaborated in detail in her work. However, if the relationship is carefully observed between the (central sense of the) caused-motion pattern and the meaning of the verbs which instantiate it, the situation is not as straightforward as it may look at a first glance. In order to illustrate this point, I will analyze a few instances of the caused-motion pattern, drawn from the 20-billion-word corpus *enTenTen13*, one of the largest electronic English corpora currently available (Kilgariff 2012).

The process of data selection went through several stages. My first step was the preparation of a list of twenty English verbs whose definition is available as a lexical entry in FN and have been previously dealt with in the CxG literature (e.g. Goldberg 1995, 2006; Dodge 2010; Bergen and Chang 2013): *blow*, *dash*, *drag*, *fling*, *haul*, *hurl*, *kick*, *lay*, *lift*, *pull*, *push*, *shove*, *slap*, *slam*, *slice*, *sneeze*, *spin*, *squeeze*, *throw*, *toss*. Then, co-occurrence with the caused-motion pattern was later tested through the investigation of *enTenTen13*, with the aid of the facilities offered by the online corpus query system *Sketch Engine*. Finally, I gathered a sample of around 500 randomly selected sentences expressing caused-motion.[5]

After collecting my target sentences, I closed in on the relationship between the meaning of the verb and that of the A-S. The results of my analysis suggest that the sentences featuring the twenty verbs listed above show remarkable differences. Consequently, a closer look at the caused-motion pattern shows that its supposed central sense is far from homogenous. In the remainder of the present section, I will illustrate some examples in detail. Before I proceed any further, a caveat is necessary. Given that most verbs are polysemous (e.g. Cruse 2002), whenever in this study I speak about the meaning of a verb, I will refer to the sense which in FN is associated with frames denoting motion, causation, or change of circumstances.

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[5] Instances of figurative language (e.g. *characters push the narrative in unexpected directions*) were excluded from the sample.

I will start with an illustration of a few instances whose meaning generalizes over a number of verbs whose semantic content can be captured by the caused-motion event as a whole; therefore, it can be said to fully overlap with the A-S. Consider the two sentences below, featuring the verbs *throw* (FN definition: "propel with force through the air by a rapid movement of the arm and hand") and *toss* (FN definition: "throw lightly or casually"):

(5)     …the first thing that I do when I get my Yellow Pages is to <u>*throw* them right into the recycle bin</u>.

(6)     …heat up in the microwave with a bit of butter on top, or <u>*toss* it in the frying pan</u>.

The two sentences above describe actions whereby a causer participant makes a theme participant move through the air by a forward motion of their arm and hand, causing the theme to reach a specific location. Both these examples describe an action whereby a causer participant exerts a force on a theme participant, resulting in the latter's movement through space ('X causes Y to move $Z_{path}$'). Compared to *throw*, *toss* tends to convey a sense of carelessness, but the semantics of the two verbs largely overlap. While, as expected, the caused-motion meaning generalizes over a few verbs whose semantic structure is fairly similar to that of *throw* and *toss* (e.g. *fling*, *hurl*), an analogous tendency can also be observed in the case of verbs whose semantic structure is less obviously related. As an example, consider the following two occurrences, where the caused-motion pattern is instantiated by the verb *drag* (FN definition: "pull along forcefully, roughly, or with difficulty") and *haul* (FN definition: "pull or drag with effort or force") :

(7)     …my two friends <u>*dragged* me in the bathroom</u>…

(8)     We picked out a crate, *hauled* it into the motorhome and continued on our way.

These sentences describe a causer participant exerting a continuous force on a theme participant, causing their motion along a surface. Verbs like *throw* and *toss* on the one hand, and *drag* and *haul* on the other hand denote rather different kinds of action. First of all, the former describe a kind of caused-motion which takes place through the air in a relatively short time-span, while the latter describe a continuous act of force exertion which is carried along a surface, and it may protract over a longer period of time. Second, in the former case, the causer participant moves the theme participant away from themself, whereas in the latter case the causer participant exerts force in their own direction. Moreover, the latter type of action involves a high level of energy expenditure, while the former one may or may not.

The caused-motion pattern which is instantiated by the verb *lay* (FN definition: "place or fix [equipment] in position ready for use") represents a different, possibly more interesting case. Consider the following examples:

(9)     …cut up the veal and cow-heel into small pieces, and *lay* them on the ham.

(10)     *Lay* the garment on a table, and brush it in the direction of the nap.

The verb *lay* portrays the causer participant disposing the theme participant on a surface. This verb captures all upward force-application events whereby the causer participant countenance gravity to prevent the object from falling down. It is relevant to compare this case with that of the verb *lift* (FN definition: "move or bring (something) upward from the ground or other support to a higher position"). Consider the following examples:

(11)     …she rose up to *lift* stuff to the shelves near the ceiling.

(12)     Some albums will have to be done in volumes if you want to be able to *lift* them off the shelf.

*Lift* depicts an act whereby the causer participant raises the theme participant from a lower to a higher position. However, by comparing the two occurrences illustrated above, it is possible to notice a that they differ in an interesting respect. while the example in (11) emphasizes the goal of the theme participant's motion event, the example in (12) foregrounds the source of the motion event: it was lifted off the shelf. The few examples seen so far should already give a sense of the amount of variation which can be found within the supposed central sense of a syntactic pattern.

I will now illustrate a few instantiations of the caused-motion pattern which feature verbs whose meaning does not reflect the whole caused-motion event, but only the 'causing' subevent. These can be distinguished into two groups, on the basis of their differences along two different – apparently interdependent - dimensions: some of these verbs denote a causer participant's continuous exertion of force which is inherently aimed at the theme participant's motion, whereas other verbs depict an 'instantaneous' application of force which may be independent of the motion of a theme participant. With regard to the former group, consider for instance the examples sentences below, including the verbs *push* (FN definition: "exert force on (someone or something) in order to move them away from oneself") and *pull* (FN definition: "exert a force on so as to cause a movement towards oneself or the origin of the force"):

(13)     …we *pushed* the stick into the polystyrene cup so they can stand up and be put on display.

(14)     When he *pulled* the net back into the boat he saw it had a massive tear in it.

These examples portray a causer participant moving a theme participant by steady pressure

(although in the opposite direction) and they differ from those previously taken into consideration because the semantic content of *push* and *pull* does not completely overlap with the caused-motion meaning.

Indeed, while the verbs featured in the examples (5)-(12) all denote the whole caused-motion action, the verbs *push* and *pull* profile the force-exertion action only, not giving any information about the outcome of the effort: the causer can either succeed or fail in moving the theme (see e.g. Dodge 2010; cf. also Broccias 2003). Evidence of the difference between these two types of sentence can be observed by using a simple logical test along the lines of those illustrated by Lewandowska-Tomaszczyk (2007, pp. 141-142). Consider the following sentences, which represent an adaptation of the examples on (6) and (13) above, respectively:

(15)    ??toss it in the frying pan, but it may not move.

(16)    We pushed the stick, but it didn't move.

The sentence in (16) is plausible in English because the verb *push* does not imply the success of the force-application act in moving the theme participant. On the other hand, the instance in (15) is not, since the verbs *throw, toss*, *drag*, *haul*, *lay*, and *lift* all imply the movement of the patient participant, which is not capable of resisting the force-application process performed by the causer participant. The difference between the former and the latter types of sentence can be characterized in force-dynamic terms. Talmy identifies four basic types of possible force-dynamic patterns, which can be summarized as below:

a)  the causer participant forces the theme participant to move, overcoming its intrinsic tendency to rest;

b)  the theme participant's intrinsic tendency toward rest cancels out the force applied by

the causer participant; therefore, the theme participant does not move;

c) the theme participant's tendency toward motion overcomes the causer participant's opposition, so the theme participant moves;

d) the causer participant exerts a force which cancels out the theme participant's tendency toward motion.

The semantics of the caused-motion pattern conforms to pattern a): the force-application performed by the causer is stronger than the patient's inherent tendency to stand still, resulting in the patient's movement through space. The meanings of the verbs instantiated in the examples (5)-(12) above are in agreement with the meaning of the A-S, denoting a successful process of caused-motion. From this point of view, the semantics of the verbs *push* and *pull* is less specific; indeed, this verb does not imply that the caused-motion process was successful. As a result, it is possible to argue that the meaning of *push* and *pull* encompasses both the a) and the b) conditions mentioned above: it is the integration with the A-S which makes the sentence assume the sense captured in a).

The caused-motion pattern is sometimes instantiated by verbs which merely denote a causer participant's instantaneous act of force application on a theme participant, without implying an intention to cause its motion along a path. For instance, consider the following example, featuring the verbs *kick* (FN definition: "strike or propel forcibly with the foot") and *slap* (FN definition: "hit or strike with the palm of one's hand or a flat object"):

(17)    He (…) then stood to *kick* the snake into the bushes and cover it with dust.

(18)    I *slapped* someone's hand off my shoulder and slammed my heel into a leg…

The sentences above describe a causer participant's striking the theme participant, causing its motion along a path to a goal. However, the verb *kick* and *slap* in themselves are not necessarily related to movement. It is instead the semantic content of the whole sentences which imposes a caused-motion reading of these verbs, which in themselves only describe a causer participant's act of force-exertion on a theme participant.

Furthermore, it is possible to observe the caused-motion pattern to be instantiated by verbs which merely denote a causer participant performing a semantically intransitive act of force-exertion, which is not applied on a theme participant. This is the case of the verb *sneeze*, for instance, which features in the classic example illustrated in (1) above (*Pat sneezed the napkin off the table*) and its many variants often discussed in the CxG literature (see e.g. Hilpert 2013). Another verb which falls within this category is *blow* (FN definition: "expel air through pursed lips"),[6] which just denotes a participant sending forth a current of air without necessarily affecting or meaning to affect any other participant. Consider the example below:

(19)    They would (…) put ground pepper in a hollow tube and (…) <u>*blow* it into an opponent's face</u>.

The verb *blow* just denotes a participant sending forth a current of air without necessarily affecting or meaning to affect any other participant.

Finally, as pointed out by Dodge (2010), it is possible to notice the presence of another kind of sentence which would exemplify the caused-motion pattern, instantiated by a limited number of verbs whose semantics foregrounds the theme participant's motion through space rather than the causer's participant application of force. For instance, consider the following sentences, which involve the verbs *slide* (FN definition: "cause to move along a surface") and *spin* (FN definition: "cause to turn around quickly"):

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[6] According to Boas (2003, 2005), it is the use of *blow* in the caused-motion pattern which licenses the occurrence of *sneeze* in the same pattern.

(20)    …while you're eating, _slide_ a thick envelope of cash across the table wrapped in a napkin.

(21)    …some dame fool ran a red light and took me out, _spinning_ me across two lanes...

The sentence in (20) above describes a causer participant performing an indefinite act, causing a patient participant to move smoothly to a location: the attention is focused on the manner of motion, than on how this result was achieved. Unlike the verbs _push_ and _pull_, the meaning of the verb _slide_ and _spin_ emphasize the theme participant's motion rather than the causer participant's force-exertion act.

Although in the present section I provided examples of only a few verbs which instantiate the caused-motion pattern, they should suffice to provide a sense of the amount of variation which can be found even among the sentences which are supposed to instantiate the 'core' meaning of the pattern. In the next subsection, I will illustrate a few instances of the radial extensions.

**3.2** The four radial extensions

After illustrating the central sense of the caused-motion pattern, in the present section, I will provide an account of the four radial extensions which are described in Goldberg's model. For each extension, I singled out twenty verbs whose occurrence in the caused-motion pattern is discussed in Goldberg (1995, ch. 7): _order_, _ask_, _urge_, _encourage_, _invite_, _beckon_, _allow_, _send_, _persuade_, _convince_, _let_, _lock_, _keep_, _barricade_, _assist_, _help_, _accompany_, _show_, _guide_, _walk_. I then analyzed a sample of 500 randomly selected examples of the caused-motion pattern drawn from _enTenTen13_ via _SketchEngine_, although only a few instances will be discussed here, due to space limitations.

*Sense2: conditions of satisfactions*

I will start with a few examples which are supposed to instantiate sense2 (see 4b above), "conditions of satisfaction imply X causes Y to move $Z_{path}$". According to Goldberg, this class includes force-dynamic verbs which encode a communicative act. In Goldberg's view, motion is not strictly entailed: somebody's ordering somebody else into a place does not necessarily entail that that person actually moves in the desired direction. While this seems intuitively sensible, much less clear is whether the verbs which are supposed to instantiate this sense behave uniformly. Moreover, the cut-off point between sense1 and sense2 is not obvious. Let us consider the following examples, which feature the verb *order* (FN definition: "to give an authoritative command"):

(22)    He kidnapped them at gunpoint, *ordering* them into their car trunk.

(23)    …two submarines were sighted, and the master, Mr. Percy Sola, *ordered* the crew into the boats.

The sentence in (22) above depicts a scenario whereby a causer participant orders a theme participant to move into a specific location, by virtue of contingent *de facto* authority. In this specific case, the goal does not look as a particularly appealing one, which suggests that the theme participant will not be particularly willing to obey the order. However, the rest of the sentence lets us know that they were not left with much of a choice. In principle, the theme participant could refuse to move, but their refusal would have to come at an extreme price. The deontic force of the sentence is such that motion unavoidably ensues. The example in (23) is slightly different in that while the causer participant has a socially recognized authority on the theme participant and a possible disobedience to the order is likely to have serious consequences, these are unlikely to be as extreme as the insubordinate's death. In this case, the deontic force of the sentence is slightly lower and it makes more sense to argue with Goldberg

that the motion is not strictly entailed. According to Goldberg (1995, p. 166), though, in order for a sentence to instantiate the caused-motion pattern, the verb must not "entail that the entity denoted by the direct object makes a cognitive decision.[7]" In Goldberg's opinion, this is what prevents verbs like *encourage* from instantiating the caused-motion pattern. There are two problems with this claim. First of all, it is contradicted by empirical data: in my study, I found several occurrences of *encourage* (FN definition: "inspire with confidence, spirit, or hope") in this pattern. Consider the following two sentences:

(24)     …the more we *encourage* tourists into the area (…) the better it must be for the local hotels…

(25)     …using your campaign work to also *encourage* them into the streets for mass actions as well.

These examples do not seem to be structurally different from the ones featuring the verb *order*. The second problem is that, while I may concede that the verb *order* may not –strictly speaking– involve making a decision, I find it far less clear how a verb like *ask* (FN definition: "request to do or give something") which in Goldberg's view is supposed to occur in the caused-motion pattern, would not involve a decision on the theme participant's behalf. Consider the two examples below:

(26)     …Dr Swenson *asked* Marian into his office to explain what had been learned from her.

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[7] The term "cognitive decision" is itself controversial. It seems counterintuitive to posit that a decision could *not* involve cognitive processes.

(27)     …everything was conducted on a face-to-face basis, distributor [sic] would _ask_

          _folk into their homes_…


The verb _ask_ does not have the same deontic force as _order_, and indeed in these occurrences, the motion result is not strictly entailed. It is possible to notice that the two examples differ considerably from each other. The case in (26) is more similar to (23), in that the causer participant outranks the theme participant, thus having official authority. Admittedly, in this case, the latter's chance to make a decision may be limited. No such a condition holds in the case of the example in (27), where the possibility to accept or reject the invitation does not seem to be constrained. The case of _urge_ (FN definition: "encourage or entreat earnestly to do something") is similar, as exemplified by the following couple of excerpts:


(28)     …salespeople _urge you into their shops_ and merchandise spills out into the

          sidewalks…


(29)     …get some in order for the buddies (…) or _urge them in the market_ to acquire

          some…


In both cases, the entity denoted by the direct object seems perfectly able to make their own decision, just as in the sentences featuring _encourage_ reported in (24) and (25) above. Indeed, the fact that the verb _encourage_ is part of the FN definition of _urge_ seems to further contradict Goldberg on this point.[8]

Far from constituting a homogeneous block, the instantiations of the supposed sense2 appear to differ considerably along the dimension of deontic force, which depends on the verb and the other lexical items featured in each realization. Moreover, the necessity to draw a clear

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[8] It must be acknowledged that this problem is proper of Goldberg's analysis, but not necessarily the radial network view in general.

boundary between the supposed central sense and this supposed extensions is less than obvious. As a matter of fact, if we compare the sentences in (13) and (23) above, it is not clear that they instantiate two different 'senses' of a construction; instead, they share some semantic features with one another. Although they diverge in that the former describes a physical force-application act while the latter portrays an order, both profile the first part of the event (i.e. the 'causing' subevent) over the second (i.e. the 'motion' subevent), unlike what happens with sentences like those reported in (5)-(12); moreover, the whole events they depict unfold over a span of time, rather than taking place instantaneously, unlike the case of sentences like those reported in (17)-(19).

*Sense 3: verbs of enablement*

I will now illustrate a few examples which are supposed to instantiate Goldberg's sense3, (see 5c above), 'X enables Y to move $Z_{path}$'. Goldberg states that these cases can be described force-dynamically as involving the removal of a barrier. Intuitively, this conceptualization makes sense, but at a closer look, it seems simplistic. I will now take into consideration a few sentences which feature the verbs *allow* and *let*, following Goldberg (1995).[9] Consider the following instances, featuring the verb *allow* (FN definition: "give the required time or opportunity to let an action to be performed"):

(30)    Never <u>*allow* any strangers into your home</u>. Stay true to your safety.

(31)    "You a little chilly there, Marcia?" he drawled, stepping aside to <u>*allow* her into his house</u>.

The former example represents a recommendation not to give permission to any stranger to enter one's place. The latter portrays an act whereby the causer participant moves in order to let

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[9] As pointed out in the FN lexical entry, these verbs are often used negatively, especially in the case of *let*.

a woman get into his house. Both cases can be interpreted in terms of removing a barrier in order to enable a theme participant to move. However, if we turn to the verb *let* (FN definition: "give the required time or opportunity to allow for an action to be performed"),[10] a more fragmented scenario can be observed. First of all, in my data the verb *allow*, when denoting an inward caused-motion, only seems to license PPs headed by the directional preposition *into*, *let* admits both the directional *into* and the stative *in*. Consider the following examples:

(32)    Send me the fine; I'll pay but I won't <u>*let* you into the building</u>!

(33)    Don't <u>*let* them in your house</u> or give them your time and if you do be prepared to be ripped off.

This issue will be addressed in more detail below when dealing with the supposed instantiations of sense4. At present, I will focus on another interesting feature of the verb *let*. This verb often co-occurs with the adverbs *close* and *near*, often in the context of a negation. Consider the following examples:

(34)    There are reasons we don't <u>*let* anyone near a device like JET or ITER</u> when it's operating.

(35)    …my driver's license (…) waving it to anyone who would <u>*let* me close enough to show them</u>...

These examples diverge from each other in terms of the kind of 'barrier' which seems to be involved. The sentence in (34) is similar to those in (30)-(33) above, in that it denotes the existence of a barrier which impedes the theme participant to get close to another entity and the

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[10] Curiously, FN defines the two verbs circularly.

(negated) possibility to remove it. Depending on the kind of entity which is off-limits, the obstacle can be either hard barriers (e.g. doors or walls) which make an approach physically impossible, or just soft boundaries to discourage any attempt to get closer to an object (e.g. alarms, ropes, ribbons, or lines drawn on the floor). In the former case, this kind of sentence would represent the opposite of the examples in (5)-(12) which denote unavoidable motion as a result of force-application, while in the latter case this type of sentence would represent the opposite of the example in (23), where it is the deontic force of an order which causes the motion event. The sentence in (35) is somewhat different, instead. Indeed, allowing somebody to come closer to somebody else does not necessarily involve the removal of a physical obstacle. Rather, it involves the reduction of spatial distance. If somebody is moving toward me, I will not need to do anything at all in order to enable them to get closer, just stand still. Likewise, if I wish to prevent them from getting closer, I will not necessarily need to impose a hard obstacle, I can just move away and maintain (or even increase) the distance. Distance is often also used metaphorically, to refer to the emotional rather than the spatial/physical sphere (e.g. *he let no woman near his heart*, *she let her stepdad into her heart*). While in the present study I am not delving into figurative language, it is relevant to mention that, in some cases, physical and emotional distance are intertwined. Consider the following examples:


(36)    It ends with her threatening to leave town and never *let* Paul near their child.


(37)    …there was no way he would *let* a girl close enough for kissing.


In the former case, a causer participant is setting a spatial distance between the theme participant and the entity that they may want to approach. Describing a relationship which involves a woman, a man, and their child, there is also a connection with an emotional distance: indeed, the woman's threat to prevent the man from approaching their child would undermine any chance for him to establish a relationship with the baby. The sentence in (36) is similar, but

in this case, the connection between physical proximity and intimacy is tighter: a kissing event necessarily requires the two kissers both to be physically close enough for their lips to touch and to be intimate enough to be willing to do so.

The present outline of a few examples which are supposed to instantiate Goldberg's sense3 show that even this supposed radial extension includes a wide range of realizations, each of which shares some semantic features with some other, but there does not seem to be a single defining feature. Furthermore, some instantiations share some features of meaning with sentences which are supposed to be examples of sense1 and sense2 already seen above. So far, I have not mentioned the fact that the examples of this syntactic pattern with the verbs *allow* and *let* in negative sentences make them similar to the affirmative sentences which are supposed to instantiate sense4. This issue will be discussed below.

### *Sense4: verbs of blocking*

I will now illustrate a few examples which in Goldberg's taxonomy are supposed to instantiate sense4 (see 4d above), 'X causes Y not to move $Z_{path}$'. According to Goldberg, this class of expressions can be described force-dynamically in terms of the imposition of a barrier. Goldberg (1995, p. 162) states that "this class of expressions, by contrast to the one above, can be described in terms of the force-dynamic schema of the imposition of a barrier, causing the patient to stay in a position despite its inherent tendency to move." However, this characterization seems overly simplistic. Let us now consider a few examples featuring the verb *lock* (FN definition: "enclose someone or something by locking a door"). The two sentences below basically correspond to the definition provided by Goldberg:

(38)    Just *lock* them in their room until they are 18.

(39)    …[she] never knew if he would come home drunk (…) Sometimes Carmen *locked* him out of the house.

The example in (38) describes a causer participant preventing a theme participant from leaving a place, whereas the sentence in (39) portrays a causer participant preventing a theme participant from reaching a place. In these terms, these examples are related by via antonymy to the examples in (30)-(33) above, as they describe the opposite conditions: impeding, rather than allowing. There are also instantiations of the pattern featuring the verb *keep* (FN definition: "cause to continue in a specified state or process"), which does not entail the imposition of a hard obstacle to prevent the theme participant from approaching a position or other entities. Consider the following couple of examples:

(40)    St. Chrysostom, exhorting parents to *keep* their children at a distance from such places.

(41)    When leading, always *keep* your horse at a safe distance from the other horses.

In (39), the causer participant can prevent the theme participant just by exercising their parental authority. The sentence in (40) describes the causer participant's manipulation of the theme participant in order for it to move in a direction which would avoid a clash with other entities. In a sense, these sentences can be seen as the counterpart of the sentences illustrated in (34)-(35) above;[11] the latter can be paraphrased as "let near", the former as "keep away". The fact that the sentences which are supposed to instantiate sense3 and sense4 seem to be tightly connected is further suggested by the fact that the former often appear in negative sentences and when they do, their meaning basically corresponds to that of the latter when they occur in affirmative sentences.

Supposed instantiations of sense4 were investigated by van der Leek (2000), especially with regard to the co-occurrence of the verb *lock* and a directional (*into*) or a stative preposition (*in*).

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[11] One may also argue that (40) is related via antonymy with the supposed instantiations of sense2 in (22) and (23), given that in this case the sentence denotes an order *not* to do something.

van der Leek (2000, p. 307) pointed out that 'X prevents Y from moving $Z_{path}$' cannot accurately describe the meaning of Goldberg's sense4 because it fails to account for the fact that the preposition *into* profiles motion. Indeed, the meaning Goldberg's example sentence *Harry locked Joe into the bathroom* could be paraphrased as "Harry locked the door from the outside once Joe had entered the bathroom". van der Leek argues that the combination of *lock* and a directional preposition evokes a frame (Fillmore 1982) which motivates the 'prevent motion' meaning: on this view, *into* profiles the original (self-propelled) motion and *lock* the imposition of a barrier. According to her, profiling motion is what distinguishes examples of *lock into* from those of *lock in*. van der Leek (2000, p. 315) makes use of the following example:

(42)     She <u>*locked* her jewels in her jewel case</u> (emphasis added).

van der Leek maintains that, since jewels cannot move into their case, there is no motion to be profiled, and this is the reason why the locative preposition *in* is used instead of directional *into*. While I agree with van der Leek that Goldberg's account is too simplistic, her analysis is problematic, for three main reasons. First of all, it is less than clear why the motion should be necessarily self-propelled: the jewels are in the case because somebody put them there; likewise, Joe could have been pushed into the bathroom by somebody else. Second, the meaning of the sentence in (42) above does not seem to be 'X prevents Y from moving $Z_{path}$', but rather 'X prevents Y from being accessible to others', which is not even necessarily related to motion.[12] Finally, *enTenTen13* includes many instances of *lock in* where the original motion is part and parcel of the meaning of the sentence, whether it is self-propelled, as in the reflexive case in (43) below,[13] or caused, as in (44).

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[12] This observation seems to support Broccias's (e.g. 2003) argument for replacing the 'caused-motion' and the 'resultative' patterns with a more comprehensive 'change' pattern, which would also include non-caused-motion and non-resultative realizations. See section 4 below.

[13] The cases of self-propelled motion are controversial. In these cases, the meaning of the sentence should be 'X prevents Y from moving $Z_{path}$ and Y coincides with X'. This seems to make sense only when the locking event is the result of an accident. The meaning of a sentence like (43) seems to be better

(43)  As for the writing process, I would _lock myself in my room_ or type outside throughout the night.


(44)  They grabbed me and _locked me in jail_ for 48 hours.


The instantiations of the pattern featuring *lock in* and those featuring *lock into* can both be found with a directional meaning. The *enTenTen13* corpus includes plenty of examples of both *lock in* and *lock into* but my analysis does not reveal any clear difference between the two types of sentence. Compare the sentences in (45-46) below with those in (47-48):


(45)  It seemed common practice for police to _lock them into lockers_ and bash the outside with bats.


(46)  …Tavington and his troops round up the inhabitants (…) _lock them into a church_ and burn them all…


(47)  …force feedings of laundry powder to shut me up, and _locking me in dungeon-like closets_…


(48)  He _locked me in his house_, held me at gunpoint, made me do drugs, and then he raped me.


The semantic basis which underpins the *in/into* alternation (if any) is less than obvious and should be the object of a study in its own right. The caused-motion pattern is instantiated by sentences which feature some verbs which allow the alternation (e.g. *throw*, *toss*, *urge*, *let*, *lock*, *keep*) and some which only allow the use of *into* (e.g. *push*, *slide*, *order*, *allow*), but this

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paraphrased as 'X prevents Y from being accessible to others and Y coincides with X'.

distinction cuts across Goldberg's supposed senses (with the possible exception of sense5, but this should be investigated more in detail in a corpus-based study).

*Sense5: verbs of helping*

I will finally illustrate a few examples which are supposed to instantiate Goldberg's sense5 (4e above). In Goldberg's taxonomy, these cases describe ongoing assistance to move in a certain direction. From my perspective, these sentences are very similar to the supposed instantiations of sense3, since help and enablement are tightly related, as both have to do with the removal of a barrier. Consider the following examples featuring the verb *assist* (FN definition: "help by doing a share of work or by providing money or information"):

(49)     Victor pulled the man out from under the car and *assisted* him into the building.

(50)     …your driver for the day will give you all the information and *assist* you into Stonehenge.

The sentence in (49) describes a causer participant helping a theme participant to reach a specific location, overcoming the (physical and non-physical) barriers which would impede them to reach it on their own. In the case of (50), the meaning is only minimally different, as the causer participant accompanies the theme participant into a site of historical interest, helping them get around possible barriers. Consider also the two examples below, featuring the verb *help* (FN definition: "make it easier for someone to do something"):

(51)     …The couple was able to drag the man to shore and *help* him out of the lake.

(52)     I started *helping* people out of their cars and out of buildings.

These examples are similar to the ones above, except that they describe a causer participant helping a theme participant to leave rather than reach a place, by making easier for them to remove the barriers. In some cases though, there are no barriers involved, and the help is limited to giving instructions, accompanying, or illustrating a place. Consider the examples below, featuring the verb *walk* (FN definition: "guide, accompany, or escort someone on foot"):

(53)    Karen *walked* us through some of the best museums, parks, and tapas bars in Madrid.

(54)    She then *walked* me through the village and introduced me to Atangana Manga.

In these cases, there is no actual overcoming of physical obstacles, the causer participant is helping the theme participant to have the most pleasant possible experience in Madrid. In the second case, the causer participant is accompanying the theme participant who is visiting their village (then introduced them to another person). In these cases, the meaning of the sentence has more to do with cooperation rather than actual removal of barriers. Similar examples with the verbs *show* and *guide* can also be found in the corpus. Again, the supposed instantiations of sense5 share some semantic traits with each other and with other instantiations of the caused-motion pattern.

## 4. An alternative proposal

On the basis of my analysis, it is less than clear that the occurrences of the caused-motion pattern can be allocated to five distinct senses. In section 3 above, I illustrated a series of attested occurrences of the caused-motion pattern occurring with a range of verbs, pointing out that all the supposed senses seem to include a range of instantiations which differ in terms of the relationship between the meaning of the verb and that of the A-S across different dimensions: force-dynamic schema, type of contact between the participants involved, temporal unfolding of

the event described, profiled portion of the path motion (source vs. goal), direction of the motion event, and degrees of transitivity of the verb. On the other hand, supposed instantiations of a sense often share semantic features with supposed realizations of different senses.

Instead of breaking up the meaning of the caused-motion pattern into different senses, I will suggest that the instantiations of the caused-motion pattern can be seen as a collection of occurrences standing in a relationship of family resemblance with each other. All these instantiations share the same syntactic structure and a very general meaning, immanent to all the realizations. This general meaning does not seem to be necessarily related to motion; rather, it seems to denote a more general change of circumstances affecting the causer participant, the theme participant, or the situation more generally. This is particularly evident in the case of examples (39), (42), (43), reported as (55), (56), and (57) below:

(55)    …[she] never knew if he would come home drunk (…) Sometimes Carmen _locked_ him out of the house.

(56)    She _locked_ her jewels in her jewel case.

(57)    I would _lock_ myself in my room… As for the writing process, I would _lock_ myself in my room or type outside throughout the night.

The meaning of (55) can be paraphrased as 'X prevents Y from moving $Z_{path}$', as in Goldberg's model. However, as argued in subsection 3.2, this does not seem to be the case in (56), whose meaning seems to be closer to 'X prevents Y from being accessible to others'. The meaning of (57) is similar to that of (56), with the qualification that in (57) X coincides with Y. While (55) denotes a change in a situation involving motion ('Y was able to move $Z_{path}$, but not any longer'), (56) and (57) denote a change which does not necessarily involve motion ('Y was available to others, but not any longer'). Therefore, the meaning of the sentence seems closer to

what Goldberg (1995) terms 'resultatives', which have the meaning 'X causes Y to become Z'. While this would be a problem for a radial network view, which Goldberg (1995) circumvents by regarding the resultative pattern as metaphorically derived from the caused-motion pattern,[14] this is not so for a family resemblance view. Indeed, there is no need for the two patterns to be kept distinct, it is sufficient to postulate its general meaning at a higher degree of abstraction, describing a change of circumstances affecting one of the two participants (or both) or other aspects of the situation. This general meaning of change is captured by Broccias's (2003) notion of 'change phrase':

> A nonverbal phrase XP, which has neither a subject nor an object role, is said to be a change phrase (CP) if it refers to a state, position or a circumstance possibly achieved by an entity *a* involved in an event E provided that *a* can be postulated at the semantic pole of the relevant pattern (…)).
>
> (Broccias 2003, p. 327, emphasis in the original)[15]

This notion makes it possible to overcome the distinction between the caused-motion and the resultative pattern as well as the separation among the different senses of the caused-motion pattern.[16]

Free from the urge to break the meaning of a syntactic pattern into different senses, a family resemblance account is convenient in that it enables the analyst to both capture a very general meaning to be immanent in all the realizations of the pattern while allowing for a wide range of variation, without incurring the inconvenience of a more rigid characterization based on the controversial notion of prototype. However, adopting a looser characterization of a pattern does

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[14] From a diachronic or psycholinguistic perspective, this may be the case. However, it is not clear how this fact would be relevant from the perspective of synchronic description.

[15] In the original, the word 'construction' is employed, instead of 'pattern'.

[16] The notion of 'change phrase' also encompasses cases which, despite having the same syntactic structure, do not fit a caused-motion or a resultative reading. These include, for instance, Broccias's (2007) 'non-causal change' patterns (see also Boas's 2008b 'a hole through Y' patterns).

not mean that more fine-grained attempts to explain the similarities and differences between the distinct instantiations of the caused-motion pattern should be given up; in fact, the opposite is true. Indeed, by allowing for different possible kinds of interaction between the meaning of the verb and the A-S, a family resemblance perspective still favors positing low-level generalizations centered on specific word senses, in order to avoid a proliferation of constraints to rule out implausible senses. As an example, consider the sentence in illustrated in (21) above, reported as (58) below, which features the verb *spin*:

(58)    …some dame fool ran a red light and took me out, *spinning* me across two lanes...

In that case, the sentence has a caused-motion meaning of the kind 'X causes Y to move $Z_{path}$', as in Goldberg's sense1. However, it is possible to observe occurrences of the same verbs in sentences which show the same syntactic structure, but a rather different meaning. Consider the examples in (59) and (60) below:

(59)    He *spun the pedestal seat toward the bow*, and propped his boots up on a small igloo cooler.

(60)    I *spun my stool toward the street*, as the CD player settled on Barry McGuire's "Eve of Destruction".

The scenarios described by these instances involve a causer participant rotating the theme participant so that it faces a certain direction. This is different from the sentence in (58), in that the theme participant changes its orientation, but does not move along a path. The sentences in (59) and (60) share the same syntactic structure as (58), but they involve a different sense of the verb *spin*, denoting just a change of position but not a motion along a path (see also Dodge

2010, p. 43). Moreover, they involve a different meaning of the preposition *toward*, whose meaning in this case is 'in such a position as to be in the direction of', rather than 'along a course leading to'.[17]

While utterances like (58) and occurrences along the lines of (59) and (60) both describe some change of circumstances, only the change denoted by (58) is captured by the notion of 'caused-motion'. This problem can be resolved by positing a more inclusive pattern which couples the syntactic structure [NP V NP XP] with a very general meaning denoting a change in circumstances, which is captured by Broccias's notion of 'change phrase'. All the realizations of this pattern stand in a relationship of family resemblance with each other since all of them denote some kind of change. At the same time, in order to avoid overgeneralizations and the resulting proliferation of constraints to rule out implausible senses, it is possible to draw low-level generalizations centered on the specific senses of the verb and the specific senses of the postverbal arguments each verb sense tends to occur with.

Although these low-level generalizations need to be established empirically through the quantitative analysis of large corpora (Hunston and Francis 2000; Boas 2003; Perek 2015), on the basis of the occurrences illustrated in (59) and (60) it may possible to speculate about the nature of these low-level patterns based on word senses. Indeed, it may be proposed that in (59) and (60) the syntactic structure [NP V NP XP], the verb *spin* with the sense 'to rotate an object so that it faces a certain direction', and the preposition *toward* with the sense 'in such a position as to be in the direction of' co-occur to describe a change of circumstances whereby a causer participant causes a theme participant to change its orientation with regard to a specific point of reference. The adoption of this approach seems to enable the analyst to notice commonalities and differences in particular aspects of the clausal meaning across occurrences of the pattern with different verbs, recognizing the contribution of both the syntactic structure and the lexical items in determining the semantic content of each specific utterance.

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[17] These definitions of the preposition *toward* are taken from the *Merriam Webster Dictionary* (https://merriam-webster.com/dictionary/toward).

## 5. Concluding remarks

In the present paper, I argued that a radial network view of the caused-motion pattern seems to be less than ideal. Indeed, the heterogeneity observed in a number of occurrences drawn from the large English corpus *enTenTen13* does not seem to support the clear-cut distinction between a central sense and a few semantic extensions. Instead, the pattern seems to be better characterized as a coupling of a syntactic structure [NP V NP XP] and a very general meaning denoting a change in circumstances affecting the causer participant, the theme participant, or some other aspects of the described situation. The various instantiations of this pattern can be seen as standing in a relationship with family resemblance with each other. This characterization is very flexible and allows for low-level generalizations which avoid the proliferation of constraints to rule out implausible senses. These generalizations are based on specific senses of both the verb and the lexical items which appear as postverbal arguments and need to be established empirically by a careful investigation of corpus data.

With regard to future studies, the adoption of a perspective centered on heterogeneity can represent a general background to investigate the interaction between the general meaning of the pattern and that of the lexical items which occur in each specific instantiation, without positing a single mechanism which would apply in all cases. Not only will doing away with the assumption of homogeneity be useful in the exploration of the division of labor between the A-S and the verb, but it will also help in shedding light on the role of the PP/AdvP in each instantiation of the pattern (e.g. Boas 2003, 2008a). Indeed, accepting that the meaning of a given sentence is not limited to the interaction between the verb and the A-S will allow exploring the peculiarities of the specific senses of the distinct lexical items and their contribution to the meaning of each occurrence of the pattern.

**References**

Anttila, R., 1972., An Introduction to Historical and Comparative Linguistics. MacMillan, New York.

Anttila, R., 1977. Analogy. Mouton, The Hague.

Bergen, B.K., Chang, N.C.., 2013. Embodied construction grammar. In Hoffmann, T., Trousdale, G. (Eds.), The Oxford Handbook of Construction Grammar. Oxford University Press, New York, pp.168-190.

Boas, H.C., 2003. A Constructional Approach to Resultatives. CSLI, Stanford.

Boas, H.C., 2005. Determining the productivity of resultatives: A reply to Goldberg & Jackendoff. Language 81 (2), 448-464.

Boas, H.C., 2008a. Determining the structure of lexical entries and grammatical constructions in construction grammar. Annual Review of Cognitive Linguistics 6, 113-144.

Boas, H.C., 2008b. Resolving form-meaning discrepancies in Construction Grammar. In Leino, J. (Ed.), Constructional Reorganization. Benjamins, Amsterdam, pp. 11-36.

Broccias, C., 2000. The need for the resultative network. BLS 26, 41-52.

Broccias, C., 2001. Allative and ablative *at*-constructions. CLS 37 (1), 67-82.

Broccias, C., 2003. The English Change Network: Forcing Changes into Schemas. de Gruyter, Berlin.

Broccias, C., 2007. The construal of constructions: Causal and temporal interpretation in change constructions. Constructions, 1/2007. Online: http://journals.linguisticsociety.org/elanguage/constructions/article/view/19/24.html

Croft, W., 2003. Lexical rules vs. constructions: A false dichotomy. In Cuyckens, H., Berg, T., Dirven, R., Panther, K.W. (Eds.), Motivation in Language: Studies in Honour of Günter Radden. Benjamins, Amsterdam, pp. 49-68.

Cruse, A.D., 2002. Microsenses: Default specificity and the semantics-pragmatics boundary. Axiomathes 1 (1), 1-20.

Dodge, E.K., 2010. Constructional and Conceptual Composition. University of California PhD thesis, Berkeley.

Faulhaber, S., 2011. Idiosyncrasy in verb-valency patterns. Zeitschrift für Anglistik und Amerikanistik 59 (4), 331-346.

Fillmore, C.J., 1982. Frame semantics. In Linguistic Society of Korea (ed.), *Linguistics in the Morning Calm*. Hanshin Publishing, Seoul, pp. 111-137..

Goldberg, A.E., 1995. Constructions: A Construction Grammar Approach to Argument Structure. University of Chicago Press, Chicago

Goldberg, A.E., 2006. Constructions at Work: On the Nature of Generalization in Language. Oxford University Press, New York.

Herbst, T., 2011. The status of generalizations: Valency and argument structure constructions. Zeitschrift für Anglistik und Amerikanistik 59 (4), 347-368.

Hilpert, M., 2013. Construction Grammar and Its Application to English. Edinburgh University Press, Edinburgh.

Hunston, S., Francis, G., 2000. Pattern Grammar: A Corpus-driven Approach to the Lexical Grammar of English. Benjamins, Amsterdam.

Itkonen, E., 2005. Analogy as Structure and Process. Benjamins, Amsterdam.

Itkonen, E., 2011. Konstruktiokielioppi ja analogia. Virittäjä 115, 600-605.

Jespersen, O., 1924. The Philosophy of Grammar. Holt, New York.

Kay, P., 2005. Argument structure constructions and the argument-adjunct distinction. In Fried, M., Boas, H.C. (Eds.), Grammatical Constructions: Back to the Roots. Benjamins, Amsterdam, pp. 71-98.

Kilgariff, A., 2012. Getting to know your corpus. In International Conference on Text, Speech, and Dialogue. Springer, Berlin, pp. 3-15.

Lewandowska-Tomaszczyk, B., 2007. Polysemy, prototypes and radial categories. In Geeraerts, D., Cuyckens, H. (eds.), The Oxford Handbook of Cognitive Linguistics. Oxford University Press, New York, pp. 139-169.

Perek, F., 2014. Rethinking constructional polysemy: The case of the English conative construction. In Glynn, D., Robinson, J.A. (Eds.), Corpus Methods for Semantics: Quantitative Studies in Polysemy and Synonymy. Benjamins, Amsterdam, pp. 61-85.

Perek, F., 2015. Argument Structure in Usage-based construction grammar: Experimental and corpus-based perspectives. Benjamins, Amsterdam.

Sapir, E., 1921. Language: An Introduction to the Study of Speech. Harcourt, New York.

Talmy, L., 2000. Toward a Cognitive Semantics. 2 Vols. MIT Press, Cambridge, MA.

Van der Leek, F., 2000. Caused-motion and the 'bottom-up' role of grammar. In Foolen, A., van der Leek,

F. (Eds.), Constructions in Cognitive Linguistics. Benjamins, Amsterdam, pp. 301-331.

Wittgenstein, L., 1953. Philosophical Investigations. Blackwell, Oxford.