No Motion in Caused Motion Construction

Ian Joo
City University of Hong Kong / Tat Chee Avenue, Kowloon, Hong Kong
ian.joo@outlook.com

Abstract

This paper argues that the English Caused Motion Construction does not impose the meaning of motion onto the verb, unlike what has been previously assumed. There exist cases of Caused Motion Construction that does not convey any motion of the theme, and when the theme does move into the goal, the sense of motion fully deductible from the verb and/or the preposition. There is thus no need to tag the meaning of motion to the construction itself. I argue that the construction does not change the semantic role of the verb, but only that of the direct object and the directional phrase.

1 Introduction

According to Goldberg (1995), the English Caused Motion Construction is a construction that is syntactically (1) and semantically (2):

(1) [SUBJ [V OBJ OBL]]

(2) X CAUSES Y TO MOVE Z

where OBL is a directional phrase and V a non-stative verb. (3) is an example:

(3) a. I put the book on the table.
'I put-caused the book to move onto the table.'

b. I kicked the ball into the goalpost.
'I kick-caused the ball to move into the goalpost.'

This paper argues that the term "Caused Motion" is a misnomer and there is no "motion" implied by the construction per se. When there is motion implied, it is fully deductible from the definition of the verb or the preposition, so there is no motivation to include the sense of motion within the definition of the construction. In (3a), the verb *to put* by definition denotes "**Move** to or place in a particular position" (Stevenson and Waite, 2011, p. 1168, emphasis mine). In (3b), the preposition *into* is by definition a preposition "expressing **motion** or direction to a point on or within" (Stevenson and Waite, 2011, p. 744, emphasis mine). It is therefore redundant to include the notion of motion within the construction.

We propose that the semantics of the Caused Motion Construction is simply to assign the semantic roles of agent, theme, and goal to the SUBJ, OBJ, and OBL, respectively; it does not tell the verb to move or not to move the theme. The notion of motion, if present, is entailed by the verb and/or the preposition.

2 Previous Studies

2.1 Degree of Dynamicity

Rohde (2001) argued that English prepositions express **dynamicity** to different degrees. Based on her corpus data, she classified the occurrences of prepositions into dynamic occurrences (e. g. *He went **into** the room*) and static occurrences (e. g. *He stayed **in** the room*). She measured the **index of dynamicity** of each preposition, which is the number of dynamic occurrences divided by the total number of occurrences, as shown in Table 1.

Rohde also classified verbs in her corpus data into Motion Verbs (verbs primarily lexicalizing motion

Preposition	Dynamic	Static	Number	Index of dynamicity
1. Through	511	8	519	0.985
2. Onto	1074	40	1114	0.964
3. Into	588	43	631	0.932
4. To	408	38	446	0.915
5. Under	38	5	43	0.884
6. Toward	528	76	604	0.874
7. Out	189	33	222	0.851
8. Out of	446	86	532	0.838
9. From	329	81	410	0.802
10. Over	186	113	399	0.717
11. By	31	15	46	0.674
12. Along	360	217	577	0.624
13. Across	380	253	633	0.600
14. Between	66	99	165	0.400
14. In	40	206	246	0.163
16. At	74	394	468	0.158
17. Outside	115	618	733	0.157
18. Inside	177	961	1138	0.156
19. On	40	230	270	0.148

Table 1: Index of dynamicity for English prepositions in concrete usages

causation, such as *throw, push, carry*) and Non-Motion Verbs (such as *hit*, *punch*, *crash*). Rohde observed in her corpus data that in 99.6% of the cases of the Caused Motion Construction, at least one of the following conditions are met:

(4) a. The verb is a Motion Verb
b. The preposition's index of dynamicity is higher than 0.5.

From this data, we can see that the vast majority of the Caused motion Constructions already include the sense of Motion in the verb and/or the preposition, quite unlike Goldberg's idea that the sense of Motion is derived from the construction itself.

2.2 Verb Classes

Levin (1993, Ch. 9) categorize certain verbs into **putting verbs**, which are in fact verbs that frequently occur within the Caused Motion Construction. Based on her analysis, we can categorize the putting verbs into those occurring with *in/on* NP (as the OBL) and those occurring with *into/onto* NP.

Based on Table 2, we see that verbs that can be used with *in/on* share something in common: they all imply a goal. Putting, pouring, spraying, loading, and laying all imply that something is put/poured/sprayed/loaded/laid in a goal. The verbs that only allow *into/onto*, on the other hand, do not imply a goal: one can squeeze a ball or lift a book without the intention to place it anywhere.

Class	Examples	in/on(to?)
Put verbs	put, place, set, stow	in/on/into/ onto
Pour verbs	pour, drip, spill, spurt	in/on/into/ onto
Spray-Load Verbs	spray, load, cram, stack	in/on/into/ onto
Funnel verbs	funnel, push, squeeze, wipe	into/onto
Verbs of Putting with a Specified Direction	drop, lift, lower, raise	into/onto
Verbs of putting in a Spatial Configuration	lay, hang, dangle, stand	in/on

Table 2: Putting verbs and co-occurring prepositions

In order for the goal to be the result of an action, there are two logically possible scenarios: one, a theme is moved towards the goal (coercive causation), and two, a theme already in contact with the goal and it is permitted to remain that way (permissive causation). The verbs that allow *in/on* in Table 2 all entail coercive causation, thus they all entail motion. This is not the case for the verbs that do not allow *in/on*, however. Because the verbs that do not entail coercive causation (by corollary) do not entail motion towards the goal, they require *onto/into* (which are highly dynamic prepositions, according to Rohde's analysis) to represent dynamicity towards the goal. From this fact, we discover that either the verb or the preposition must represent motion towards the goal in order for the Caused Motion Construction to represent motion, which leads us to reason that the motion is not represented by the construction per se but by its components.

3 Arguments against Goldberg's polysemy

3.1 *Leave*-verbs

Not all instances of the construction imply motion, as Goldberg herself has noted. Sentences such as those in (5) does not imply that she has moved.

(5) He kept her at arm's length.

Goldberg's approach to cases like (5) is that Caused Motion is polysemous and it can also mean X PREVENTS Y FROM MOVING COMP(Z), where COMP(Z) is the complement of the potential motion. (5), according to her definition, would be defined as (6):

(6) He keep-prevented her from moving beyond arm's length.

Consider, however, (7):

(7) a. I kept the box in the room.
b. I left the book on the table.

In (7), none of the themes move anywhere. The interpretation of (7), according to Goldberg (p. c.), would be also X PREVENTS Y FROM MOVING COMP(Z). However, if we look at (8), we can see that this interpretation does not hold.

(8) a. *I keep-prevented the box from moving out of the room.
b. *I leave-prevented the book from moving off the table.

(8) is nonsensical since (7) does not imply that the themes has an "inherent tendency to move" like what is presupposed in the PREVENT definition (Goldberg, 1995, p. 162). In (7a), the box does not have an inherent tendency to move out of the room, and in (7b), the book does not have any tendency to move off the table. Thus, there is no motion to "prevent" in (7).

Although Levin did not include these *leave*-verbs into his category of verbs of putting, they are in fact frequently used verbs of placement. The fact that they do not imply motion of the theme nor the prevention of it leads us to reject the argument that the "Caused Motion" Construction necessarily entails motion.

3.2 Non-Verbal Definition

As mentioned in the introduction, we propose that the verbal sense of the Construction (CAUSE TO MOVE) should be discarded and the Construction should be redefined as only assignments of semantic roles to its syntactic components. Thus, it is semantically (9):

(9) a. SUBJ → agent
b. NP1 → theme
c. OBL → goal

It is identical to Goldberg's definition, except that the imposition of CAUSE-MOVE on the verb is omitted.

This definition has two advantages. First, it can overcome the fallacy of (7-8): discarding the PREVENT definition, we can spell out (7) as follows:

(10) a. [AGENT I] kept [THEME the box] [GOAL in the room].
b. [AGENT I] left [THEME the book] [GOAL on the table].

Without the sense of motion, (10) has no logical contradiction, since the verbs (*keep* and *leave*) denote **permissive causation** and their function is to let the themes remain in the goal. There is no need for motion or the prevention of it.

Second, it can also discard the unnecessary polysemy of the construction proposed by Goldberg, shown in (11-13) (Goldberg, 1995, pp. 161-162)

(11) 'X ENABLES Y TO MOVE Z'.
a. Sam allowed Bob out of the room.
b. Sam let Bill into the room.

(12) 'X HELPS Y TO MOVE Z'.
a. Sam helped him into the car.
b. Sam assisted her out of the room.

(13) THE CONDITIONS OF SATISFACTION ASSOCIATED WITH THE ACT DENOTED BY THE PREDICATE ENTAIL: 'X CAUSES Y TO MOVE Z'.
a. Sam ordered him out of the house.
b. Sam asked him into the room.

Based on the non-verbal definition, the polysemous extensions (11-13) become unnecessary. The

senses ENABLE, HELP, and SATISFACTION-ENTAIL are **represented by the verb, not the construction**. In (11), *allow* and *let* already denote enabling; In (12), *help* and *assist* by themselves represent helping; and in (13), *order* and *ask* already imply that the satisfaction associated with ordering or asking entails the happening of what is ordered or asked. So there is absolutely no reason for the Construction to impose on the verbs the sense already encoded by the verbs, unless there is an *a priori* reason to presuppose that the sense of the Construction is inherently verbal in nature. If we discard this verbal presupposition, we no longer need the ad hoc argument presented as (11-13).

4 Conclusion

In this paper, we have observed that, if we revise the definition of the so-called "Caused Motion" Construction from a verbal definition (CAUSES TO MOVE) into a non-verbal one, then the fallacy and the ad-hocness of verbal definition can be overcome. The Construction does not entail motion, nor is it able to conveniently change its meaning into enabling, helping, or preventing whenever necessary. The non-verbal definition, which would rename the Construction as **Goal-Assigning Construction**, is a simpler definition, structurally and logically.

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