

# Secondary Agent Constructions from the Perspective of the Motion Inherent to Manner-of-Action

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**Abstract:** Causative use of manner-of-motion verbs is called “secondary agent construction” (SAC). SACs have quite different properties from transitive use of “causative alternation.” Firstly, the subject referent must accompany the movement of the object referent throughout the motion event. Secondly, occurrence of a directional phrase is obligatory. This study aimed to account for these SAC properties from the perspective of motion inherent to manner-of-action. Verbs of manner-of-motion (e.g., *walk*) and manner-of-contact (e.g., *hit*) both entail motion. A walking event implies a walker’s location change, and a hitting event presupposes a hitter’s movement (of a body part). Manner-of-contact verbs can take an object that denotes an entity accompanying the movement of the subject referent, as in *John hit the stone against the wall*. This sentence means that John, holding the stone in his hand, brought it into contact with the wall. Importantly, this accompaniment interpretation is available only in the directional phrase’s presence. I propose that motion inherent to manner-of-action is responsible for the accompaniment interpretation and the directional phrase’s obligatory occurrence, and I also show that the same mechanism underlies SACs.

**Keywords:** Secondary Agent Constructions, Induced Action Alternation, Causative Alternation

## 1. Introduction

The transitivity alternation in example (1) is called “causative alternation” (Levin (1993)).

- (1) a. The ball dropped.  
b. John dropped the ball.
- (2) a. The vase broke.  
b. John broke the vase.

Sentences (1a) and (2a) involve a transitive verb, and sentences (1b) and (2b) involve an intransitive verb. In causative alternation, the object NP of the transitive variant appears in the subject NP position in the intransitive variant. In the pair in (1), for example, the object *the ball* of the transitive verb *drop* (1b) occurs in the subject position of the intransitive alternant (1a).

Manner-of-motion verbs (e.g., *walk* and *run*) also show transitivity alternation, as in (3), (4) and (5) although this type of alternation is distinguished from causative alternation (Levin and Rappaport (1995)).

- (3) a. The guests walked to the door.  
b. John walked the guests to the door.
- (4) a. Mary danced across the ballroom.  
b. John danced Mary across the ballroom.
- (5) a. The kids swam across the lake.  
b. The instructor swam the kids across the lake.

((3b), (4b), and (5b) in Zubizarreta and Oh (2007: 146))

Transitivity alternation associated with manner-of-motion verbs is called “induced action alternation” (Levin (1993)), and the causative use of manner-of-motion verbs (e.g., (3b), (4b), and (5b)) is called a “secondary agent construction” (SAC; Kudrnáčová (2013)). SACs have properties quite different from transitive use of causative alternation verbs.

Semantically, the referent of the subject NP must accompany the movement of the referent of the object NP throughout the motion event.

- (6) # John walked Mary home, but he didn't walk with her. (Tanaka and Minami (2008: 116))

The part *John walked Mary home* implies that he accompanied her on their way to the home, but the part *but he didn't walk with her* contradicts this implication, so this sentence becomes unacceptable.

Syntactically, the occurrence of a directional phrase is obligatory.

- (7) John walked Mary #(home). (Tanaka and Minami (2008: 111))

This sentence becomes unacceptable if the directional phrase *home* is omitted.

This study accounts for these SAC properties from the perspective of motion inherent to manner of action, which is exemplified by verbs of manner-of-motion (e.g., *walk* and *run*) and verbs of manner-of-contact (e.g., *hit* and *pound*). Both entail movement. The walking event implies the change of location of a walker, and the hitting event presupposes the movement (of a body part) of a hitter. Like SACs, manner-of-contact verbs can take an object that denotes an entity accompanying the movement of the subject referent, as in (8).

- (8) John { hit / knocked / beat / pounded } the stone #(against the wall).

This sentence means that John brought the stone into contact with the wall, holding it in his hand. Importantly, this accompaniment interpretation is available only in the directional phrase's presence. I propose that the object NP and the directional phrase that occur with transitive use of manner-of-contact verbs constitute a small clause structure. I show that this structural analysis explains the accompaniment interpretation and a directional phrase's obligatory occurrence in transitive use of manner-of-contact verbs and that the same mechanism underlies SACs as well.

This paper's organization is as follows. Section 2 investigates semantic and syntactic characteristics of manner-of-contact verbs and proposes syntactic analysis based on a small clause structure. Section 3 shows that this analysis can be applied to SACs and accounts for their semantic and syntactic characteristics from the perspective of motion inherent to manner of action. Section 4 addresses transitive use of manner-of-motion verbs that do not exhibit these two characteristics. Section 5 provides concluding remarks.

## 2. Manner-of-Contact Verbs and Two Types of Small Clauses

Manner-of-contact verbs can take an object NP, usually construed as the target of hitting if no directional phrase accompanies it, as shown by (9).

- (9) a. John hit the wall.  
b. John beat the wall.

In sentence (9a), for example, the wall is the target of hitting.

If the object NP of manner-of-contact verbs is followed by a directional phrase, however, the object is construed as an entity that moves along the path denoted by the directional phrase, as shown by the following sentences.

- (10) a. John hit the hammer against the wall.  
b. John beat the stick against the wall.

In these sentences, the object NPs *the hammer* and *the stick* are construed as entities held by John and brought into contact with the wall. The hammer and the stick are not themselves targets of hitting. Since object NPs of these sentences are interpreted as manipulated by John, we refer to such sentences as “manipulated-object constructions.”

Manipulated-object constructions have two important characteristics. Firstly, the hammer and the stick’s movements in (10) are closely associated with the verbs’ meaning. Manner-of-contact verbs imply movement from one place to another. In this paper, we refer to movement implied by manner-of-contact verbs as “motion inherent to manner of action.” Directional phrases in (10) are predicated of the object NPs and further specify motion inherent to manner of action denoted by the verbs. Consequently, the hammer and the stick are interpreted to accompany John’s movements in (10). This type of motion differs from motion exemplified by the following example.

- (11) John hit the ball into the air.

This example includes a directional phrase, but this phrase’s function is not the same as that of directional phrases in (10). Example (11) means that John hit the ball with something, such as a bat, and the ball traveled into the air. Here, we call this type of sentence a “caused-motion construction.”

A second important characteristic of manipulated-object constructions of manner-of-contact verbs is that a directional phrase’s occurrence is necessary to retain the accompaniment interpretation. Observe the contrast between (12a) and (12b).

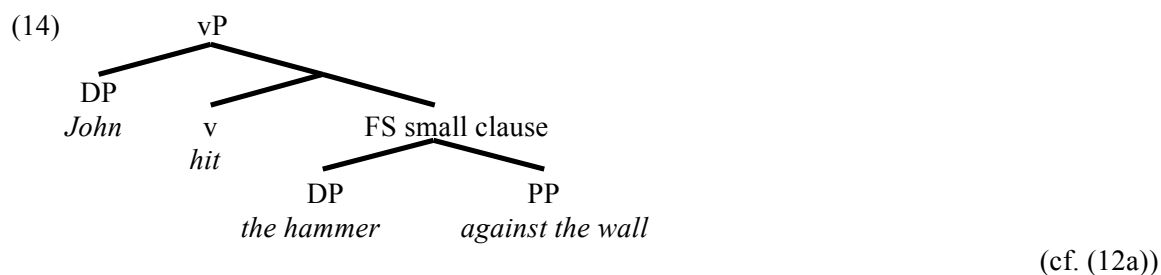
- (12) a. John hit the hammer against the wall. (= (10a))  
 b. John hit the hammer.

Interpretation of the object NP of sentence (12a) differs from that of the object NP of sentence (12b). In (12a), the hammer moves along with the movement of John’s body part. In (12b), on the other hand, the hammer is the target of John’s hitting, so it is not construed as moving along with John’s movement of a body part. In contrast, the interpretation of the object NP in (11a) and (11b) is the same irrespective of the presence or absence of a directional phrase. Sentence (13a) is a caused-motion construction.

- (13) a. John hit the ball into the air. (= (11))  
 b. John hit the ball.

In (13a), the object NP is construed as the target of John’s hitting. The same interpretation of the object NP holds even if the directional phrase disappears, as shown in (13b).

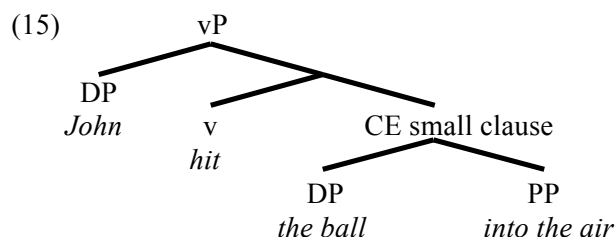
In this way, manipulated-object constructions of manner-of-contact verbs in (10) differ from caused-motion constructions of manner-of-contact verbs. Manipulated-object constructions’ accompaniment interpretation of manner-of-contact verbs requires a directional phrase’s occurrence. Based on this observation, I propose that manipulated-object constructions of manner-of-contact verbs include a small clause structure, as illustrated by the following tree diagram.



In this structure, v denotes the event of John’s hitting, and the small clause the event of the hammer coming into contact with the wall. A further specification relation holds between the two events, so the event expressed by the small clause specifies the event denoted by the rest of vP. As a result, the hammer’s movement is construed as part of John’s movement, and the accompaniment interpretation

follows. The directional phrase serves as the small clause’s secondary predicate, and this explains the directional phrase’s obligatory occurrence.

This analysis implies at least two types of small clauses associated with manner-of-contact verbs. The type of small clause exemplified in (14) holds a further specification relation with the rest of the vP structure, so we specifically refer to this type of small clause as a “further specification” (FS) small clause. We could also posit a small clause structure for the caused-motion construction of a manner-of-contact verb in (13a). In this case, however, the small clause constituted by the object NP *the ball* and the secondary predicate *into the air* forms a cause-effect relation between the small clause and the rest of the vP structure. Thus, we call this type of small clause a “cause-effect” (CE) small clause, and the following tree diagram exemplifies this.



(cf. (13a))

This section showed that manipulated-object constructions of manner-of-contact verbs exhibit an accompaniment interpretation and require a directional phrase. I proposed two types of small clause structures, FS and CE, and showed that the directional phrase of a FS small clause further specifies motion inherent to manner of action denoted by verbs. I explained that the observed characteristics of manipulated-object constructions of manner-of-contact verbs can be attributed to FS small clause properties. In the next section, I argue that the FS small clause also underlies SACs and show that it can explain SACs’ semantic and syntactic characteristics.

### 3. An Account of SACs

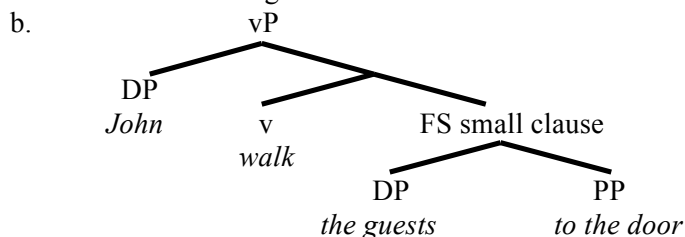
As demonstrated in section 1, SACs exhibit an accompaniment interpretation and necessitate a directional phrase’s occurrence, as shown by the following examples.

(16) # John walked Mary home, but he didn’t walk with her. (= (6))

(17) John walked Mary #(home). (= (7))

These two characteristics are shared with manipulated-object constructions of manner-of-contact verbs, so I propose that SACs include a FS small clause structure, and these characteristics can be attributed to this type of small clause.<sup>[1]</sup> The structure of (18a) is shown in (18b).

(18) a. John walked the guests to the door. (= (3b))



In the previous section, we observed that manner-of-contact verbs entail motion inherent to manner of action. Such motion meaning is shared with manner-of-motion verbs as well. Manner-of-motion verbs such as *walk* and *run* imply movement from one place to another in a specific manner. The verb *walk*, for example, means moving from one place to another by walking. The motion meaning entailed by manner-of-motion verbs can be confirmed by acceptability of a *how-far* interrogative sentence, which queries the distance a person moved.

- (19) a. How far did Sue walk?  
 b.\* How far did the bullet whistle?

(Folli and Harley (2006: 144))

The verb *walk* is compatible with a *how-far* interrogative sentence, as in (19a). The verb *whistle*, on the other hand, does not entail motion, so it cannot accompany such an interrogative sentence, as in (19b).

Based on this observation, the directional phrase that follows the intransitive use of manner-of-motion verbs further specifies the motion event denoted by the verbs.

- (20) a. John { walked / ran } along the street.  
 b. John { hit / pounded } against the wall.

Sentence (20a) means that John moved along the street by walking or running. Levin and Rappaport (1999) observe that in a sentence such as (20a), the event expressed by the manner-of-motion verb and that designated by the directional phrase constitute a single event. This observation aligns with this analysis that the manner-of-motion verbs *walk* and *run* inherently entail a location change, which is further specified by the directional phrase *along the street*. The same is true of the sentence in (20b), which includes manner-of-contact verbs. The motion event denoted by the directional phrase *against the wall* specifies events denoted by the verbs *hit* and *pound*.

The analysis in (18b) presents a unified account of SACs' two exhibited characteristics. As sentence (16) shows, the referent of the object NP is construed to accompany the subject participant's movement. The manner-of-motion verbs *dance* and *swim* also exhibit the same characteristic, as shown by the examples in (21).

- (21) a. John danced Mary across the ballroom. (= (4b))  
 b. The instructor swam the kids across the lake. (= (5b))

This semantic characteristic naturally follows from the assumption that SACs include a FS small clause. Since the motion event expressed by the small clause further specifies the motion event denoted by the verb, the object participant's motion must be included in the subject participant's motion. Consequently, the referent of the object NP must accompany the subject participant's motion. Another idiosyncratic characteristic of SACs is the obligatory occurrence of a directional phrase, as shown by (17) and (22)-(25).

- (22) a. John walked Mary to the station.  
 b.\* John walked Mary.  
 (23) a. The trainer ran the trainees around the field.  
 b.\* The trainer ran the trainees.  
 (24) a. John danced Mary to the other end of the ball-room.  
 b.\* John danced Mary.  
 (25) a. John swam the boy to the shore.  
 b.\* John swam the boy.

(Kudrnáčová (2013: 33))

The directional phrase requirement can also be explained by assuming that SACs involve a small clause structure. SACs' directional phrases serve as secondary predicates of small clauses, so their occurrence is obligatory. In this way, the two SAC characteristics can be attributed to the properties of a FS small clause structure.

Another characteristic of SACs is that they can take an object NP that refers to an inanimate entity that cannot be conceived of as moving in a manner specified by the verb

- (26) a. John walked the bicycle up the hill.  
 b. John walked the pram around the yard.

(Kudrnáčová (2013: 110))

Sentence (26a), for example, describes a situation in which John moved the bicycle up the hill by pushing it while he walked. The object NPs in (26) are inanimate entities, so they cannot themselves walk. In fact, these inanimate NPs cannot be legitimate subjects of the verb *walk*, as shown by the following examples, since *walk* requires as subject an animate entity that can itself walk.

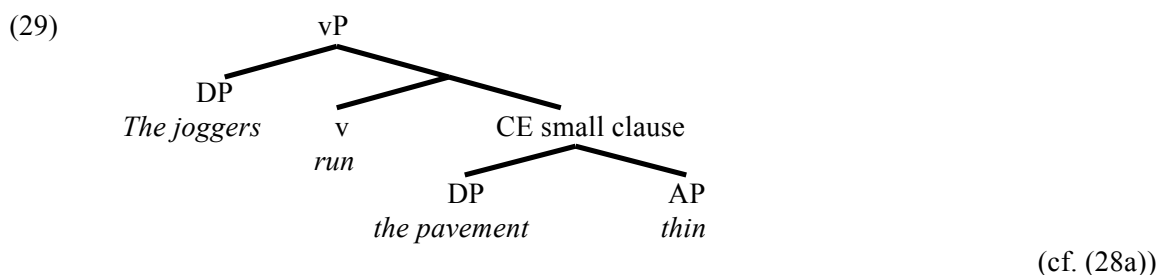
- (27) a.# The bicycle walked up the hill.  
 b.# The pram walked around the yard.

Since the object NP of SACs is selected by the secondary predicate of a FS small clause rather than by the verb, it does not have to refer to an animate thing. As a result, the object NP of SACs can refer to anything that accompanies the movement of the subject referent, as in (26).

In the previous section, I argued that there is another type of small clause, i.e., a CE small clause, in addition to a FS small clause, and showed that manner-of-contact verbs are compatible with either of them. Manner-of-motion verbs also permit either of these two types of small clauses. Examples in (24) illustrate manner-of-motion verbs combined with a CE small clause.

- (28) a. The joggers ran the pavement thin. (Levin and Rappaport (1995: 75))  
 b. Bill walked himself woozy. (Jackendoff (1990: 240))

For example, sentence (28a) means that the pavement became thin as a result of the joggers' running. Likewise, sentence (28b) describes a situation in which Bill became woozy as a result of his walking. Thus, in these sentences, there is a cause-effect relation between the events denoted by the verbs and those described by the small clauses. The structure of sentence (28a) is shown in (29).



So far, we have investigated SACs that include only manner-of-motion verbs, but motion verbs that signify an instrument of transportation can also participate in SACs, as shown by the following examples.

- (30) a. She { drove / flew / cycled / ferried / boated / sailed / motored } to New York.  
 b. Captain Mars { drove / flew / cycled / ferried / boated / sailed / motored } her to New York.  
 (Pinker (1989: 131))

The example in (30b) denotes that Captain Mars took her to New York by means of an action denoted by the verbs. In (30b), the subject participant must accompany the motion of the object participant, and a directional phrase is obligatory, as shown in (31).

- (31) \* Captain Mars { drove / flew / cycled } Mary for hours.  
 (Yasuhara, Kogusuri and Kudo (2011: 273))

These facts suggest that this SACs analysis can be applied not only to manner-of-motion verbs, but also to motion verbs that signify an instrument of transportation.

In summary, this section showed that motion inherent to manner of action is lexically included in manner-of-motion verbs, and it proposed that they can be combined with a FS small clause. This structural analysis explains the accompaniment interpretation and the obligatory occurrence of a directional phrase in SACs.

#### 4. Manner-of-Motion Verbs that Enter into Causative Alternation

Thus far, we have investigated transitive use of manner-of-motion verbs whose object participant moves along with the subject participant's motion. This section addresses transitive use of manner-of-motion verbs that do not show this accompaniment interpretation.

- (32) a. The general marched the soldiers to the tents.  
b. We ran the mouse through the maze.  
(Levin and Rappaport (1995: 111))
- (33) a. ... if you intend to fly the bird ...  
b. Are there any places close to home where you could walk the dog and get out into the country-side?  
(Davidse and Geyskens (1998: 171))

Sentences in (32) describe a situation in which the subject agent made the object participant do the action denoted by the verb. Sentences in (33) mean that the subject participant let the animal referred to by the object NP do the action expressed by the verb. In both cases, the subject participant neither does the action denoted by the verb, nor accompanies the object participant's motion, as opposed to the condition in SACs.

These two characteristics' absence suggests that transitive sentences such as (32) and (33) are transitive variants of causative alternation of manner-of-motion verbs because causative alternation pairs such as (34) and (35) do not exhibit these two characteristics.

- (34) a. The ball dropped.  
b. John dropped the ball.
- (35) a. The vase broke.  
b. John broke the vase.  
(= (1), (2))

In sentence (34b), for example, the subject participant does not have to accompany the motion of the object participant, and the verb is predicated of the object NP rather than the subject NP. In this way, the transitivity alternation in (36) and (37) can be treated in a parallel fashion with the causative alternation in (34) and (35).

- (36) a. The soldiers marched to the tents.  
b. The general marched the soldiers to the tents.
- (37) a. The mouse ran through the maze.  
b. We ran the mouse through the maze.  
(Levin and Rappaport (1995: 111))

Furthermore, sentences such as (32) and (33) do not require a directional phrase, as Tanaka and Minami (2008) observe.

- (38) a. The general marched the soldiers to the tents, but he didn't march with them.  
b. The general marched the soldiers.
- (39) a. The trainer ran the athletes around the field, while he was just watching over them (he didn't run with them).  
b. The trainer ran the athletes.  
(Tanaka and Minami (2008: 111–112))

Directional phrases in sentences in (38a) and (39a) can be omitted, as shown in (38b) and (39b).

Based on these observations, I suppose that the examples of the transitive use of manner-of-motion verbs considered in this section are transitive variants of causative alternation pairs of manner-of-motion verbs.

The distinction between the transitive variant of SACs and that of causative alternation pairs of manner-of-motion verbs can be further supported by thematic interpretation of the object NP.

- (40) a. John walked the letter to the post office.  
b.\* What John did to the letter was walk it to the post office.  
(41) a. The scientists ran the rats through the maze.  
b. What the scientists did to the rats was run them through the maze.

(Yasuhara, Kogusuri and Kudo (2011: 273))

The frame “What X did to ... was ...” is a traditional test for patienthood (Jackendoff (1990)). In SACs, the object NP is selected by a secondary predicate rather than by a verb, so the object NP is not conceived of as directly affected by the subject participant, as illustrated by the unacceptability of (40b). The object NP of the transitive variant of causative alternation pairs of manner-of-motion verbs, on the other hand, is selected by the verb, so it is conceived of as the patient argument of the verb, as shown by (41b).

In summary, this section revealed that transitive use of manner-of-motion verbs can be divided into two types, SACs and the transitive variant of causative alternation pairs of manner-of-motion verbs. They differ in the presence or absence of an accompaniment interpretation, the necessity of a directional phrase, and the patienthood of the object NP.

## 5. Conclusion

This paper provided a structural analysis of manipulated-object constructions and applied the analysis to SACs, showing that it can account for SACs’ semantic and syntactic characteristics. Some instances of the transitive use of manner-of-motion verbs do not exhibit these characteristics, but they were shown to be a transitive variant of causative alternation pairs of manner-of-motion verbs.

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## Notes

[1] Folli and Harley (2006) also provide a small clause analysis of SACs, but our analysis differs in that we assume a further specification relation between the small clause and the rest of the vP structure.

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