

A Semantic Approach to Induced Action Alternations

Masaki Yasuhara, Shun Kudo, and Tetsuya Kogusuri

This study deals with the transitive use of manner of motion verbs such as *march*, *run*, *walk*, etc. They have transitive and intransitive uses, named as Induced Action Alternation (Levin (1993)), as shown in (1):

- (1) a. We ran the mouse through the maze.
b. The mouse ran through the maze.

(Levin and Rappaport (1995:111))

In the both sentences, it is the mouse that ran through the maze. In the transitive sentence in (1a), the verb is predicated of the object referent. We will call this type of transitive sentences the object predicated constructions (hereafter, OPCs).

There is another case, however, where the manner of motion verbs in the transitive use are predicated of the subject referents, as in (2a):

- (2) a. Laura walked her bicycle to the university. (Tenny (1989:226))
b. #Her bicycle walked to the university.

In transitive sentence (2a), contrary to (1a), it is the referent of the subject NP that walked to the university. In fact, sentence (2a) cannot be paraphrased into intransitive sentence (2b). We will refer to this type of transitive sentences as the subject predicated constructions (hereafter, SPCs). Thus, transitive sentences with manner of motion verbs can be associated with two distinct constructions.

In this research, we propose that OPCs and SPCs are distinct both syntactically and semantically. Given the proposal, we can give a unified account of the certain syntactic and semantic characteristics of the two constructions.

In connection with the distinction between the constructions, Ritter and Rosen (1998) propose an interesting analysis: the OPCs and SPCs are derived from the distinct underlying structures. That is, in the OPC such as (3a), the matrix verb *jump* takes the object *the lion* as its argument, whereas, in the SPC like (4a), it is the subject *John* that the verb *walk* lexically subcategorizes for. This is confirmed by the existence of the corresponding intransitives (3b) and (4b), in which the arguments lexically specified by the verbs stand as the subjects:

- (3) a. John jumped the lion through the hoop.
b. The lion jumped through the hoop.

- (4) a. John walked {Bill / the letter} to the dean's office.
 b. John walked to the dean's office.

Furthermore, Ritter and Rosen (1998) argue that the directional phrases in the OPCs and SPCs syntactically license the subject NP and object NP, respectively. This assertion is confirmed by the following paraphrases of (3a) and (4a), which illustrates that the action of the syntactically licensed NP is undetermined:

- (5) a. John did something and thereby the lion jumped.
 b. John walked and thereby got {Bill / the letter} to the dean's office.

In (5a), the paraphrase of (3a), the action performed by *John* is undetermined. On the other hand, in (5b), the paraphrase of (4a), no particular information is specified as to how the object NP got to the dean's office. Thus, they propose that OPCs and SPCs are different in terms of which argument is subcategorized for by the matrix verb and which is syntactically licensed by the directional phrase.

According to this proposal, it is predicted that the two syntactically distinct constructions OPCs and SPCs require the occurrence of the directional phrase to form the transitive structures, which can be confirmed by the following observation:

- (6) a. We ran the mouse through the maze. (= (1a))
 b. *We ran the mouse. (Levin and Rappaport (1995:111))
 (7) a. John walked {Bill / the letter} to the dean's office. (= (4a))
 b. *John walked {Bill / the letter}. (Ritter and Rosen (1998:135))

The absence of the directional phrase is unacceptable in both constructions. Thus, in Ritter and Rosen's (1998) proposal, the derivations of both OPCs and SPCs presuppose the occurrence of the directional phrase.

However, OPCs without the directional phrase are also observed, as in (8):

- (8) a. He walked a sick man. (Maruta (2000:210))
 b. The doctor walked the wounded Patient (for rehabilitation).
 (Kanemoto (1999:35))

These are problematic for the Ritter and Rosen's (1998) analysis, because no directional phrase appears in (8). In this respect, Kanemoto (1999:35) points out that, in OPCs, when the patienthood of the object referent is ensured, the directional phrase is omissible, as shown in (9):

- (9) a. The general marched the soldiers {without mercy / for hours}.
 b. The general marched the soldiers with an arrogant manner.

Here, *without mercy*, *for hours* and *with an arrogant manner* ensure the patient status of the referents denoted by the object NPs, which allows the lack of directional phrases. In SPCs, on the other hand, the directional phrase is not omissible even though this kind of adverbial phrases are involved, as in (10):

- (10) a. *John walked the bicycle very hard.
 b. *Captain Mars {drove / flew / cycled} Mary for hours.

Based on the contrast in (9-10), we propose that OPCs and SPCs are different semantically as well as syntactically: the objects in OPCs and SPCs are distinct in terms of the semantic roles. The different roles of the object NPs in them can be attested by the *do to* test, a diagnostic for the patienthood (Jackendoff (1990)).

- (11) a. The scientist ran the rats through the maze.
 b. What the scientist did to the rats was run them through the maze.
 (12) a. John walked the letter to the post office.
 b. #What John did to the letter was walk it to the post office.

The OPC is compatible with the *do to* test, as in (11b), while the SPC is not, as in (12b). The fact that only OPCs are compatible with this test demonstrates that the object of this construction must be a patient, while the object of SPC does not involve the patienthood. Then, what semantic role can be attributed to the object of the SPC?

According to Ritter and Rosen (1998:158), the SPC in (13a) can be paraphrased into sentence (13b), where the NP *the letter* which appears as the object in (13a) is expressed with a *with* phrase:

- (13) a. John walked the letter to the dean's office.
 b. John walked to the dean's office with the letter.

Sentence (13b) describes the situation where the letter moves to the dean's office along with John's walking. From this paraphrase, we can attribute a theme role to the object in (13a), in the sense that it is a moved entity along with John's walking.

From the above observations, we can argue that the object NP in the OPC has a patient role, whereas the SPC has a theme object. This difference leads us to

claim that OPCs and SPCs have totally distinct semantics and syntax. In fact, this is supported by two pieces of empirical evidence. The first evidence comes from the contrast in acceptability with respect to the coordination test:

- (14) a. #The guard walked the prisoner and the bicycle to the jail.
 b. ??Captain Mars flew Mary and the plane to New York.

A single verb cannot give distinct meanings to the respective coordinated object NPs (cf. Ritter and Rosen (1996:35 fn.5)). Sentence (14a), for example, cannot represent the situation where the guard caused the prisoner to walk to the jail, while the guard walked there with the bicycle. The same holds of the sentence in (14b). The fact that the object NPs which have distinct semantic roles cannot be coordinated suggests that OPCs and SPCs are semantically distinct constructions.

Another piece of evidence for the distinction of the two constructions is concerned with the syntactic diagnostic known as *do so* substitution. When the object referent can be characterized as a theme, the VP including it cannot be replaced by *do so*, as illustrated in (15):

- (15) *John will put the book on the table, and Paul will do so on the chair.
 (Radford (1997:234))

Likewise, the VP of SPCs, which has the theme object, cannot be replaced by *do so*, while that of OPCs, which object has the patient role, can be replaced, as in (16-17):

- (16) a. ?John walked a letter to the post office and Ben did so to the church.
 b. *John drove Mary to the station yesterday, and Tom did so there today.
 (17) a. The American scientist ran the rats through the large maze, but the Japanese scientist did so through the small maze.
 b. The old jockey jumped the horse over the board fence, but the young jockey did so over the iron fence.

This difference in terms of the *do so* substitution shows that the OPCs and SPCs are distinct constructions syntactically as well as semantically.

In conclusion, OPCs and SPCs are distinct constructions in both semantics and syntax. As for semantics, OPCs have the patient object, whereas the object of SPCs is assigned the theme role. With respect to the syntax, OPCs do not require the occurrence of the directional phrase when the patienthood of the object is emphasized, whereas, in SPCs, the occurrence of the directional phrase is obligatory.