Semantic Merger of Ownership Change and Spatial Motion in the English Ditransitive Construction: An Alternative View to Conceptual Semantics

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Abstract

In this paper we will examine the nature of a semantic field for the ditransitive construction in English. In Conceptual Semantics it is implicitly assumed that one event or state belongs to one simple semantic field. I will call it the "simple semantic field" hypothesis. The ditransitive construction, however, exhibits behaviors which suggest the event described does not correspond to one simple semantic field. Rather in that case it is reasonable to consider that two semantic fields are merged. This will be called the "merged semantic field" hypothesis. Semantic field merger is motivated by a general process in human conceptualization, i.e., metonymy. Our motivation view of semantic field merger makes a different empirical prediction from the stipluatory view according to which the merged field is stipulated in the 'universal grammar' in the same way as other simple fields.

1 Introduction

Recent conceptual-oriented semantic theories share the view that a concept encoded by a linguistic expression cannot be characterized without reference to a broader conceptual domain. Any definition of linguistic meaning necessarily depends on the conceptual domain, which is called in various temrs such as a frame ([1]), a domain ([2]; [3]), and a semantic field ([4], [5]; [6]). The present paper examines the nature of the conceptual domain for the ditransitive construction in English[1].

One of the most detailed analyses of the English ditransitive construction semantics at the present time is that of Pinker([6]) or Jackendoff([5]), both of which is made within the framework of Conceptual Semantics([4], [5]). In this theory it is implicitly assumed that an event or a state has to be assigned one simple semantic field. This entails that if events or states differ with respect to the semantic field, they are necessarily identified as different events or states.

This assumption will be called the 'simple semantic field' hypothesis. Examining the nature of the semantic field of the ditransitive expressions, I will argue that it is reasonable to recognize a cognitive process of merging sematnic fields[2]. I will call this idea the 'merged semantic field' hypothesis.

In the next section I will survery the basic device of Conceptual Semantics and examine Pinker's and Jackendoff's particular analyses of the distransitive construction respectively. In section 3, I will point out how they fail to account for the meaning of the distransitive construciton and why they do so. In the final section as an alternative analysis I will offer the 'merged semantic field' hypothesis and then discuss a cognitive motivation for the merger of semantic fields.

2 The Conceptual Semantic analyses

2.1 The basic organization of Conceptual Semantics

First of all, we will take a brief look at the basic machinery of Conceptual Semantics which will be particularly relevant for the following argument. In the theory the meaning of an expression is identified with a conceptual structure[3]. The conceptual structures attainable by a human being are specified by universal conceptual well-formed rules. Some of them will be shown in (1):

(1) a. $\text{EVENT} \rightarrow [_{\text{Event}}\text{GO}([_{\text{Thing}}\ x\ ], [_{\text{Path}}\ y\ ])]$

b. $\text{STATE} \rightarrow [_{\text{State}}\text{HAVE}([_{\text{Thing}}\ x\ ], [_{\text{Thing}}\ y\ ])]$

c. $\text{PATH} \rightarrow [_{\text{Path}}\left\{\begin{array}{c}\text{TO}\\ \text{FROM}\end{array}\right\}([_{\text{Thing}}\ x\ ])]$

The conceptual categories EVENT and STATE are marked with a particular semantic field feature(e.g., spatial, temporal, possessive, etc.([4, Ch. 9 and Ch. 10])). Following Gruber([7]), Jackendoff proposes that there are particular schematic structures common across semantic fields. The structures for concepts of spatial location and translational motion are generalized in a quasi-metaphorical way to the other semantic fields. This is called the Thematic Relation Hypothesis, formulated as in (2):

(2) **the Thematic Relation Hypothesis**
In any semantic field of EVENTs and STATEs, the principal event-, and state-, path-, and place-functions are subsets of those used for the analysis of spatial location and motion. Fields differ in only three possible ways:

a. what sorts of entities may appear as theme;

b. what sorts of entities may appear as reference objects;

c. what kind of relation assumes the role played by location in the field of spatial expressions.

([4, p. 188])

In Coceptual Semantics the spatial and the possessive fields are subject to (2), so spatial EVENTs or STATEs and possessive EVENTs or STATEs are analyzed as structurally parallel. Jackendoff characterizes the possessive field like (3):

(3) **the possessive field**:

a. THINGs appear as theme.

b. THINGs appear as reference object.

c. Being alienably possessed plays the role of location; that is, "y has/ possesses x" is the conceptual parallel to spatial "x is at y."
([4, p. 192])

For example, the sentence *Anny gave the doll to Beth* will be analyzed as meaning that "Anny caused the doll to go to Beth in the possessive sense."

2.2 Pinker(1989)'s analysis

In Pinker([6, p. 211])'s view the prepositional dative construction means 'x causes y to go to z in a possessive sense; on the other hand, the ditransitive construction means 'x causes z to have y.' In his descriptive system sub-events or -states are linked by one of causal subordinators which are universally specified[4]. In the ditransitive construction the main event is Agent's acting upon the Patient/Possessor and the subordinated event is the latter's possession of the gift. Thus its semantic structure will be:

(4) $\left[\begin{array}{l}[_{\text{Event}}\text{ACT}_{\text{possessive}}([\text{ Bob }]_{\text{A}},[\text{ Sue }]_{\text{A}})] \\ [\text{EFFECT}[_{\text{State}}\text{ HAVE}([\text{ Sue }],[\text{ ring }])]]\end{array}\right]$

We note two characteristics in the conceptual structure of (4). First, in the ditransitive construction the Patient role is assumed by the new possessor(Sue in (4)) since in Pinker's system that role is defined as the second argument of the ACT function. Second, what is caused by the first event is the possession state, as is shown by the fact that it takes the HAVE function. Thus, we may say that, if Pinker's analysis is correct, the ditransitive construciton does not imply any type of translational motion, whether possessive or spatial.

2.3 Jackendoff(1990)'s analysis

Jackendoff notes that verbs which take the double-object complement consist of two classes; they exhibit different behaviors with respect to (a) whether the Goal argument can be marked by a preposition other than *to* in the prepositional dative structure and (b) which argument is optional in the ditransitive structure:

(5) a. Sam threw/sent/kicked/hurled/hit the ball to Sandy/out the window/into the park/away. ([5, p. 198])

b. Adam gave a book/served a dinner/told a long story/paid $5 to Debbie/*out the window/*down the road/*into the fire. ([5, p. 198])

(6) a. Sam threw/sent/kicked/hurled/hit (Bill) the ball. ([5, p. 198])

b. i. Adam served Debbie (her dinner).
ii. Adam told Debbie (a long story).
iii. Adam paid Debbie ($5).
iv. *Adam gave Debbie (a book)[5]. ([5, p. 198])

From these contrasts Jackendoff concludes that verbs in the (b) examples above lexically encode ownership change while verbs in the (a) examples do not; rather they come to encode it through a general correspondence rule, named the Recipient NP Adjunct rule. Roughly speaking, this rule adds the structure [FOR[$GO_{possessive}$([ ], [ ])]] to the lexical conceptual structure of the verb and links the first and the second argument of $GO_{possessive}$ to the Theme argument and the Goal argument respectively in the spatial motion structure originally specified by the verbs[6]. For example, the conceptual structures of *give* and *throw* will be shown in (7) and (8) respectively:

(7) $$\begin{bmatrix} \text{CAUSE}([\ \alpha\ ], [\text{GO}_{\text{possessive}}([\quad]_{\text{A}}, [\text{TO}[\ \beta\ ]])]) \\ \text{AFF}^{+}([\quad]^{\alpha}_{\text{A}}, [\quad]^{\beta}_{\text{A}}) \end{bmatrix}$$

(8) $$\begin{bmatrix} \text{CAUSE}_{\text{launch}}([\ \alpha\ ], [\text{GO}([\ \beta\ ]^{\gamma}, [\text{TO}[\quad]^{\delta}])]) \\ \text{AFF}^{-}([\quad]^{\alpha}_{\text{A}}, [\quad]^{\beta}_{\text{A}}) \\ [\text{FOR}[\text{GO}_{\text{possessive}}([\ \gamma\ ], [\text{TO}[\ \delta\ ]])]] \end{bmatrix}$$

As is clear from (7) and (8), the *give*-type ditransitive construction encodes ownership change in terms of 'metaphorical' motion, and the *throw*-type ditransitive construction encodes spatial motion which causes ownership change that is also conceptualized as 'metaphorical' motion. Note that Jackendoff also does not think that spatial motion is involved in the semantics of the ditransitive construction of the *give*-type. However, it exhibits behaviors which suggest that spatial motion is involved there.

3 Ownership change and spatial motion in the ditransitive construction

The ditransitive construction can take an adjunct prepositional phrase which denotes a spatial path, as seen in (9):

(9) a. John gave Mary candy from his pocket.
b. Cobb handed a cold beer from the cooler ... (John Grisham, *A Time to Kill*, p. 2)

Note that in (9) the prepositional phrases are not an adnominal modifier since (a) they can be separated by an adverbial phrase from the preceding noun, (b) they can also be fronted to the sentence initial position, and (c) they can be excluded from a deictic noun phrase:

(10) a. John gave me candy quickly form his pocket.

b. ?From his pocket John gave me candy.

c. John gave me this from the bag and gave me that from his pocket.

In Pinker's descriptive system, the semantic structure of (9a) will be represented as in (11):

(11)
$$\left[\begin{array}{l} [_{\text{Event}}\text{ACT}_{\text{possessive}}([\text{ John }]_{\text{A}}, [\text{ Mary }]_{\text{A}})] \\ [\text{EFFECT}[_{\text{State}}\text{HAVE}([\text{ Mary }], [\text{ candy }])]] \\ \left[\text{MEANS } \begin{array}{l}[_{\text{Event}}\text{ACT}_{\text{spatial}}([\text{ Mary }], [\text{ candy }]_{\text{A}})] \\ [\text{EFFECT}[_{\text{Event}}\text{GO}([\text{ candy }], [_{\text{Path}}\text{FROM}[\text{ pocket }]]_{\text{A}})]]\end{array}\right] \end{array}\right]$$

The semantic structure in (11), however, has problems. First, in (13) we have to stipulate an idiosyncratic meaning for the preposition *from*. The causal relation marked by the subordinator 'means' and the embedded events are introduced into the semantic structure of the ditransitive construction just when the prepositional phrase *from his pocket* is added. Thus the prepositional phrase corresponds to that part of the semantic structure. But the form-meaning correspondence is ad-hoc since the prepositional phrase headed by *from* is ordinarily associated with the PATH structure. Moreover, that special form-meaning correspondence seems to be found only in the ditransitive construction. If so, it is left unanswered why *from* expresses that complex meaning only when it occurs in the ditransitive construction. The second problem is concerned with the subordinate relation. In (11) the event which belongs to the spatial field is embedded in the event which belongs to the possessive field through the causal subordinator 'means.' But in similar cases ownership change and spatial motion events cannot stand in the same subordinate relation:

(12) a. *John gave Mary his car by driving it from his house.

b. *John gave Mary his book by shipping it to her office.

In Pinker's descriptive system, (12a) will be given the following semantic structure:

(13)
$$\left[\begin{array}{l} [_{\text{Event}}\text{ACT}_{\text{possessive}}([\text{ John }]_{\text{A}}, [\text{ Mary }]_{\text{A}})] \\ [\text{EFFECT}[_{\text{State}}\text{HAVE}([\text{ Mary }], [\text{ car }]_{\text{A}})]] \\ \left[\text{MEANS } \begin{array}{l}[_{\text{Event}}\text{ACT}_{\text{spatial}}([\text{ John }], [\text{ car }])] \\ [\text{EFFECT}[_{\text{Event}}\text{GO}([\text{ car }], [_{\text{Path}}\text{FROM}[\text{ house }]])]]\end{array}\right] \end{array}\right]$$

This semantic structure is the same as that in (11) in relevant respects: the event which belongs to the spatial field is embedded in the event which belongs to the possessive field by the subordinate relation of 'means.' Unlike (9a), however, (12a) is unacceptable. Since examples in (12) are grammatically well-formed and paragmatically the situations they describe are not so hard to imagine, they are unacceptable for some semantic reason. I will assume here that spatial motion simultaneously accompanied with ownership change cannot be subordinated by the 'means' relation. If it is correct, the semantic structure in (11), which may be the only possiblity under Pinker's descriptive system, cannot be well-formed. The third problem is that the ditransitive construction cannot cooccur with some spatial prepositional phrase, as in (14):

(14) *John gave Mary candy into her room.

The semantic structure assigned to (14) in Pinker's system may be the same as (11) except the Path function of the embedded spatial motion event. However, since the conceptual formation rules are context-free, any path phrase cannot prevent the structure from appearing. Therefore, the unacceptability of (14) cannot be accounted for in a principled way. So far we have discussed the problems for Pinker's analysis, but the same criticism applies to Jackendoff's analysis. In my view, these problems originate from the same source, i.e., their implicit assumption that evnets which belong to different semantic fields are individualized as different events and cannot be conceptualized as a single event. This assumption can be formulated as in (15):

(15) **The "Simple Semantic Field" Hypothesis**
A single event or state in a semantic structure must belong to a single simple semantic field.

In order to solve the problems discussed so far, I will examine an alternative possibility, i.e., the possibility that events which otherwise belong to different semantic fields are conceptually fused into a single events.

4 Semantic field merger and its cognitive motivation

If two events involve different kinds of relations, e.g., ownership change and spatial motion, yet occurs simultaneously and closely interrelate with each other in terms of the achievement of the purpose of the action, it is not unreasonable that a human conceptualizer does not individualize them as independent events but rather merges them into a single event. This amounts to what I call the "merged semantic field" hypothesis:

(16) **The "Merged Semantic Field" Hypothesis**
A single event in a semantic structure can belong to a single but non-simple semantic field, which is fomred by merging two different semantic fields.

Ownership change and spatial motion described in (9a) above occurs simultaneously and they are causally corelated with each other. In other words, they are temporally and causally overlapped. Thus on our account (9a) will be given the semantic structure as in (17):

(17) $$\left[\begin{array}{l} [\mathrm{CAUSE}([\mathrm{John}], [\mathrm{GO}_{\substack{\mathrm{poss}\\ \mathrm{spat}}}([\mathrm{candy}], \left[\begin{array}{l} [\mathrm{FROM}[\left\{\begin{array}{l}[\mathrm{John}]\\ [\mathrm{pocket}]_{\mathrm{A}}\end{array}\right\}]] \\ [\mathrm{TO}[\mathrm{Mary}]] \end{array}\right])))] \\ [\mathrm{AFF}^{+}([\mathrm{John}]_{\mathrm{A}}, [\mathrm{Mary}]_{\mathrm{A}})] \end{array}\right]$$

In (17) the event on the thematic tier belongs to the merged semantic field, i.e., the possessive/spatial field. Given this semantic structure, the first and second

problems in the preceding section will disappear. As shown in (17), the preposition *from* corresponds to the PATH structure [FROM[John/his pocket]] only. This is the same form-meaning association as is seen elsewhere. Furtheremore, since in (19) ownership change and spatial motion are not individualized as separate events, they need not be linked by a causal subordinator.

There is also independent eveidence for the merger of possessive and spatial fields. Thus consider:

(18) a. John took twenty dollars from Mary.

b. John took twenty dollars from Mary's wallet.

c. Someone stole the famous drawing from a collector in Chicago.

d. Someone stole the famous drawing from the house of a collector in Chicago.

As shown in (18), the verbs *take* and *steal* can take as their complement the spatial source phrase as well as the possessive source phrase. Even if they take the spatial source phrase, they still imply the (unlawful) causation of ownership change. This is exactly the same situation which we have seen in the ditransitive sentences like (9). The only difference between them is that *take* and *steal* is necessarily situated in the merged field as their lexical convention but *give* does not always belong to it since *give* may denote ownership change involving no spatial motion. Moreover, a phenomenon similar to what I call the semantic field merger is observed in the semantics of a noun. Lakoff([8, p. 74]) notes that the meaning of *mother* "is based on a complex model in which a number of individual cognitive models combine, forming a cluster model."

Evidence observed so far suggests the plausibility of semantic field merger. But why can semantic field merger take happen in the first place? Is there any motivation for it? First, consider the following examples:

(19) a. John gave his daughter a land.

b. John gave his daughter a house.

c. John gave his daughter a car.

d. John gave his daughter a computer.

e. John gave his daughter a rose.

All these examples imply ownership change in which John's (or some other person's) daughter received a gift from him. On the other hand, all of them do not equally imply spatial motion. (19a) may be impossible to interpret as implying spatial motion, yet as we go down further we will more easily get the interpretation and we naturally and preferentially understand that spatial motion is implied. In sentences like (19e) the concept of ownership change evokes that of spatial motion probably because, in our everyday experience, when giving a rose to someone, a person usually brings it to her or him. In that case we can say that ownership change and spatial motion stand in a 'contiguous' relation to each other.

The extension process by which a linguistic form come to encode a concept which is 'contiguous' to its original concept is frequently found. It may be called

metonymy since "the essence of metonymy resides in the possibility of establishing connections between entities which co-occur within a given conceptual domain"[9, pp. 123-124]. And the metonymic process proceeds gradually([10, p. 74]). Schematically the metonymic extension of a construction will be represented as in (20):

(20) a. F ——— M_1

b. F ——— M_1
|
M_2

c. F ——— M_1/M_2

d. F ——— M_2

F: a syntactic form of a construction
M: the inherent meaning of a construction or its pragmatic concomitant meaning

Suppose (20a) represents the first stage of metonymic extension, at which a construction form F only encodes its original inherent meaning M_1. The second stage is (20b), in which another concept M_2 is pragmatically implied from the original meaning, thus M_2 is associated to F through M_2. The third stage is shown in (20c), where association between F and M_2 has grown stronger and M_2 has become more integral to the construction. (20d) is the final stage, where the previous pragmatic concomitant itself has been conventionalized as the inherent meaning of the construction. Semantic field merger may be taken to occur around the stage of (20c)[7]. It is at this stage that two meanings are connected most closely. Here I will not argue that semantic field merger always occur in the metonymic extension. Instead I only claim that it takes places only if semantic fields to be merged are metonymically related. As to the ditransitive construction, the extension has not reached the final stage at present(e.g., (20a)). This means that M_2, i.e., the concept of spatial motion in the present case, has not yet completely acquired the status as the inherent constructional meaning. Thus, to an extent it is still dependent on M_1, the concept of ownership change. Therefore, a specificaiton of spatial motion in the ditransitive construction has to be harmonized with that of ownership change. It cannot be incompatible with what is implied with respect to ownership change in the construction. This will give an answer to the third problem pointed out in the preceding section, i.e., the unacceptability of the sentence **John gave Mary candy into her room.* As noted by Goldberg([12, p. 56]), the ditransitive construction implies that the recipient volitionally receives the gift. Thus in the context of the recipient's failure or refusal to receive the gift the ditransitive sentences will be bizarre:

(21) *John gave Mary a leaflet, but she didn't receive it.

From these it will follow that if we adjoin a prepositional phrase for the spatial goal to a ditransitive sentence, it must specify the location which is unambiguously understood as the location where the recipient actually gets the gift. Putting candy into her bag, however, does not imply that Mary actually received it. The same explanation will apply to other examples as in (22):

(22) a. *Bill gave John a sandwich to Bob. ([11, p. 370])

b. *John gave me a leaflet into my locker.

c. *John gave me a leaflet into my bag.

d. ?John gave me a leaflet into the pocket of my coat.

At the same time, our account will predict that the ditransitive construction can cooccur with the goal phrase if it surely and clearly imply the recipient's acceptance of a gift. This prediction turns out true as in (23):

(23) a. John gave Mary candy into her tiny hand.

b. John handed Mary a baby into her arms.

Hands or arms are the body parts which are typically used to receive an object. So putting something into these parts implies that the recipient has actually received it. Note that deriving the merged field on the basis of metonymy is different from the mere stipulation of it in the universal inventory of semantic fields. In the stipulatory approach it cannot be explained why (9) is completely acceptable and at the same time (14) and (22) are not and why (23) are acceptable unlike (14) and (23) since there is no reason why only the merged field, unlike the other fields, can make subtle distinctions with respect to the selection of the Path function and even its argument.

5 Conclusion

In this paper I examined the nature of the semantic field of the English ditransitive construction. I made two proposals. First, in the ditransitive construction the possessive and the spatial fields can be merged to form a single semantic field. Second, the merging process is motivated by metonymic conceptualization.

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Notes

1. In this paper we will deal with only the ditransitive construction of a *to*-dative type.

2. Henceforce, I will investigate the nature of semantic field in Conceptual Semantics. But the idea of semantic field merger discussed below can be shifted to other semantic theories mentioned above.

3. The conceptual structure is 'conceptual' in that it is a mental representation at the level at which non-linguistic information, e.g., sensory and motor information, as well as linguistic information is compatible[4, p. 17]

4. Pinker gives five pairs of subordinating causal relations: 'effect' vs. 'cause', 'but' vs. 'despite', 'let' vs. 'prevent', 'for/to' vs. 'means', and 'obligate' vs. 'fulfill.' See [6, pp. 200-204].

5. As Jackendoff notes[5, p. 198], *give* requires as its lexical property that both Theme and Goal be syntactically realized.

6. For the precise formulation, see [5, p. 199, pp. 273-274].

7. More rigidly this might be incorrect since conventionalizastion of pragmatically concomitant meaning is a matter of degree. Thus the distinction between (20b) and (20c) involves simplification. In the more realistic view, the association between the construction form and the pragmatic meaning will become stronger gradually and finally reach the point at which they are no longer separable in any context as shown in (20d).