The inherent semantics of argument structure: The case of the English ditransitive construction[1]

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Abstract

This paper argues that highly specific semantic constraints should be associated directly with the ditransitive argument structure, and not directly to the specific verbs involved. The proposal is contrasted with a recent proposal by Gropen et al. (1989), who argue that the constraints are the result of a semantic rule altering the verbs' inherent semantics. The analysis outlined here alleviates the need for lexical rules or transformations to operate on either syntactic or semantic structure, and also avoids a proliferation of new verb senses.

At the same time, other important aspects of Gropen et al.'s theory are adopted; specifically, the need to circumscribe narrowly defined semantic subclasses characterized by local productivity is acknowledged. On the account presented here, the narrowly defined subclasses are understood to be subclasses that are conventionally associated with the construction, as opposed to subclasses that are conventionally allowed to undergo a lexical rule.

In the second half of the paper, the specific semantic constraints are detailed, revealing a more specific semantic structure than is generally acknowledged. In particular, a polysemous semantics is argued for, with transfer between a volitional agent and a willing recipient as the central sense. Several general systematic metaphors are described and shown to license further extensions from the central sense.

Introduction

In their recent *Language* article, "The learnability and acquisition of the dative alternation", J. Gropen, S. Pinker, M. Hollander, R. Goldberg, and R. Wilson (1989) provide a compelling account of how it is that the ditransitive syntax can be used productively with new and novel verb

forms, and yet resist full productivity over any generally defined domain. They suggest lexico-semantic rules which operate on narrowly defined verb classes producing verbs with slightly altered semantics, whose arguments are mapped onto the ditransitive syntax by general linking rules. The identification of narrowly defined verb classes is done on the basis of specific morphophonological and semantic criteria. In this paper, I summarize their arguments, and, while accepting the idea that narrowly circumscribed domains of local productivity need to be identified, I will argue that there is a more revealing characterization of the phenomenon than that offered. Specifically, I will argue that the semantic constraints involved are more felicitously associated directly with the construction as a whole than with the lexicosemantic structure of the verbs.

In the second half of the paper, I will analyze the specific semantics involved, arguing that several important generalizations have been overlooked. In this section I will also identify several systematic metaphors associated with the construction, showing that expressions such as "Mary gave Joe a kiss", and "Mary's behavior gave John an idea" are instances of a large and productive class of expressions which are based on systematic metaphors.

A discussion of J. Gropen, S. Pinker, M. Hollander, R. Goldberg, and R. Wilson (1989)

It has been a long standing puzzle that the ditransitive syntax may be used somewhat but not completely productively. That it can be used somewhat productively is clear from evidence that the syntactic pattern can be extended to new and hypothetical verb forms; for example, the new lexical item *fax* can be used ditransitively as in:

(1) Joe faxed Bob the report.

Also, hypothetical lexical items are readily adapted to the ditransitive syntax. For example, if we define a new verb, *shin* to mean "to kick with the shin" it is quite natural for us to allow this new verb to be used ditransitively, as in:

(2) Joe shinned his teammate the ball. (Marantz 1984: 177)

At the same time, the pattern is not completely productive within any generally defined class of verbs. Apparently closely related words show distinct differences as to whether they allow ditransitive syntax:

(3) a. Joe gave the earthquake relief fund $5.
b. *Joe donated the earthquake relief fund $5.

(4) a. Joe told Mary a story.
b. *Joe whispered Mary a story.
(5) a. Joe baked Mary a cake.
b. *Joe iced Mary a cake.

Brown and Hanlon (1970) have shown that children are neither corrected nor miscomprehended more often when they speak ungrammatically, so that they have no recourse to "negative evidence" that could allow them to either unlearn or avoid learning the above type of ungrammatical sentences. An apparent paradox arises then, since if speakers have a productive mechanism that allows them to extend the use of the ditransitive syntax to new and novel verbs, it is not clear what prevents speakers from overgeneralizing to produce the above ill formed examples.

Gropen et al. propose a solution to this paradox. A broad range rule is proposed to capture the necessary conditions for ditransitive syntax. The broad range rule states in effect that a prospective possessor must be involved, i.e., that the first object must be understood to be a prospective possessor.[2] This general rule does not provide sufficient conditions, however, there being many verbs which can be understood to involve a prospective possessor which do not allow ditransitive syntax (cf. *donate*, *contribute*, *pull*, *shout*, *choose*, *credit*, *say*).

Sufficient conditions are determined by a set of narrow range rules which classify verbs into narrowly defined semantic classes. The specific classes that Gropen et al. propose are the following:

1. Verbs that inherently signify acts of giving, e.g., *give*, *pass*, *hand*, *sell*, *trade*, *lend*, *serve*, and *feed*.
2. Verbs of instantaneous causation of ballistic motion, e.g., *throw*, *toss*, *flip*, *slap*, *kick*, *poke*, *fling*, *shoot*, *blast*.
3. Verbs of sending, e.g., *send*, *mail*, *ship*.
4. Verbs of continuous causation of accompanied motion in a deictically-specified direction: *bring*, *take*.
5. Verbs of future having (involving commitments that a person will have something at some later point), e.g., *offer*, *promise*, *bequeath*, *leave*, *refer*, *forward*, *allocate*, *guarantee*, *allot*, *assign*, *advance*, *award*, *reserve*, *grant*.
6. Verbs of communicated message e.g., *tell*, *show*, *ask*, *teach*, *pose*, *write*, *spin*, *read*, *quote*, *cite*.
7. Verbs of instrument of communication, e.g., *radio*, *e-mail*, *telegraph*, *wire*, *telephone*, *netmail*, *fax*.
8. Verbs of creation, e.g., *bake*, *make*, *build*, *cook*, *sew*, *knit*, *toss* (when a salad results), *fix* (when a meal results), *pour* (when a drink results).
9. Verbs of obtaining, e.g., *get*, *buy*, *find*, *steal*, *order*, *win*, *earn*, *grab*.

Before continuing with Gropen et al.'s argument, we might make several small comments on this particular set of subclasses. First, the fifth subclass, "Verbs of future having," actually can be seen to conflate three distinct subclasses. Some of the verbs are used in expressions which imply that the subject actually acts to cause the first object to receive the second object at some later point in time (e.g., *bequeath*, *leave*, *forward*, *allocate*, *assign*), some of the verbs are used in expressions which imply the subject acts to cause the first object to receive the second object at some later point in time only if the *satisfaction conditions* (Searle 1983) associated with the act denoted by the predicate hold, (e.g., *promise*, *guarantee*, *owe*), and finally some are used in expressions which imply that the subject only *enables* the first object to receive the second object (e.g., *permit*, *allow*). Each of these classes will be discussed in more detail below.

The sixth class, verbs of communicated message, should be understood to include verbs whose inherent semantics involves a communicative act, in order to distinguish this class from similar verbs such as *say*, *assert*, *claim*, and *doubt* which might be described as verbs of propositional attitude. Understood in this way, several of the verbs listed by Gropen et al. seem to be misclassified; for example, *pose*, *spin* and *cite* do not obviously fall into the class of "verbs of communicated message", and accordingly, are not (at least in my dialect) readily dativizable:

(6) ?*Bill posed him a problem.
(7) ?*Bill spun her a fairy tale.
(8) ?*Bill cited him a passage.

Both this class and the seventh class, verbs of instrument of communication, should be classified as metaphorical classes since they are based on a systematic metaphor which involves understanding meaning as being packaged in linguistic form and sent between interlocutors. This metaphor, often referred to as the Conduit metaphor (Reddy 1979), is described in more detail in the section below on metaphorical extensions.

Finally, at least one additional subclass should be added to the list of subclasses. This involves verbs of refusal (e.g., *refuse*, *deny*), e.g., *Bill refused Joe a raise; The committee denied him tenure.* Expressions involving these verbs imply that the subject refuses to cause the first object to receive the second object.[3]

In any case, we need only accept the spirit of Gropen et al.'s analysis, that narrowly defined semantic subclasses need to be identified, in order to accept Gropen et al.'s conclusion that this type of narrow circumscription allows us to capture the fact that other subclasses of verbs which refer to the same kind of general events, but do not fall into any of the

above particular classes, fail to dativize. Their examples of such non-dativizing classes are as follows:

1. Verbs of fulfilling (X gives something to Y that Y deserves, needs, or is worthy of): **I presented him the award*; **I credited him the discovery*; **Bill entrusted/trusted him the sacred chalice*; **I supplied them a bag of groceries*. [I would also include in this class non-dativizing *concede*, *furnish*, and *donate*.]
2. Verbs of continuous causation of accompanied motion in some manner: **I pulled John the box*. **I carried/pushed/schleped/lifted/lowered/hauled John the box*.
3. Verbs of manner of speaking: **John shouted/screamed/murmured/whispered/yodeled Bill the news*.
4. Verbs of propositions and propositional attitudes: **I said/asserted/questioned/claimed/doubted her something*.
5. Verbs of choosing: **I chose/picked/selected/favored/indicated her a dress*.

Gropen et al. also provide experimental evidence to show that speakers are sensitive to certain morphophonological constraints. In particular, verbs with particular morphemes such as *per-*, *con-*, *-mit*, *-sume* and polysyllabic verbs with non-initial stress are disallowed. These constraints largely coincide with distinctions between Latinate and native vocabulary, and between specialized and more basic vocabulary; however, we clearly would not want to ascribe recourse to etymological information to children, and the experiments in support of these particular constraints controlled for semantic information. Therefore, the constraints are stated in terms of morphophonology. These constraints are used to explain the following:

(9) Chris bought/*purchased/*obtained/*collected him some food.
(10) Jan told/*explained/*reported/*announced Chris a story.

However the constraints do not apply to every narrowly defined classes of verbs. Verbs of future having, in particular, are not subject to this constraint:

(11) Chris assigned/allotted/guaranteed/bequeathed him the tickets.

The class of instrument-of-communication verbs and the class of creation verbs also include verbs which are exceptions to the morphophonological constraint:

(12) Chris e-mailed/radioed/arpanetted him a message.
(13) Chris xeroxed/thermofaxed/nroff'd him a copy.

Gropen et al. suggest that each of the verbs in examples 12–13 is classified independently of the morphological criteria as a special kind of complex stem having a noun or name as its root. They cite evidence that tacit knowledge that a word's stem is from another category allows it to be treated specially with respect to morphological processes (Pinker and Prince 1988). To account for these cases, we can state the generalization that a verb from any class which is understood to have a noun or name as its root, is not constrained by the morphophonological constraint.

The narrowly defined subclasses of verbs together with the morphophonological constraint provide a high degree of predictive power. A new or nonsense verb which falls into one of the recognized narrow classes of verbs and which, if applicable, obeys the morphophonological constraint, is automatically licensed to be used ditransitively (however see note 3). Verbs in conflict with these constraints are ruled out. This circumscribing of narrow domains in which the ditransitive is locally productive goes a long way toward accounting for the apparent paradox which Gropen et al. set out to resolve: that the ditransitive syntax can be extended to new and novel verbs, but at the same time is not available to all verbs of any broadly defined class (I refer the reader to Pinker 1989 for a detailed investigation of partial productivity).

Lexical idiosyncrasy

There remains room for a degree of lexical idiosyncrasy. One expected source of idiosyncrasy stems from the fact that the determination of which narrowly-defined class a given verb belongs in is not always entirely clear-cut. For example, I have suggested that *bequeath* falls into the dativizing class of verbs of future having, along with *leave*, *forward*, *allocate*, etc. However, it seems it might be possible to instead classify *bequeath* in the non-dativizing class of verbs of fulfilling (X gives something to Y that Y deserves, needs, or is worthy of), along with *present*, *credit*, *entrust*, *donate*, etc. Because of these two classification possibilities, we would expect *bequeath* in fact to dativize in some dialects, and not to dativize in others. In general, in the case of verbs that may fall into one of two classes, one which can appear ditransitively and one which cannot, we would expect to find some dialectal variation in whether the verbs can be used ditransitively.

Another source of lexical idiosyncrasy is evidenced by the fact that speakers I have checked with occasionally report different degrees of grammaticality even among verbs which are uncontroversially within the

same narrow range class. For example, *throw* and *blast* both fall within the class of verbs of instantaneous causation of ballistic motion and yet:

(14) a. She threw him a cannonball.

is decidedly better for most speakers than,

b. She blasted him a cannonball.

Similarly,

(15) a. Sally designed him a house.

is judged to be more grammatical than,

b. Sally created him a house.

although both *design* and *create* should fall in the same class of verbs of creation.

This lexical idiosyncrasy can in part be accounted for by a phenomenon which Gropen et al. identify in the same 1989 article. They show that people "tend to be conservative" in their use of lexical items. Specifically they show experimentally that people tend to use lexical items in the same constructions in which they heard those items used, but that they can, if properly primed, extend the uses to new patterns (cf. also Bybee 1985). This phenomenon provides evidence that people store in memory the specific syntactic patterns that a word is heard used with (see also Bybee 1985, Langacker 1987 for particular usage-based models of grammar). This being the case, a certain degree of lexical idiosyncrasy is to be expected.

The existence of some degree of lexical idiosyncrasy, however, should not be taken to undermine the existence of narrowly defined semantic subclasses of verbs that occur in the ditransitive construction. Although the exact formulation of the classes has differed, the existence of such subclasses has been noticed by Green (1974), Oehrle (1976), and Wierzbicka (1986). And, as has just been discussed (and is spelled out in more detail in Pinker 1989), the existence of such classes begins to explain the phenomenon of partial productivity.

The theoretical framework

In their acquisition experiment, Gropen et al. show that the semantic restriction that a prospective possessor must be involved is operable as soon as the ditransitive syntax is produced, there being no period of

unconstrained overgeneralization. For example, none of the following possible types of overextensions were ever uttered by any of the children:

(16) *Amy took Chicago the road. (Amy took the road to Chicago.)
(17) *Betty threw the tree the box. (Betty threw the box to the tree.)
(18) *Alex put his head a gun. (Alex put a gun to his head.)
(19) *Babs took fun a trip. (Babs took a trip for fun.)

This calls into question the idea that the dative rule is fundamentally a syntactic operation; there is no clear reason why a syntactic operation would be constrained by an arbitrary semantic condition as soon as the syntactic operation is learned. Moreover, since an unconstrained rule would be easier to learn and represent (Fodor MS.) and would provide more expressive power (Pinker 1989), it is not clear why the semantic constraints on this putative syntactic rule are not ignored by new generations of speakers.

For these reasons, Gropen et al. propose that the prepositional/ditransitive alternation results from a semantic rule rather than being the product of a syntactic transformation. Specifically, they suggest that productive use of the ditransitive syntax is the result of a lexicosemantic rule which takes as input a verb with the semantics, *X causes Y to go to Z* and produces the semantic structure *X causes Z to have Y*. The double object syntax, they argue, is then predictable from near universal linking rules mapping the arguments of a verb with the meaning *X causes Z to have Y* into the ditransitive form. In this way, they argue that the dative rule produces a "conceptual gestalt shift", that it is, in effect, a semantic operation on lexical structure.

There are several problems with the rule based account Gropen et al. put forward. It creates a basic asymmetry between the ditransitive and prepositional constructions, since on their account, the argument structure that is mapped into the ditransitive syntax is derived from the argument structure that would be mapped onto a prepositional paraphrase. However, there appears to be little empirical evidence to warrant postulating such an asymmetry. Gropen et al.'s own evidence shows that both constructions are learned at roughly the same time, neither predictably preceding the other in children's speech; therefore an argument based on the chronology of acquisition is immediately undermined. Moreover, as is well known, there are ditransitive expressions which have no prepositional counterpart, for example:

(20) a. Her mother allowed Jane a candy bar.
b. *Her mother allowed a candy bar to Jane.

(21) a. The music gave him a headache.
b. *The music gave a headache to him.
(22) a. Jane refused Fred a kiss.
b. *Jane refused a kiss to Fred.

The asymmetrical relationship implicit in the idea of a rule that takes a "cause to go" semantic structure and changes it into a "cause to have" semantic structure appears to be an historical remnant from transformational accounts which postulated that ditransitive forms were transformationally derived from paraphrases with *to* or *for*. An alternative account will be suggested below which avoids the necessity of postulating rules or transformations on either syntactic or semantic structure.

Another problem with the rule based account is that many of the verb classes do not involve verbs which basically mean: "X causes Y to go to Z". Specifically, verbs of creation (*bake*, *make*), verbs denoting acts whose associated satisfaction conditions imply future having (*promise*, *offer*), verbs of permission (*permit*, *allow*), and verbs of refusal (*deny refuse*) do not involve verbs that mean "cause to go". In order to account for these cases, several distinct rules would need to be postulated.

Further, many verbs clearly do not come to mean "cause to have". For example, the verbs *bake*, *draw* in:

(23) Joe baked Sally a cake.
(24) Joe drew Sally a picture.

do not under any plausible interpretation mean "cause to have". In general, it is not clear that the meanings of the verbs are changed at all. For example, there is no reason to think that two senses of *send* are involved in the following examples:

(25) a. I sent a package to him.
b. I sent him a package.

The sending involved is exactly the same.

There is an alternative account which avoids these difficulties while at the same time capturing the idea that the ditransitive syntax crucially reflects a specific semantics. The alternative is to attribute the semantics directly to the construction instead of to the specific verbs involved. This type of solution has been suggested by Fillmore (1987). Via the literal superimposition of a series of slides, Fillmore suggested that the meaning of an expression is arrived at by the superimposition of the meanings of open class words with the meanings of the grammatical elements. Adopting Fillmore's insight, we can view the construction as imposing a certain semantic construal on the scene described. That is, the semantics of "X

causes Y to have Z", or what I will describe as "X causes Z to receive Y", can be attributed directly to the skeletal syntax, [Subj [Verb Obj Obj2]].[4] What are described as narrow range lexicosemantic rules by Gropen et al. can be reinterpreted as narrowly defined classes of verbs which are conventionally associated with the construction. The verb *throw* on this account does not come to mean "cause to receive" when used ditransitively; instead *throw* simply means "throw". The implication of caused reception is contributed, not by the verb, but by the construction.

On this account no asymmetry between the ditransitive and prepositional paraphrase is assumed. In fact, once we recognize that both syntactic structures are paired with identifiable semantics, the alternation itself can be seen to be a result of semantic overlap between the two constructions. It is a fact about the world that causing something to move somewhere is systematically related to causing someone to receive something. We no longer need to state a rule in the grammar linking these two constructions.

This account also allows us to avoid a proliferation of verb senses; we need only postulate one verb *send* which has the same sense in both:

(26) a. I sent a package to him.
b. I sent him a package.

The sending scene referred to in both sentences is compatible with a description in terms of *I caused a package to go to him* or *I caused him to receive a package*, with little if any noticeable change in meaning so either construction is licensed.

Pinker argues that a major motivation for positing lexical rules is that they tell us which verb stems we can use with the construction (Pinker 1989). However, it is not necessary to postulate rules that alter the inherent semantics of the verbs — we can say that the particular verb classes are conventionally associated with the construction. The overall interpretation, then, is an effect of the principles of integration, not rules operating on lexical semantics.

There are additional reasons to prefer this account. Below we will see that there are specific semantic constraints on the subject and direct object as well as on the verb. The subject must intend the transfer and the direct object must be understood to be a willing recipient. It will turn out that these constraints, just like the morphophonological constraint that Gropen et al. propose, can be overridden in certain delimitable subclasses of expressions, but they nonetheless need to be stated as constraints on the use of ditransitive syntax. The fact that these constraints refer to the subject and the first object undermines attempts to link the semantic constraints solely to the verb's semantics. In the same way, the systematic

metaphors that are discussed in the next section are not describable without direct reference to the entities which are encoded as arguments in the ditransitive syntax. For example, a metaphor to be discussed below, Directed Actions are Transferred Objects crucially refers to the entity which is coded as the second argument, i.e., the action. It is only the semantics of the second argument which differentiates:

(27) John gave Mary an apple.
(28) John gave Mary a wink.

It is also clear that there are several verbs in the narrowly defined class of creation verbs which do not inherently signify creation; however these verbs can be associated with a scene of creation when used in conjunction with particular direct objects. For example, Gropen et al. include *fix*, and *pour* in their list of verbs of creation because of such expressions as:

(29) Fix dinner.
(30) Pour a drink.

These expressions refer to scenes of creation, but the creation involved is not part of the *verbs*' semantics. *Pour* and *fix* retain their normal meanings in these expressions. It is the verb together with the direct object which describes a scene of creation and therefore licenses the ditransitive syntax.

Another benefit to attributing the semantics directly to the construction is that it is more parsimonious. The rule-based account must postulate not only separate verb senses, but also a special form-meaning correspondence in the form of a linking rule. That is, despite the fact that Gropen et al. imply that the construction results simply from applying near universal linking rules to the "X causes Z to have Y" argument structure, in point of fact, one of the necessary linking rules needs to be postulated specifically for this construction. The linking rule mapping the possessed entity to the second object position is unique to this construction. Moreover, another stipulation is required to capture the fact that the proposed verb senses only occur in this construction. That is, *throw* for example, does not mean "cause to have" except when used ditransitively. This fact cannot follow simply from the proposed linking rules since other verbs which lexically code "cause to have", such as *give*, can be used derivatively and with other valences with the same meaning. On our account, only a single form-meaning correspondence need be postulated, that the skeletal construction, [Subj [Verb Obj Obj2]] is paired with a particular semantics. No new verb senses are required, and so no stipulation of where these verb senses can occur is necessary.

Finally, by associating the semantics directly with the construction,

there is a natural way to capture the intuition that the *give*-class of verbs is more central to the construction than the other classes. What needs to be noted is that the semantics associated with these lexical items is redundant with the semantics of the construction. The other classes of lexical items are only compatible with the construction in the sense that they are able to accommodate the transfer interpretation, but do not lexically code transfer.[5]

The idea that the meanings of lexical items can accommodate to the meanings of the constructions has been discussed at some length by, among others, Talmy (1977), Fillmore (MS) and Carter (1988). What is at issue in the case of the ditransitive is whether the transfer interpretation of ditransitive expressions must be posited in the meaning of each of the verbs involved or whether we can attribute the transfer interpretation to the meaning of the construction. For the reasons just outlined, it makes sense to associate the transfer interpretation directly with the construction.

In the theory of Construction Grammar, as articulated by Fillmore, Kay, and O'Connor (1988), Fillmore (1988), Kay (1988), and Lakoff (1987), the units of language are taken to be form-meaning correspondences that are not strictly predictable from knowledge of the rest of the grammar; these correspondences are called *constructions*. Words and morphemes are taken to be instances of constructions, as are larger phrasal form-meaning correspondences. Since the existence of the ditransitive structure in English is not predictable from knowledge of the rest of English grammar, and since it is advantageous to view the structure as being associated with a particular semantic interpretation for the reasons just outlined, a constructional analysis of the English ditransitive is warranted, i.e., the ditransitive argument structure can be seen to be a *construction* in the Construction Grammar sense of the term, a pairing of both form and meaning. By referring to a construction, instead of to a "case frame", "valence", or "subcategorization frame", I intend to underscore the point that the construction, with a specific meaning to be detailed below, exists independently of the individual verbs that may occur with it.

The semantics

We are now in a position to turn our attention to the description of the construction's semantics. This section owes a great debt to Cattell (1984), Green (1974), and Oehrle (1976), for their detailed analyses of hundreds of ditransitive expressions. In what follows, several aspects of the seman-

tics are discussed: the construction is shown not to be associated with a single fixed meaning, but instead is associated with a category of related meanings; specific constraints on the subject and direct object are argued for; and several systematic metaphors are identified and discussed, revealing the general, systematic, productive nature of forms that are often assumed to be idiosyncratic. Before these issues are addressed, however, I will briefly defend my choice of the term "recipient" as opposed to "possessor" to describe the semantics associated with the first object position.

On the notion recipient

I have been referring to the semantic role of the first object position as "recipient" instead of as "possessor". This is done for several reasons. Many of the metaphors involving transfer (to be described below) do not map the implication that the recipient possesses the transferred entity after reception. For example,

(31) Joe gave Mary an insult.

does not imply that Mary "possesses" an insult, but only that Mary "received" an insult. Similarly,

(32) Jan gave Chris a punch.

does not imply that Chris "possesses" a punch, but only that he "received" a punch. If we describe the role as that of a "recipient" instead of "possessor" these facts pose no problem. The fact that a possessive relationship is usually implied follows automatically from the fact that what is received is normally subsequently possessed.

Moreover, noticing that a recipient is involved in ditransitive expressions may be a first step toward motivating the double object syntax of the construction. Those interested in the semantics of the direct object since Jakobson have noted that *recipients* of force and effect make for good direct objects (Jakobson 1938; Langacker 1987; Rice 1987). (Of course this is not to say that all direct objects are recipients; clearly the objects of cognition verbs such as *believe*, *see*, and *know* would present difficulties for such a claim.)

Finally, the construction has been shown to be associated with a scene of transfer (I have been using "scene" in the sense of Fillmore [1975] to mean any coherent individuatable perception, memory experience, action or object). Describing the first object as a "recipient" more adequately captures the dynamic character of this semantics. It is for these reasons

that I consider "recipient" to be a more appropriate description for the semantics of the first object than "possessor".

Polysemous interpretation

It is widely recognized that many ditransitive expressions do not strictly imply that the second object is successfully transferred to the first object. For example, "Chris baked Jan a cake" does not strictly imply that Jan actually receives the cake. It may happen that Chris is mugged by cake-thieves on the way over to Jan's. In fact many of the narrowly defined verb classes described by Gropen et al. can be seen to give rise to slightly different interpretations.

Expressions involving verbs of creation (e.g., *bake*, *make*, *build*, *cook*) and verbs of obtaining (e.g., *get*, *grab*, *win*, *earn*) do not strictly imply that the subject causes the first object to receive the second object. As was noted above, "Chris baked Jan a cake" does not strictly imply that Jan receives the cake. Transfer is rather a *ceteris paribus* implication. What is implied by this example is that Chris baked a cake with the intention of giving the cake to Jan.

Expressions involving verbs which imply that the subject undertakes an obligation (e.g., *promise*, *guarantee*, *owe*) also do not strictly imply transfer. For example, *Bill promised his son a car* does not imply that Bill actually gives his son a car, or even that Bill intends to give his son a car. Rather, transfer is implied by the "satisfaction conditions" associated with the act denoted by each predicate (Searle 1983). A satisfied promise for example does imply that the promisee receives whatever is promised.

Expressions involving verbs of future having (e.g., *bequeath*, *leave*, *refer*, *forward*, *allocate*, *allot*, *assign*) imply that the subject acts to cause the first object to receive the second object at some future point in time. This class differs from the last two classes in that no intention or obligation of future action on the part of the subject is implied; i.e., the subject's role in the transfer is accomplished by the action referred to by the predicate.

Expressions involving verbs of permission (e.g., *permit*, *allow*) imply that the subject *enables* the transfer to occur by not preventing it, not that the subject actually *causes* the transfer to occur. For example, *Joe allowed Billy a popsicle* implies only that Joe enabled, or did not prevent Billy from having a popsicle, not that Joe necessarily caused Billy to have a popsicle.

Expressions involving verbs of refusal (e.g., *refuse*, *deny*) express the negation of transfer, for example:

(33) Joe refused Bob a raise in salary.
(34) His mother denied Billy a birthday cake.

Here transfer is relevant in that the possibility for successful transfer has arisen, the subject is understood to refuse to act as the cause of the reception.

Because of these differences, the semantics involved can best be represented as a category of related meanings. In this sense the ditransitive can be viewed as a case of *constructional polysemy*: the same form is paired with different but related senses. The slightly different senses associated with the construction would have to be accounted for by a rule-based account as well. Narrow range rules would have to be modified to account for differences in implication; this could certainly be done. However, polysemy has been shown to be a natural and recurring phenomenon in natural language in many studies (for example, Brugman 1988; Haiman 1978; Lakoff 1987; Lindner 1981; Sweetser 1990). Moreover, accounting for these differences in terms of constructional polysemy allows us to capture the relationships between the different senses in a natural way, instead of postulating an unstructured collection of rules. In particular, a polysemous analysis allows us to recognize the special status of the central sense of the construction.

The central sense can be argued to be the sense involving successful transfer of an object to a recipient, i.e., the subject agentively causes the second object to be transferred to the first object. There are several reasons to postulate this class as the central sense. It involves concrete, as opposed to metaphorical or abstract (here, potential) transfer, and concrete meanings have been shown to be more basic diachronically (Traugott 1988; Sweetser 1990) and synchronically (Lakoff and Johnson 1980). Further this is the class most metaphorical extensions (described below) are based on. For example,

(35) a. Mary taught Bill French.

implies that Bill actually learned some French, i.e., that metaphorical transfer was successful. This is in contrast to:

b. Mary taught French to Bill.

in which no such implication is necessary. Similarly,

(36) a. Mary showed her mother the photograph.

implies that her mother actually saw the photograph, whereas for many speakers, no such implication is necessary in,

(36) b. Mary showed the photograph to her mother (but her near-sighted mother couldn't see it).

These facts can be accounted for once we recognize actual successful transfer as the central sense of the construction; we need only state that metaphorical extensions have as their source domain, the central sense. Finally, successful transfer is argued to be the central sense because the other classes can be represented most economically as extensions from this sense.

The different senses are of course not unrelated to the differences in the meanings of the verbs which enter into the construction. That is, it is clear that the lexical items which occur in a particular expression play a role in deciding which sense of the ditransitive will be implied. For example, it is not an accident that the verb *refuse* combines with the ditransitive construction to imply that the subject refuses to cause the first object to receive the second object. For this reason it is possible to understand the different senses just described as resulting from principles of integration between the central sense of the construction and the particular verb classes that enter into it. On this view, the construction is directly associated only with the central sense of actual transfer, the differences in interpretation resulting from principles of integration existing between the central sense and the different classes of verbs involved.

At the same time, the various senses, or alternatively, the principles of integration, are not predictable and must be conventionally associated with the construction. For example, it is not predictable from knowing the rest of English, that verbs of creation will be allowable in the ditransitive construction in the first place; moreover, it is not predictable that ditransitive expressions involving verbs of creation will imply intended transfer instead of actual transfer or general benefaction. Because of this, the various different possible senses are listed; it should be borne in mind that it is possible to view them as principles of integration operating between the central sense of the construction and the classes of verbs which enter into it.

The suggestion here of allowing for a fairly specific central sense of the construction and also postulating separate related senses or principles of integration which make reference to specific verb classes, can be contrasted with the possibility of postulating a single abstract sense for the construction and allowing the verbs' semantics to fill out the meaning. Since the latter approach is attractive in being more simple, let me take time to demonstrate why an abstractionist account fails to adequately account for the data.

Several researchers (e.g., Wierzbicka 1986; Paul Kay [personal com-

munication]; Frederike Van der Leek [personal communication]) have suggested that there is a uniform meaning associated with the ditransitive, and that is simply that there is some kind of special effect on the first object. It is claimed that the nature of this effect is inferred pragmatically. Several problems are apparent with this suggestion.

First, there is no non-circular reason to think that first object is any more affected in the following (a) cases than in the corresponding (b) cases:

(37) a. Chris baked Pat a cake.
b. Chris baked a cake for Pat.
(38) a. Chris promised Pat a car.
b. Chris promised a car to Pat.
(39) a. Chris kicked Pat the ball.
b. Chris kicked the ball to Pat.

In fact, there is no obvious definition for "affected" which implies that the Pat is necessarily affected in:

(40) Chris baked Pat a cake.

Pat may never receive the cake, and in fact may never even know about the cake.

Also undermining the claim that the first object is necessarily affected in the ditransitive construction is the fact that this argument is often only marginally passivizable, and passive is generally accepted to be positively correlated with affected subjects:

(41) *Lou was bought a gift.
(42) *Lou was boiled an egg.
(43) *Pat was flung a sweater.
(44) *She was nudged a beer.
(45) *She was baked a cake.

Finally, it is not possible to construe the first object as affected in just any pragmatically-inferable way. For example, even if we know that there are an agent, a patient, and a goal involved (this we may know by the semantic roles on, e.g., Kay's account), it is possible to pragmatically infer that the way the goal is affected is by the agent throwing the patient at the goal. However, the following cannot be interpreted in this way:

(46) Pat threw Chris the ball.
(47) Pat hit Chris the ball.

That is, these examples cannot be interpreted to mean that Pat threw the ball at Chris. They can only mean that Pat threw or hit the ball so that

Chris would receive the ball. This fact is unexplained by the abstractionist account.

Another abstractionist analysis that is sometimes offered is that the first object semantic role be described as a *prospective possessor*, thus allowing the semantics to be abstract enough to cover all of the possible interpretations of actual, intended, future, or refused transfer (e.g., Goldsmith 1980). However, this suggestion, and in fact more generally, any abstractionist account, is subject to several criticisms.

One general problem is that an abstractionist account cannot capture the intuition that transfer in general, and *give* in particular are more basic to the construction. *Give*, in fact, is the most prototypical ditransitive verb because its lexical semantics is identical with the construction's semantics. I take this to be a strong enough intuition to be worth worrying about. In fact, I performed an informal experiment to gauge the strength of the intuition that *give* codes the most basic sense of the construction. I asked ten non-linguists what the nonsense word *topamased* meant in the following sentence:

(48) She topamased him something.

A full six out of ten subjects responded that *topamased* meant "give". This fact cannot be attributed simply to effects of general word frequency because there are several other words that are allowable in this construction and are more frequent than *give*. Thus, according to Carroll et al.'s *Word Frequency Book* (1971), that used a 5,000,000 word corpus, *give* occurred 3366 times, while *tell* occurred 3715 times; *take* 4089 times; *get* 5700 times; and *make* 8333 times. Only *tell* of these other words was given as a response, and it was only given by one speaker. None of the other words were given as responses. One might raise the objection that while *give* is not the most frequently occurring word overall, it is nonetheless the most frequently word in this construction. However, the point of the experiment was exactly to test whether speakers were aware of the close relationship between *give* and this particular construction; the results seem to indicate that they are.

A related problem stems from the fact that not all ditransitive expressions are equally acceptable. That is, there are certain benefactive ditransitives, to be described below in terms of a systematic metaphor, which are acceptable to varying degrees, with some speakers allowing them more freely than others. Examples of this type include:

(49) Hit me a home run.
(50) Crush me a mountain.
(51) Rob me a bank.

These expressions are severely restricted in use (Oehrle 1976). For example, they are noticeably more felicitous as commands:

(52) a. Hit me a home run.
b. ?Alice hit me a home run.

Also, they are more acceptable when the recipient is a referred to by a pronoun:

(53) ?Hit Sally a home run.

On our account, we can understand these cases to be a limited extension from the basic sense; we do not need to put them on a par with other ditransitive examples, and yet we can still treat them as related to the rest of the ditransitives. However, on an abstractionist account, we have to choose whether to include them as ditransitives or exclude them from the analysis. If we include them, we have no way to account for their marginal status and special constraints. If we exclude them, we fail to capture the obvious similarity they bear to other ditransitives, both in their syntax and in their semantics.

Another problem is that it is not predictable that verbs of creation will combine with the ditransitive to imply intended transfer instead of actual or future transfer. For example,

(54) Chris baked Mary a cake.

can only mean that Chris intends to give Mary the cake. It cannot mean that Chris necessarily gave or will give the cake to Mary.

Finally, an abstractionist account does not readily allow us to account for the fact, mentioned previously, that the metaphorical extensions are based on an actual transfer, not potential or intended transfer. That is, if we only postulate an abstract constraint on the first object position, we have no natural way of accounting for the fact that the metaphorical extensions imply that the first object is an actual recipient, and not a prospective recipient or goal. However, on our account that constructional polysemy is involved, we can say that the metaphorical extensions have as their source domain, the central sense of actual transfer.

These problems arise for any abstractionist account; therefore, such an account can be seen to be unsatisfactory. Instead, a polysemous semantics is warranted. The related senses are diagrammed in Figure 1.

Motivating the links

The links between the senses can be shown to be natural by showing that analogous links are found elsewhere in language. In this way, it is possible

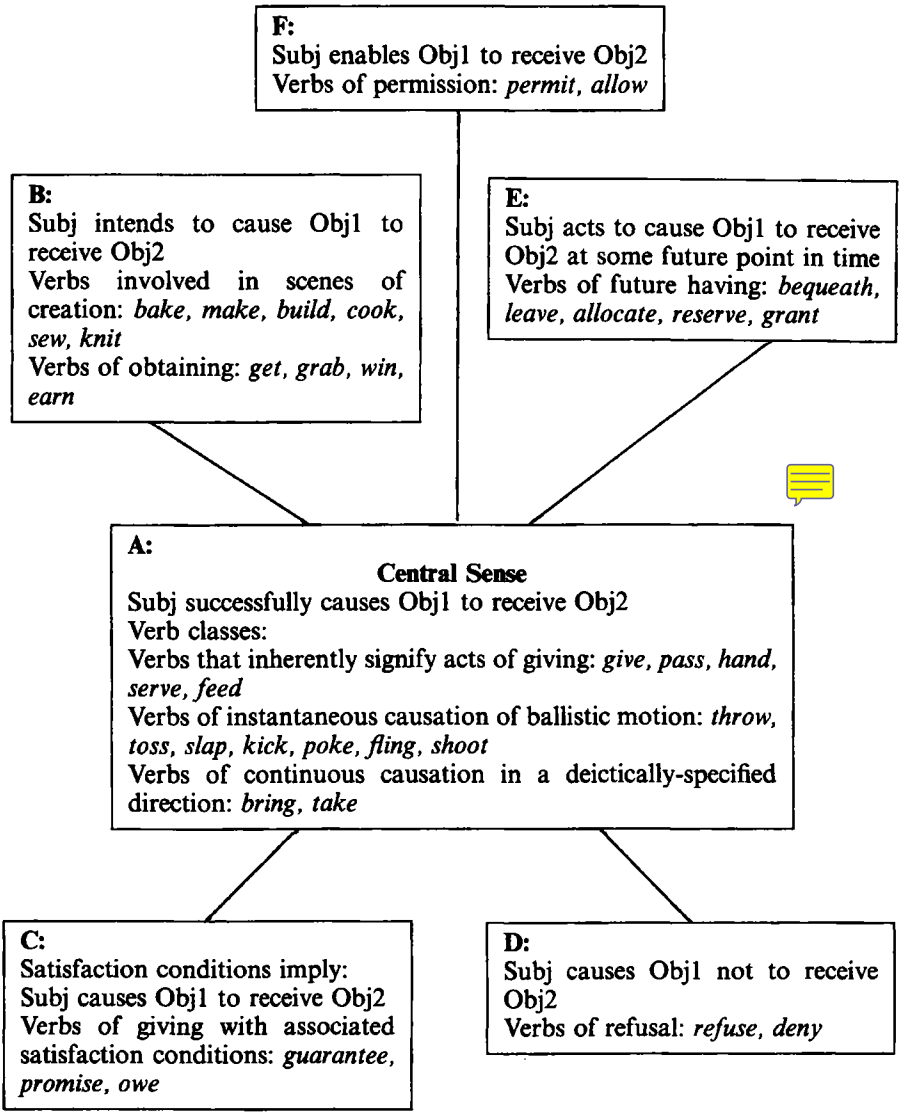

Figure 1. *Polysemous senses of the ditransitive construction*

to demonstrate that no *ad hoc* machinery is necessary to account for the polysemous relations. For example, to see that the link between senses A and B, i.e., a link between actual and intended transfer, is natural, notice that a parallel link between actualization and intention can be found in two interpretations of the English present progressive tense. These two interpretations are exemplified in the following:

(55) a. Not right now, I'm working.
b. Tomorrow, I'm working all day.

In the first example, the working is actualized, while in the second example, the working is intended and will, as a *ceteris paribus* implication, be actualized. If the parallel between the two interpretations of the present progressive and the two uses of the ditransitive is accepted, then the existence of the link between actualization and intention in the latter is made unexceptional.

To see that the link between sense C and the central sense — i.e., a link based on pragmatic satisfaction conditions — is natural, notice that an analogous relationship is found between two senses associated with a different construction. The construction can be defined as: [Subj [V Obj PComp]], where PComp is a predicative PP. Examples of this construction are:

(56) He pushed the napkin off the table.
(57) He kicked the ball into the end-zone.
(58) He shoved the scarf into a box.

The semantics associated with this construction can be shown to be that the subject causes the first object to move along a path designated by the PCOMP. However this construction, like the ditransitive construction, can be shown to allow slight permutations on this central sense. The relevant case here, is that this construction can be used to imply that the associated satisfaction conditions imply that the subject causes the first object to move. For example:

(59) She ordered him out of the house.
(60) She asked him into the room.
(61) She invited him out to her cabin.

In these examples, no actual movement is implied; however, if the order, request, invitation or wish is satisfied, then the person will move out of the house, into the room, or out to her cabin, respectively.

Sense D is related to the central sense by a link based on negation. It has been more difficult to find an analogous link for this case elsewhere, but the following is a possible candidate. A possibly analogous relation is required for some interpretations of *it* anaphora. For example, in the following sentence,

(62) The 76'ers didn't win this year, but *it* will happen next time.

The *it* in the second clause refers to the negation of the first clause, not the first clause itself.

Sense E, that the subject is understood to act to cause the first object to receive the second object at some future point in time, involves expressions which imply that the subject performs some crucial act in a causal chain which, if uninterrupted, will naturally result in the first object receiving the second object. This relationship can be found in the pragmatic principle that allows us to answer the question,

A: How did you get here?

with the response,

B: I hopped on a bus.

The act of hopping on a bus is understood to be the crucial act in a causal chain which, if uninterrupted, naturally results in actualized transportation.

Finally, the link between the central sense and sense F is based on the relationship between causation and enablement. It should not be surprising that the ditransitive construction can accommodate cases of enablement since it is often the case that causers and entities which enable function the same syntactically. For example, so-called causative verbs in English allow subjects which actually only enable as well as subjects which are truly causative. Some examples are: "Forgetting to set my alarm made me oversleep". "Leaving the butter out all day is what melted it".[6]

Volitionality of the subject

There are certain semantic constraints on the ditransitive syntax which, although occasionally recognized (e.g., Green 1974), have not been incorporated into most theories of argument structure. The reason these constraints are often overlooked is that there appear to be exceptional cases. However, the exceptional cases form a delimitable class that can be seen to involve a general systematic metaphor (of the type described in Lakoff and Johnson 1980). It will be shown that the constraints do in fact hold in the source domain of the metaphor.

To identify the first constraint, notice that each of the verbs described so far independently selects for a volitional subject. This generalization can be captured by assigning a constraint on the subject's volitionality directly to the construction.

The volitionality must extend so that not only is the action described by the verb performed agentively, but also so that the transfer is intended. For example, in:

(63) Joe painted Sally a picture.

Joe must be understood to intend to give the picture to Sally. It cannot be the case that Joe painted the picture for someone else and later happened to give it to Sally. Similarly, in:

(64) Bob told Joe a story.

It cannot be the case that Bob told the story to someone else, and Joe just happened to overhear.[7] This constraint accounts for the ill-formedness of the following examples:

(65) *Joe threw the outfielder the ball he had intended the firstbaseman to catch.
(66) *Hal brought his mother a cake since he didn't eat it on the way home.
(67) *Joe took Sam a package by leaving it in his trunk where Sam later found it.

This is not to say that the first or second object of the ditransitive cannot be given a transparent interpretation. The description used to pick out the objects may be understood to be the speaker's description, not the subject's. For example, it is acceptable to say:

(68) Oedipus gave his mother a kiss.

despite the fact that Oedipus did not realize he was kissing his mother. Likewise, it is acceptable to say:

(69) Joe gave Mary a sweater with a hole in it.

even if Joe did not intend to give Mary a defective sweater. Also, it is not necessarily contradictory to use "accidentally" in ditransitive expressions, for example:

Joe accidentally loaned Bob a lot of money [by mistaking Bob for Bill, his twin; without realizing that Bob would skip bail with it; instead of giving the money as a gift as he had intended].

While I do not attempt to untangle the relevant issues here, I appeal to the fact that the same possibilities of interpretation occur with other expressions which are generally agreed to require volitional subjects. For example, *murder* is a verb which is universally recognized as selecting for a volitional subject. Still, it is possible to say without contradiction,

(70) Joe accidentally murdered Mary [although he had meant to murder Sue/although he had only meant to knock her unconscious].

What I am suggesting, then, is whatever notion of volitionality is adopted

to deal with verbs such as *murder*, should be also used to capture the semantic requirement of the subject position of the ditransitive construction.

The existence of this constraint has been obscured by examples such as:

(71) The medicine brought him relief.
(72) The rain bought us some time.
(73) She got me a ticket by distracting me while I was driving.
(74) She gave me the flu.
(75) The music lent the party a festive air.
(76) The missed ball handed him the victory on a silver platter.

In these examples the subject is not volitional. Even when the subject is an animate being, as in examples (73) and (74), no volitionality is required. However these examples form a delimitable class of expressions, as each is an instance of a particular conventional systematic metaphor, Causal Events are Transfers.[8] This metaphor involves understanding causing an effect in an entity as transferring the effect, construed as an object, to that entity. Evidence for the existence of this metaphor, independent of the ditransitive construction, comes from the following expressions:

The Catch-22 situation *presented* him with a dilemma.
The unforeseen circumstances *laid* a new opportunity *at our feet*.
The document *supplied* us with some entertainment.
The report *furnished* them with the information they needed.

Further evidence, both for the existence of the metaphor, and for it motivating the ditransitive examples (67)–(72), comes from the polysemy of each of the predicates involved in those examples. The predicates *bring*, *buy*, *get*, *give*, *lend* and *hand* are used to imply causation, but each of their central senses involve transfer by an agent to a recipient. The link between these senses is accounted for by appeal to the metaphor. *Bring*, *buy*, *get*, *give*, *lend* and *hand* here involve the metaphorical transfer of effect; i.e., each of the examples (71)–(76) implies that the subject is the cause of the first object being affected in some way by "receiving" the second object.

This class can be represented as follows:

Name of Metaphor: Causal Events are Transfers

[Source Domain: Subject causes Obj to receive Obj2
Target Domain: Subject is the cause of Obj being affected by Obj2
Subj: cause
Obj: affected party
Obj2: effect]

Recognizing the metaphor allows us to divorce ourselves from the often made, but erroneous claim that examples such as

(77) Sally gave Bill a headache.
(78) Mary's behavior gave John an idea.

are idiosyncratic. In fact, they are actually instances of a general, productive and principled class of expressions based on the Causal Events are Transfers metaphor.

Returning to the statement of the constraint that the subject must intend the transfer, we can now see the necessity of recognizing this metaphor. By identifying the metaphor, we are able to understand the exceptional cases to be licensed by it; we can recognize that the volitionality constraint is satisfied in the source domain of the metaphor. At the same time, this metaphor differs from the other metaphors to be described below in not mapping volitionality to the target domain; however, the fact that volitionality is not mapped in this metaphor, follows from the fact that the target domain is concerned with abstract causes. Abstract causes cannot necessarily be volitional because they are not necessarily human. Each of the other metaphors described below, on the other hand, involve human actors in the target domain as well as in the source domain, and in each of the target domains, the volitionality constraint is respected.

Semantic constraints on the first object

It has long been realized[9] that the first object must be an animate being to account for the following:

(79) He sent who/*where a letter?[10]

This constraint, however, just like the constraint that the subject must intend the transfer, is somewhat obscured by expressions licensed by the Causal Events are Transfers metaphor described above. For example:

(80) The paint job gave the car a higher sale price.
(81) The tabasco sauce gave the baked beans some flavor.
(82) The music lent the party a festive air.

In none of these examples is the first object an animate being; however, in the source domain of the metaphor, the affected party is understood to be a recipient, i.e., an animate being. That is, the constraint is satisfied in the source, but not the target domain of the metaphor.

An additional semantic constraint is that the first object be understood

to be a beneficiary or a willing recipient.[11] This constraint is needed to account for the following example:

(83) *Sally burned Joe some rice.

Example 83 is unacceptable even if malicious intentions are attributed to Sally; however, it *is* acceptable in the context that Joe is thought to like burnt rice. Furthermore, one cannot felicitously say:

(84) *Bill told Mary a story, but she wasn't listening.
(85) *Bill threw the coma victim a blanket.

In these examples, the first object is not understood to be a willing recipient, and accordingly, these examples are unacceptable.

This constraint may be responsible for the slight difference in meaning between the following two examples provided by Robert Wilensky (p.c.):

(86) a. She fed lasagna to the guests.
b. She fed the guests lasagna.

Most speakers find the first example to be somewhat less polite than the first. Since "feed" is normally used with reference to the food intake of babies or animals, the impoliteness of the first example is not surprising; what requires explanation is the fact that the second example is interpreted to be more polite. The constraint that the first object must be construed as a willing recipient can account for this since the ditransitive version has the effect of imposing the interpretation that the guests are willing agents, thereby according them more respect.

That the recipient is expected to be willing should not be confused with the idea that the recipient is expected to benefit from the transfer. Thus, while,

(87) Jack poured Jane an arsenic-laced martini.

does not imply that Jane will benefit from imbibing the martini, it does presuppose that she is expected to willingly drink the martini.

In some cases, however, the issue of the recipient's willingness or unwillingness is irrelevant to whether transfer is successful. These involve expressions in which actual successful transfer is implied:

(88) Bill gave the driver a speeding ticket.
(89) Bill gave Chris a headache.
(90) Chris gave Bill a kick.[12]

Nonetheless, all cases in which the first object is required to *accept* the transferred object in order for transfer to be successful imply that the first object is assumed to be a willing recipient.

Other metaphors

In the discussion about the constraint that the subject must intend the transfer, we described a systematic metaphor, Causal Events are Transfers, which licenses exceptions to the constraint. This is just one of several metaphors which license the use of the ditransitive construction. The metaphors can be understood to be further extensions from the central sense of literal transfer. The source domain of each of these metaphors is the central sense of actual successful transfer.

The Conduit Metaphor, described and named by Michael Reddy (1979) involves communication *traveling across* from the stimulus to the listener. The listener understands the communication upon "reception". Evidence for the metaphor includes:

He *got the ideas across to* Jo.
His thoughts *came across from* his speech.
Jo *received* the information from Sam.
Jo *got the information from* Bill.

This metaphor licenses the following examples:

(91) She told Jo a fairy tale.
(92) She wired Joe a message.
(93) She quoted Joe a passage.
(94) She gave Joe her thoughts on the subject.

This class can be represented as follows:

Name of Metaphor: Conduit

[Source Domain: Subject causes Obj to receive Obj2
Target Domain: Subj communicates Obj2 to Obj
Subj: speaker
Obj: listener
Obj2: information]

A related metaphor involves understanding perceptions as entities which move toward the perceiver. The perception is understood to be perceived upon "reception". Evidence for the metaphor includes the following:

The view *knocked me over.*
I *caught* a glimpse of him.
I *missed* that sight.
I *had* a view of the orchestra.
He *let me have* a look.

This metaphor licenses the following examples:

(95) He showed Bob the view.
(96) He gave Bob a glimpse.

[Source Domain: Subject causes Obj to receive Obj2
Target Domain: Subj acts to cause Obj to see Obj2
Subj: actor
Obj: perceiver
Obj2: perception]

Another metaphor involves understanding actions that are intentionally directed at another person as being entities which are transferred to that person. Evidence for the metaphor includes:

He *blocked* the kick.
He *caught* the kiss she *threw to* him.
All he *got from her* was a goodbye wave.
Joe took a punch from Bill.
She couldn't *get a smile out of him.*
She *threw* a parting glance *in his direction.*
She *targeted him* with a big smile.
Bob *received* a slap/kick/kiss/smile from Jo.

This metaphor licenses the following expressions:

(97) She blew him a kiss.
(98) She shot him a keep-quiet look.
(99) She gave him a wink.
(100) Jo gave Bob a punch.
(101) She threw him a parting glance.

This class can be represented as follows:

Name of Metaphor: Actions which are directed at a person are Entities which are Transferred to the Person.

[Source Domain: Subject causes Obj to receive Obj2
Target Domain: Subj performs an action (Obj2) which is directed at Obj
Subj: actor
Obj: recipient
Obj2: action]

Another metaphor extends the use of the ditransitive to the speech act domain. This metaphor is used in reference to the situation where a person agrees to accept certain facts and assumptions. The metaphor involves understanding these facts and assumptions as objects which are given to the person who is making the argument to be used in the building

of the argument. (The idea of *building an argument* assumes another metaphor, Arguments are Constructed Objects). If the facts or assumptions do not need to be agreed to because they are in some sense self-evident, then they may be called "givens" where no explicit "giver" is necessary. We can title this metaphor, Facts and Assumptions that are Agreed to are Objects which are Given. Evidence for the metaphor includes the following expressions,

I'll *let you have that much.*
I don't want to *give up* that assumption.
Accept that as a *given.*
If you *take* that assumption *away*, you don't have a great argument.
If you don't *have* that assumption, you're not *left with much.*
Even *granted* that, your argument is still full of holes.

This metaphor licenses the following:

(102) I'll give you that assumption.
(103) I'll grant you that much of your argument.

Name of Metaphor: Facts and Assumptions that are Agreed To are Objects which are Given.

[Source Domain: Subject causes Obj to receive Obj2
Target Domain: Subject agrees to accept Obj2 for the sake of Obj's argument
Subj: actor
Obj: builder of an argument
Obj2: fact or assumption]

The final metaphor to be discussed here licenses ditransitive expressions which are often assumed not to involve a possessor at all. The following examples come from Green 1974:

(104) Crush me a mountain.
(105) Cry me a river.
(106) Slay me a dragon.
(107) They're going to kill Reagan a commie.

These expressions can be seen to involve metaphorical transfer once the following metaphor is recognized. The metaphor involves understanding actions which are performed for the benefit of a person as objects which are transferred to the person. The metaphor is exemplified in the following expressions:

He *owes* you many favors.
By slaving away quietly for him, she has *given* more than he deserves.
The senator claimed never to have received any favors.

He always *gets* what he wants out of people.
He graciously *offered* a ride to the airport.

The mapping of this metaphor is different from the others in that the source domain of this metaphor is not "Subj causes Obj to receive Obj2" as it was in each of the other metaphors. In particular, the second object is not the received object in the mapping; rather it is the action performed that is the received object. This metaphor, then represents an extended use of the ditransitive. And, as we might expect, there is wide dialectal variation in the degree of acceptability of these expressions. In fact, these cases are subject to their own special constraints. As noted previously, they are more acceptable as commands:

(108) a. Cry me a river.
b. ?Sally cried me a river.

And they are more acceptable with pronouns in first object position:

(109) ?Cry Joe a river.

These cases can be seen to be a limited extension from the central sense of the construction. This class can be represented as follows:

Name of Metaphor: Acts that are Performed for the Benefit of a Person are Objects which are Given to that Person.

[Source Domain: Subject causes Obj to receive an Object
(not necessarily designated by Obj2)
Target Domain: Subject Performs an Action for the Benefit of Obj
Subj: actor
Obj: person whom action is performed for the benefit of
Obj2: obj acted on by Subj]

Exceptions

There remain a few ditransitive expressions that are exceptional.

Some uses of *ask* can be fit into the pattern described above if they are interpreted as instances of the Conduit metaphor. For example,

(110) She asked Sam a question.

can be understood to mean she caused Sam to "receive" a question. However, other uses of *ask* are clearly exceptional, for example,

(111) She asked Sam his name/his birthday/his marital status.

This type of example clearly does not imply that Sam potentially receives

his name, his birthday or his marital status. Grimshaw (1979) discusses these "concealed questions" at some length. She argues that noun phrases such as those above, that are semantically questions, can appear as arguments of any verb which subcategorizes for an NP in that position and which selects for a question complement. Thus example (111) is motivated by factors which are independent of the ditransitive construction, resulting in a case of "target-structure conspiracy" in the sense of Green (1973).

Forgive and especially *envy* as used in:

(112) He forgave her her sins.
(113) He envied the prince his fortune.

are also exceptional. The subjects in these cases are not causal and no reception is involved. However, these predicates have illuminating semantic histories. *Forgive* and *envy* historically had senses that were closely related to *give*. *Forgive* used to mean "to give or grant" (OED: 452). *Envy* used to mean "to give grudgingly" or "to refuse to give a thing to" (OED: 232). This of course is not evidence that *forgive* or *envy* are part of the synchronic semantic pattern outlined above. But the historical facts do suggest that these predicates were at least at one time associated with this sort of pattern. These facts also of course suggest that the construction can occasionally be frozen without continuing reference to the original semantics.

However, it seems reasonable that syntactic change should tend toward patterns that are more transparent to the speaker. If the construction with the semantics I have outlined is psychologically real, then it would be natural for odd cases of ditransitives involving *forgive* and *envy* to drop out of use. And in fact I myself find archaic sounding sentences involving *forgive* and *envy* much more acceptable than modern-sounding sentences. For example:

(114) a. She forgave him his sins.
b. ?*She forgave him his goof.
(115) a. She envied him his vast fortune.
b. ?*She envied him his extensive stock portfolio.

Nonetheless, *envy* and *forgive* are synchronically exceptional, and must be learned individually.[13]

Prepositional paraphrases

An analysis of the ditransitive construction would not be complete without some reference to the existence of prepositional paraphrases. That is, many ditransitive expressions can be paraphrased using either *to* or *for*:

(116) a. John gave Mary an apple.
b. John gave an apple to Mary.
(117) a. John baked Mary a cake.
b. John baked a cake for Mary.

The question that arises, on the account presented here, is not why some verbs are allowed to undergo a lexical or syntactic rule that alters the semantic structure or the subcategorization frame of the verb, as it is typically taken to be. Rather, the question becomes: how are the semantics of the independent constructions related such that the classes of verbs associated with one overlap with the classes of verbs associated with another?

From the rephrasing of this traditional question, it becomes clear that a full answer requires an independent semantic analysis of the constructions associated with the prepositional paraphrases. Although such an analysis is being undertaken as part of a larger project in which several argument structure constructions and their interrelations are analyzed (Goldberg, in progress), a full analysis is not yet at hand. However, some initial reflections may be in order.

There is a metaphor in English that involves understanding possession as being located next to, transferring an entity to a recipient as causing the entity to move to that recipient, and transferring ownership away from a possessor as taking that entity away from the possessor. Evidence for the existence of such a metaphor includes:

They *took* his house *away* from him.
He *lost* his house.
Suddenly several thousand dollars *came into* his possession.

This metaphor is motivated by the fact that giving typically involves movement from a possessor to a recipient; however it is clear that such motion is not literally implied by the transference of ownership. For example, in,

(118) She gave her house to the Moonies.

no actual transfer of the house is necessarily implied.

The relevance of the metaphor for the issue at hand relates to the fact that prepositional paraphrases involving *to* can be seen to be a subset of a more general construction which can be termed the Caused Motion construction: [Subj [V Obj PCOMP]], where PCOMP is a predicative PP (this construction was mentioned briefly above). This construction can be seen to involve a family of related senses, much like we have seen for the ditransitive, but the central sense of this construction can be argued

to involve the caused motion of the Obj referent along the path designated by PCOMP. As in the case of the ditransitive construction, metaphorical extensions of this basic sense are allowed. The metaphor just discussed, then, can be seen to provide a metaphorical extension of the basic sense of caused motion to the domain of possession. This is why we find a fair degree of overlap between classes of verbs associated with the ditransitive, and with the caused-motion construction.

At the same time, it is clear that not all expressions can be alternately expressed using either of the ditransitive or the caused-motion constructions. To some extent, these differences stem from the differences in the semantics associated with the particular constructions. For example, expressions involving verbs of refusal (e.g., *refuse*, *deny*) cannot occur with prepositional paraphrases because they are not readily understood in terms of caused motion.

(119) *She refused a raise to Joe.
(120) *His mother denied a cake to Billy.

Conversely, there are cases of caused motion that do not involve a recipient:

(121) He kicked the ball to the endzone.

As we would expect, since we have argued that the ditransitive construction necessarily involves a recipient, such expressions cannot be expressed in the ditransitive construction:

(122) *He kicked the endzone the ball.

On the other hand, there are cases which could conceivably be associated with both constructions, and yet are not. For example, although verbs of continuous causation, such as *push*, *carry*, *pull*, etc., can be associated with the caused-motion construction, they cannot be used in the ditransitive construction. What needs to be born in mind to understand these cases, is that these constructions do not generalize as broadly as possible; instead, as was discussed at length in the first part of this paper, particular narrowly defined classes of verbs and particular metaphors are conventionally associated with the constructions.

Conclusion

I have argued that the semantics associated with the ditransitive syntactic pattern is more felicitously associated directly with the construction as a whole than with the lexicosemantic structure of the verbs. This allows us

to view the alternation between the ditransitive and prepositional paraphrases as arising from a semantic overlap between the two constructions. It is a fact about the world that the semantics associated with the two patterns are related; we no longer require a rule in the grammar mapping one pattern onto the other. In this way we need not posit an unwarranted asymmetrical relationship between the two argument structures. Moreover, by directly associating the semantics with the argument structure, we avoid the necessity of positing *ad hoc* new verb senses that appear only with this argument structure.

The semantics involved has been shown to be highly specific. In the central sense, the argument structure is associated with a scene of transfer between a volitional agent and a willing recipient. Permutations on this basic sense can be identified with narrowly defined subclasses of verbs. Following Gropen et al., the subclasses are defined by specific morphophonological and semantic criteria; in addition, systematic metaphors have been shown to license extensions from the basic sense of literal transfer.

A larger project is currently underway in which several argument structure constructions are analyzed (Goldberg, in progress). It is argued that the ditransitive is by no means unique in being associated with a particular polysemous semantics and allowing metaphorical extensions (see also Haiman 1978; Emanatian 1990; Lakoff 1987; Sweetser 1990). In this work, several questions raised by a constructional approach to argument structure are addressed, including the nature of verb representation and the interrelations between various constructions.

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Notes

1. I would like to thank Claudia Brugman, Jane Espenson, Michele Emanatian, Paul Kay, Jean-Pierre Koenig, Laura Michaelis, Steven Pinker, Eve Sweetser, Robert Wilensky and especially Charles Fillmore and George Lakoff for their extremely helpful criticisms and suggestions.
All errors are solely my own.
2. It is important to note that, for purposes of exposition, I use grammatical relation terms to refer both to the linguistic entity and the referent of the linguistic entity. Thus for example, in saying "the first object must be a recipient", I intend that there is a constraint on the first object position such that its referent must be understood as a recipient.
3. This class and the class of verbs of permission (*permit, allow*) actually have a slightly different status in the theory proposed by Gropen et al. and Pinker (1989), because the

verbs in this class do not alternate with prepositional paraphrases. They are also unique in not forming productive subclasses:

a. Sally permitted/allowed/*let/*enabled Bob a kiss.
b. Sally refused/denied/*prevented/*disallowed/*forbid him a kiss.

One way to account for the non-productivity of these classes is to stipulate that a necessary condition on a subclass being productive is that the subclass have more than two members (Pinker 1989).

4. Here and below, I assume that the second NP is a type of grammatical object distinct from the direct object. In doing so, I am following the analysis explicitly argued for in Dryer (1986), and the analysis implicit in labeling the second object Obj0, as is done in LFG (e.g., Bresnan and Moshi 1989). Evidence that the second NP is a type of object comes from the fact that it lacks a preposition, that it is passivizable in British English, and that it is notionally a direct object. Evidence that it is distinct from a direct object comes from the fact that it obligatorily follows the first object when both are present, and that it is not passivizable in American English.
5. The *give*-class of verbs may be viewed in fact as motivating the existence of the construction. That is, language users may note a correlation between the syntactic form and the semantic interpretation associated with expressions involving these lexical items. Speaker are then able to abstract away from the particular lexical items, allowing the construction to achieve independent status. Once this occurs, the construction can be used to impose its meaning on other novel lexical items. (I thank Charles Fillmore for suggesting the idea that lexical subcategorization frames may motivate constructions.)
6. It has been suggested to me (Dirk Geeraerts, personal communication) that some of these links may be interpretable as *metonymic* extensions from the central sense.
7. Subjects which metonymically stand for volitional beings are also acceptable:

   a. The bank loaned him the money.
   b. His company promised him a raise.
   c. The orchestra played us the symphony.

8. I would like to thank Dirk Geeraerts and Alan Schwartz for indicating that this metaphor could be stated in terms of transfer.
9. See for example, Green 1974, p. 103.
10. This particular succinct example comes from an anonymous reviewer of an earlier draft.
11. Many theories capture this constraint by postulating a beneficiary role for the first object position of expressions which are paraphrasable with a benefactive *for* phrase.
12. These final two examples happen to be based on metaphors. What is relevant here is that successful (metaphorical) transfer is implied, i.e., (89) implies that Chris has a headache, and (90) implies that Bill received a kick.
13. These facts suggest that a diachronic study of the ditransitive construction may yield valuable insights. They also raise the question of the exact extent to which the pattern described here is psychologically real and not a diachronic generalization. Addressing these issues would require diachronic and experimental studies, which, although I hope to take up at some point in the future, go beyond the scope of the present work.

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