THE GRAMMATICAL STATUS OF THE ENGLISH DATIVE ALTERNATION

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ABSTRACT

The Grammatical Status of the English Dative Alternation
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This thesis is concerned with the syntactic alternation between structures of the form $X\text{-}V_i\text{-}NP_j\text{-}NP_k\text{-}Y$ and structures of the form $X\text{-}V_i\text{-}NP_k\text{-}P\text{-}NP_j\text{-}Y$ (where 'P' is either 'to' or 'for'). Two theories of this alternation are considered: on one theory, in cases where the alternation is applicable, one of these structures is base-generated and the other is derived by means of transformation; on the other theory, both structures are base-generated and the relation between them is characterized by means of a lexical redundancy rule which reduces the independent information content of the lexicon (along lines proposed by Jackendoff). The thesis is divided into three parts. In Part One, on the basis of a detailed semantic analysis of sentences which conform to one or the other of these structures, the following conclusions are reached: first, that independent of the alternation in question, both structures are generated by the phrase-structure rules of the base; second, that there are semantic restrictions on the alternation; third, that semantic interpretation is not always invariant under the alternation; fourth, that semantic considerations alone cannot provide sufficient conditions for the applicability of the alternation. In Part Two, syntactic considerations which bear on the choice between these two hypotheses are discussed. The main conclusion of this part is that with respect to syntactic operations, there is no evidence that favors a distinction between base-generated instances of the double object construction and transformationally-derived instances of the double object construction. In Part Three, a variety of arguments are presented which favor the theory based on a lexical redundancy rule over a transformational theory.

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To Tanya Reinhart

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Since the advent of the theory of transformational generative grammar, there has been a presumption that a transformational analysis is the appropriate way of handling English sentences related by what I shall call throughout this work the 'dative alternation', as in:

1a) John gave a book to Mary.
b) John gave Mary a book.

2a) John bought a car for Mary.
b) John bought Mary a car.

In the context of certain grammatical theories, such a presumption has some justification. In particular, if transformations are the only device in a grammar by which shared distributional regularities can be stated (or shared semantic properties, for that matter), postulating a dative transformation offers a way of accounting for some of the shared properties of sentences of the prepositional dative form (e.g., (1a), (2a)) and the corresponding sentences of the double object structure (e.g., (1b), (2b)). On the other hand, if we enrich grammatical theory to such an extent that such regularities can be stated in other ways, the question arises as to what is the appropriate way in which to state the relation between such pairs of sentences.

Chomsky (1972, p. 13) states the general problem in the following way:

> In general, it is to be expected that enrichment of one component of the grammar will permit simplfication in other parts. Thus certain descriptive problems can be handled by enriching the lexicon and simplifying the categorial component of the base, or conversely; or by simplifying the base at the cost of greater complexity of transformations, or conversely. The proper balance between various components of the grammar is entirely an empirical issue. We have no a priori insight into the "trading relation" between the various parts. There are no general considerations that settle this matter....

Our inquiry into the dative alternation is thus a special case of this general problem.

In particular, we shall attempt to adjudge the relative merits of two hypotheses. On one hypothesis, the relations between the sentences of (1), and the sentences of (2) as well, is accounted for by a transformation, i.e., an operation which maps phrase-markers into phrase-markers. On this hypothesis, then, sentences (1a) and (1b) have a common deep structure, as do the sentences of (2). On the second hypothesis, all four sentences have distinct deep structures. In other words, the verb give is subcategorized in two distinct ways, and will consequently satisfy the conditions for lexical insertion into both the prepositional dative structure and the double object structure. On this hypothesis, the relation between the pair of sentences in (1), as well as the relation between the pair of sentences in (2), will be stated by means of a lexical redundancy rule, essentially along the lines of Jackendoff's proposals concerning morphology (cf. Jackendoff 1974a). If it is correct to assume, as I have, that linguistic theory provides both of these ways of expressing regularities of various kinds,

it is of some interest to ask not only which device is to be preferred for the expression of the dative alternation, but also whether there are general principles which enable us to decide for any given phenomenon what is the preferred way of expressing it in a grammar.

In the case of the dative alternation, it is obvious that in many respects the two hypotheses have equivalent empirical consequences. Nevertheless, we shall argue at the conclusion of this work that there exist a variety of considerations, all of which support the postulation of a lexical redundancy rule over the postulation of a transformational rule to account for the dative alternation. This conclusion arises from considerations based on factors implicit in the nature of the two hypotheses we have proposed. For example, in a lexical entry, the phonological representation of a word is associated with morphological, categorial, subcategorizational, and semantic information. It is apparently the case that transformations need only refer to a subset of this information. In particular, if it is possible to restrict transformations so that they can refer only to categorial information, it is methodologically desirable to do so. Thus, if in the general case transformations operate only on the basis of categorial distinctions and it is found that the domain of the dative alternation is constrained on other grounds, then a transformational solution of the dative problem is not to be preferred.

Another relevant factor pertains to the interaction

of the dative alternation with the various rules that constitute the transformational component of the grammar. Since on the redundancy rule hypothesis, there is no distinction between those instances of the dative constructions which are base-generated and those which are transformationally derived, this theory entails that the alternation is totally independent of whatever rules makes up the transformational component. Consider the interaction of there-insertion and the passive transformation, in which we find there-insertion applicable to the output of the passive, as in There was a demonstrator arrested by the police, while we find the passive applying to the output of there-insertion, as in There was believed to have been a riot. If we could find evidence of this kind of interaction involving the dative alternation, the redundancy rule hypothesis would be clearly falsified and the transformational hypothesis would be perferred. In the absence of such interaction, however, methodological considerations favor the redundancy rule hypothesis, as we shall in fact argue in Part Three.

Thus, although the two hypotheses we consider are equivalent with respect to the expression of some of the regularities manifested by the various dative constructions, there remain ways of distinguishing the two hypotheses. In this work, the investigation of this problem is carried out in three parts.

Part One deals with the semantic properties of the dative constructions and the role semantic considerations play

in characterizing the domain of the alternation. The groundwork for this inquiry involves a detailed description of certain semantic aspects of sentences which belong to the set of dative constructions: in particular, we attempt to isolate and characterize a certain property of those verbs which occur in the double object construction but not in the prepositional dative construction.

In particular, we argue in section 1 of Part One that sentences employing the verb give fall into two general classes on the basis of certain structural characteristics of the set of truth-conditions assigned to each sentence (on each interpretation). Aspects of these two classes are further explored in sections 2 and 3. Of particular interest is the fact that in general, sentences whose interpretation falls into the second of these two classes do not have a reflex in the prepositional construction (although the verb in question may occur in both the prepositional structure and the double object structure). This provides an indication that the double object structure is base-generated, at least for some cases. In section 4, we show that the verbs teach and show have certain uses in which they are restricted to the double object structure, and, furthermore, that the interpretation of the sentences of this kind falls within the general characterization of the second class discussed above. In section 5, the role of time and modality in the semantic interpretation of the dative constructions is discussed and we attempt to relate aspects of this discussion

to the two classes we isolated initially. Finally, in section 6, the prepositional constructions are considered, and we discuss the general question of the role of semantic considerations in the formulation of the domain of the dative alternation--a question that arises whether the alternation is stated by means of a transformation or accounted for on the basis of a lexical redundancy rule. We shall argue that certain sentences which meet the syntactic characterization of the domain of the dative alternation fail to meet certain necessary semantic criteria, and propose that the domain of the alternation be formulated in such a way that reference to these criteria is possible. We also argue, however, that it is extremely implausible that sufficient conditions (for the applicability of the alternation) based on semantic properties can be formulated. For this reason, we propose a morphological constraint which further limits the domain of the dative alternation. At the conclusion of Part One, we propose a formulation of the dative alternation and review the treatment of a variety of cases.

Part Two takes up various syntactic issues which are of relevance in ascertaining the value of postulating a dative transformation. The dative constructions betray a variety of syntactic idiosyncracies. We whall be interested in what bearing these idiosyncracies have on the transformational hypothesis: do aspects of the syntactic behavior of the dative structures follow in a natural way from the postulation of a dative transformation? Is there any way in which those instances of

the dative constructions which are base-generated can be distinguished from those which are putatively transformationally derived? We concentrate on four areas: pronominal restrictions on the double object construction; the interaction of the dative alternation and the passive transformation; the interaction of the verb + particle construction and the dative constructions; and movement constraints on the indirect object. For each of these cases, we argue that the syntactic facts in question provide no evidence in favor of a transformational theory of the dative alternation. Our investigation of these syntactic problems also bears on certain other problems of linguistic theory.

Part Three is devoted to the evaluation of the two hypotheses we consider. As I said above, there are a variety of considerations, based on the material of the first two parts of this thesis, which support the redundancy rule hypothesis over the transformational hypothesis. If this is correct, it suggests that we explore the properties of these two types of rules further in the hope that by distinguishing them deeper questions in linguistic theory may be resolved.

I: SEMANTIC ASPECTS OF THE DATIVE CONSTRUCTIONS

0. The purpose of this chapter is to give a correct account of the semantic properties of the sentences which occur in one or the other of the dative constructions, and to assess what influence, if any, these semantic properties exert on questions of syntax. Ultimately, I will be concerned with two principal questions: first, is there some semantic property or set of properties such that, given that a verb occurs in one of the dative constructions and has this set of properties, it follows that this verb does (or does not) occur in the other dative construction; second, given that a verb occurs in both constructions, is it in general the case that the various pairs of sentences which differ only in this syntactic respect are equivalent.

I shall argue that, with respect to the first question, there is a strong correlation between certain semantic properties of a given set of verbs and certain syntactic facts, i.e., that this set of verbs occurs only in the double object construction. If this is in fact the case, it provides a principled reason to generate at least some cases of the double object construction in the base. I shall further argue that if a verb occurs in the prepositional dative construction, its semantic properties, though not entirely irrelevant, are not sufficient to determine whether or not it occurs in the double object construction. With respect to the second question, I shall present a variety of cases

which demonstrate that it is not always the case that pairs of sentences which differ only in that one is an instance of the double object construction while the other is an instance of the prepositional dative construction are semantically equivalent.

0.1 Since we will be trafficking shortly in 'semantic properties', and since semantic properties are notoriously the subject of controversy, it is important to clarify to some extent at least the semantic framework adopted here. The fundamental notion in what follows is that of truth, and the fundamental method I have adopted is the postulation of truth-conditions, the satisfaction of which is essential to the truth of the sentence to which the truth conditions are assigned. I am far from convinced that truth is the sole fundamental notion for linguistic semantics and I make no claim in what follows to have given a complete or exhaustive semantic analysis of the dative constructions: I only harbor the hope that the analyses presented are descriptively correct.

Although I shall not argue in depth for the position I adopt here with respect to truth-conditions, there are several considerations which in my opinion justify this position. For oen thing, I can envision no adequate theory of meaning which does not incorporate an equivalent to truth-conditions. Another consideration is based on certain problems which arise concerning the status of semantic intuitions.

Among our linguistic abilities are the ability to

apply (or refuse to apply) a given sentence to a given state of affairs and the ability to recognize the truth or falsity of a sentence relative to a given situation.[1] Of importance is the constrast between intuitions concerning applicability and intuitions about the meaning of sentences in isolation from situations of which they are true or false. For instance, a minimal condition on synonymy is that if two sentences A and B are synonymous, then for any given state of affairs (or model), they must have the same truth value. But there are cases in which judgments of synonymity are rescinded. In particular, this occurs if we are able to construct a model for which sentence A and sentence B have distinct truth values. In other words, on the basis of intuitions about applicability (or satisfaction with respect to a given model), we can discover that two sentences which we once considered synonymous are in fact not synonymous. However, it would seem to be impossible to discover that two sentences are synonymous (except in cases which involve stipulated definitions). It is for this reason that I consider intuitions concerning applicability to have a different status than intuitions concerning synonymity (and related notions[2]), and concentrate on the problem of postulating sets of truth-conditions.

If the analyses which I shall present below are correct, then the truth-conditions posited for a given verb are necessary conditions for the sentences in which that verb occurs to be true.[3] I make no claim to have given sufficient conditions:

I see no way in which to tell when one has arrived at a complete set of such conditions. I must admit, however, that I would be surprised in some cases if it is found that the conditions which I postulate are not sufficient.

0.2 I shall postulate certain predicates and relations that are claimed to hold if the sentence in question is true. I represent these predicates and relations with single capital letters, and I represent the arguments of these predicates and relations in various ways: in the simplest cases, in which the argument is merely the referent of a certain NP, we shall write (in the case of a one-place predicate) either '$P(NP_a)$' or merely 'P(a)'; in more complicated cases, certain changes in this notation may be introduced. The relations employed are of various kinds, including two-place relations between individuals, as in 'R(a,b)', relations between an individual and a proposition, as in 'R(a, S(b,c))', and relations between propositions, as in 'T(R(a,b), S(c,d))'. For the most part quantifiers are simply left out, even when they are essential to a proper translation into first-order predicate calculus.[4] The purpose of our notation is not formal rigor, but rather as a means of gaining insight into semantic structure.

As usual, then, the truth-conditions will be stated in a meta-language. The question invariably arises as to the interpretation of the symbols employed in the meta-language. In general, I see no reason to suppose that the various

predicate- and relation-symbols of the meta-language will have any single best translation into the object language. In fact, we shall find that in some cases a clear characterization of the interpretation of these symbols is difficult to attain.

Ideally, one would like to be able to give an interpretation of the symbols of the meta-language which was completely independent of the vocabulary of the object language. Whether this is possible even in principle in the case in which the object language is one's own natural language can well be doubted. Yet one may hope that such dependence on the object language can be reduced to a minimum. One way of reducing this dependence is to attempt to analyze the vocabulary of the object language in terms of a small set of primitives which are themselves, however, dependent on the object language for their interpretation. Such a manoeuvre, though perhaps useful, does not face the problem squarely. A different tack would be to attempt to provide each primitive symbol with a characterization which would be clear enough so that the concept which the primitive symbol represents is graspable (and perhaps even communicable) without essential reliance on any particular item of the vocabulary of the object language. Thus, while reliance on the object language in giving the characterization would still be indispensable, the dependency on particular words would be reduced to a minimum. Such difficulties are a problem for any theory of the semantics of natural language.

1.0 For the purposes of our inquiry, the most important semantic aspect of a verb which occurs in the double object construction concerns certain structural properties of the set of truth-conditions assigned to that verb.[5] The most versatile of all the double object verbs is give, and we shall begin by investigating this verb.

1.1 I will begin with a case which is multiply ambiguous, for in such a case it is perhaps simplest to see the necessity for sharply separating the semantic properties of each reading. Thus, consider the sentence:

1) Nixon gave Mailer a book.

On one reading, (1) asserts that the ownership of the book passed from Nixon to Mailer; on another reading, (1) is compatible with a situation in which Nixon merely handed the book to Mailer, and questions of ownership are simply irrelevant; on a third reading, (1) is compatible with a situation in which Mailer wrote a book which he wouldn't have been able to write if it hadn't been for Nixon.

1.1.1 More precisely, the first reading of (1) seens to involve the following elements:

2) i) immediately prior to the tense-referent, Nixon owned a certain book.

ii) at the time specified by the tense, Nixon acts in such a way as to transfer the ownership of the book to Mailer.

We can formalize these conditions as follows, where 't_0' represents the tense-referent, 'n' represents Nixon, 'm' represents Mailer, and 'b' represents the book in question:

3) i) prior to t_0, O(n,b)
ii) at t_0, A(n)
iii) at t_0, M(A(n), O(m,b))

The interpretation of these conditions is relatively straightforward. The relation 'O(x,y)' holds if and only if x owns y. In other words, the variable 'x' ranges over human individuals and the variable 'y' ranges over objects (both physical and abstract, as we shall see later) in the social domain. Moreover, the relation 'O(x,y)' is exhaustive in the following sense: if the variables 'x' and 'w' range over human individuals, and the variable 'y' ranges over objects in the social domain, then

4) $(Ax)(Ay)((O(x,y)) \rightarrow (Aw)((O(w,y)) \leftrightarrow (x=w)))$

This meaning postulate rules out sentences like:

5) #John owns this bicycle and so does Mary.

It applies only after the operation of the scope component.[6]

The predicate 'A(x)' is to be interpreted as follows:

x executes an intentional act within a domain of social action. The relation 'M(X,Y)' is to be interpreted as follows: as a result of X, Y holds. I have given the predicate 'A(x)' a rather abstract interpretation, in order to avoid the problem of specifying the myriad ways in which the transferrance of ownership is actually carried out--the signing of a piece of paper, any one of a large variety of linguistic acts, any one of a large variety of gestures which achieve a tacit understanding between the gesturer and those to whom these gestures are directed, etc. Such a specification, even if feasible, would miss the point that what is important is only that in order for a sentence like (1) to be true on the interpretation that we are considering, the referent of the subject of (1) need only have acted in such a way as to ensure that the relation 'O(x,y)' holds of the respective referents of the indirect object and the direct object. In conjunction with the meaning postulate (4), a consequence of this is that the relation 'O(x,y)' no longer holds of the referent of the subject and the referent of the direct object.

1.1.2 We turn now to the second reading of (1), on which the book changes hands without the ownership being affected. The set of truth-conditions which we shall assign to (1) on this reading is quite similar to (3), the set postulated to account for the first reading. There appear to be two crucial distinctions, however. One involves the replacement of the relation 'O(x,y)' by another relation, call it 'C(x,y)'. The

other involves the fact that this reading seems to hold of situations only where there is an 'uptake' on the part of the referent of the indirect object.[7]

We want the relation 'C(x,y)' to range over a variety of cases, from cases in which x grasps y with the hand to cases in which x has y at x's disposal to cases in which x has y among his possessions. Thus we have setences like the following, which on our account are all instances of the second reading:

6) I gave John my bicycle (for the afternoon).

7) I gave John my telephone number.

8) I gave John the paper he wanted: I left it in his mailbox.

It has been pointed out, by Frege and C.I. Lewis for example, that as the extension of a concept increases, its content diminishes. Nevertheless, we shall represent the various relations which are pertinent to a more careful analysis of (6-8) by the symbol 'C(x,y)', since a more precise delineation of the concepts involved does not seem to affect our program in any way.

The second question raised above concerns the 'uptake' of the referent of the indirect object: by 'uptake', I mean that the indirect object[8] must accept the custody of the direct object, either by physically grasping it, or by acknowledging that the transferrance of custody has taken place, or in some cases merely by convention. Consider the following circumstance:

A comes into B's office and lays something on B's desk; if B is totally unaware of A's presence and in no way acknowledges the presence of the article in question, then it seems to me inappropriate to say that A gave B the article in question (unless some prior arrangement had been made between A and B). On the other hand, if some prior arrangement had in fact been made, or if B acknowledges that he accepts the article (in any one of a number of ways), then we might well say that A gave B the article. If this is correct, then it will not suffice to cast the truth-conditions of this interpretation of sentences like (1) merely in terms of the physical location of an object with respect to various individuals.[9] Rather, we must take account of the social agreement--tacit or not--which holds between subject and indirect object.

Assuming all of this to be correct, then, we write:

9) i) prior to t_0, C(n,b)

ii) at (or prior to) t_0, A(n) & A(m)

iii) at t_0, M((A(n) & A(m)), C(m,b))

In other words, our analysis states that in order for a sentence of the form <u>a gives b c</u> to hold on the second reading, it must be the case that, first, a has custody of c; second, that a and b arrive at least at a tacit agreement; and, finally, that as a result of this agreement, b has custody of c.

In some ways, this schema is not altogether satisfactory, since in some cases the agreement itself does not suffice

to effect the transferrance of custody. I do not know exactly how to improve the analysis: it may be the case that some kind of physical action is always required. The difficulty stems from the fact that, as long as the agreement has been reached (or conventionally holds, as in the case of (8), where merely depositing an object in a mailbox seems to be sufficient) this physical action may be undertaken by either the subject or the indirect object: the subject may leave the article in question at some prearranged location, or the indirect object may take the article in question from its location, or the article in question may remain in the same physical location. Below, we try to give examples which illustrate the second and third cases; an example of the first case is fiven in (8):

10) John gave Harry a copy of the paper: he left it on his desk and presumably it was Harry who took it.

11) John gave Harry his bicycle for the day: but the bicycle just sat there the whole day. I guess Harry didn't need it.[10]

In other words, if it is desirable to treat these cases in a unitary fashion, then whatever physical action may be involved is subsidiary to the agreement arrived at on the part of the subject and the indirect object: the cooperative nature of the enterprise is essential. It is this characteristic which distinguishes this use of <u>give</u> from two other, very general,

verbs: offer and take.[11] Like give, offer is equivocal concerning whether ownership or custody is at issue, but unlike give, the truth-conditions on offer necessitate only that the possessor of the article in question is willing to give it up to another: no agreement or 'uptake' is required on the latter's part. Similarly, take is applicable to a wide range of circumstances in which an article undergoes a change in possession. The salient distinction is that there need be no act of agreement involved, in the case of take. Thus, although the range of circumstances for which sentences using give are true intersects with those for which sentences using offer or take are true, they must be distinguished.

1.1.3 We said above that the third reading of (1) is compatible with a situation in which Mailer wrote a book which he wouldn't have been able to write if it hadn't been for Nixon. Rather than speaking of a single 'reading' in such cases, it might have been more appropriate to speak of a family of possible interpretations, for there is considerable variability in the characterization of the relation between the indirect object and the direct object. I shall illustrate this shortly. The salient semantic property of this family of readings, however, is not the range of relations which hold between the indirect object and the direct object, but the fact that for the purposes of analysis, no relation holds between the subject and the direct object at all: rather there is a relation of a

causal type which pertains between the subject and the relation holding between the indirect object and the direct object. In other words, the structure of the truth-conditions for such sentences is simply as follows:

12) at t_0, S(n, R(m,b))

The question now at hand is how to properly constrain the interpretation of the relations 'S(x,Y)' and 'R(w,z)'.

1.1.3.1 One of the properties which we should like to attribute to the relation 'S(x,Y)' is that it be roughly of a causal nature. Without attempting to present a characterization of the various (linguistic) senses of causation, we may nevertheless ask whether we want to construe 'S(x,Y)' as true only if the existence of x is a sufficient condition for Y to hold, or whether 'x' represents a necessary condition for the truth of Y. Neither interpretation of 'S(x,Y)' is very satisfactory. For instance, it's clear that in many cases, the interpretation based on sufficiency is out of place: in sentence (1), for example, the truth of the sentence might well depend on many other factors than Nixon's existence--Mailer's talents, his energy, and so forth. But the construal based on necessary conditions is perhaps also not quite to the point, since Mailer might easily have written some other book even if Nixon had never existed. We might think that he wouldn't have written the particular book he did write if it hadn't been for Nixon,

but this tack constitutes only an evasion of the issue which is open to other objections. For example, we find sentences like:

13) The war years gave Mailer his first big success.

It makes little sense to say here that if it hadn't been for the 'war years', Mailer would not have attained the particular 'big success' that he did attain: the problem here is one of individuation.

Regardless of what the correct analysis of (linguistic) causation may be, however, we may still distinguish the role the subject plays in the interpretation of (1) on the third reading from the role it plays in the interpretation of the first two readings. We have already mentioned the fact that, on the third reading, it is apparently the case that no relation whatsoever is required to hold between the subject and the direct object, in contradistinction to the first two readings. Another indication of this is the relative freedom of selection of the subject for sentences which have the third reading as opposed to the first two readings. An example of this is (13) above, which has no readings corresponding to the first two readings.[12] Further examples of this freedom of selection are:

14) Interviewing Nixon gave Mailer a book.

15) The American program to land a man on the moon gave Mailer a book.

In neither of these cases is either of the first two readings available.

1.1.3.2 When we turn to the relation 'R', things are not much more perspicuous. The most obvious way to paraphrase sentence (1) under the third reading is as something like:

16) If it hadn't been for Nixon, Mailer wouldn't have written a (certain) book.

Yet, even assuming that such a paraphrase is correct in this case, its correctness is based to a large extent on our knowledge of the world, rather than on linguistic knowledge alone: we are likely to know in this case that "Mailer" probably denotes Norman Mailer, a well-known author. Yet, depending on the referent of the indirect object in such sentences, paraphrases can easily vary. Consider:

17) A series of accidental circumstances gave Knopf & Co. The Magic Mountain.

Here, we might wish to say, as a paraphrase, that if it hadn't been for those accidental circumstances, Knopf & Co. wouldn't have had the rights to publish The Magic Mountain.

If we are interested in paraphrases of the form,

18) If it hadn't been for a, b wouldn't have V'ed c.

The content of V is probably determined to some extend on knowl-

edge we have of the world. At least the plausibility of the various paraphrases offered would seem to support this view, since they are quite distinct. Furthermore, with respect to (17), if we have no idea what 'Knopf & Co.' or 'The Magic Mountain' refer to, our choice of paraphrase--if indeed we have one available--is likely to be quite different. In spite of this, however, we might still want to say that there is some notion of intrinsic connection between the indirect object and the direct object.[13] Another way of putting this point is as follows: the semantic properties of the truth-conditions assigned to sentences which have what I have called the third reading provide a way of structuring the factual knowledge at our disposal--the exact specification of what is meant by such sentences is in many cases a matter of pragmatic guesswork.

One final point about the third reading of (1). This concerns the fact that the NP a book receives an abstract interpretation, at least on any interpretation for which (16) is an approximate paraphrase. Although I am unable to specify exactly how this fact should be handled, it may be a special case of a more general phenomenon that is taken up in section 3.4.2.

1.1.3.3 Although we have been unable to clarify successfully the precise interpretation of 'S' and 'R', nevertheless it is still possible to distinguish the third reading of (1) from the first two readings on the basis of the structural characteristics of the set of truth-conditions assigned to each reading. Both of

the first two readings contain a statement to the effect that there is a relation (either 'O' or 'C') holding between the subject and the direct object prior to the tense-referent. The third reading contains no such statement.[14] We shall see later that this distinction is of use in characterizing in a partial way the range of the intersection of the inside dative and outside dative constructions.

2.0 In this section, we shall extend the analysis presented for the first two readings of (1) to a variety of other cases. We note the fact that the relation which is postulated to hold between the subject and the direct object prior to the tense referent is the same relation which later holds of the indirect object and the direct object at the time of the tense-referent.[15] In other words, the first reading characterizes a transfer of ownership, the second reading characterizes a transfer of custody, and the third reading is distinguished in that questions of transferrance are not involved.

2.1 It has often been noted that there is a connection between a large subset of the verbs which occur in the dative constructions and concepts involving 'possession'. Yet the concept 'possession' is itself a diffuse one. For instance, there is no English verb which exactly expresses the concept of custody as we tried to define it is section 1.1.2: have itself is much too broad. Furthermore, although both own and possess are used to express a certain relation between humans and their belongings,[16] in abstract domains, the verb possess has strikingly distinct uses, as the sentences below illustrate:

19) The citizens possess the right to appeal.

20) *The citizens own the right to appeal.

21) Bill Cosby possesses great talent.

22) *Bill Cosby owns great talent.

23) ?Kennecott Copper possesses the mineral rights to Chile.

24) Kennecott Copper owns the mineral rights to Chile.

Yet although we must evidently make a distinction between (inalienable) non-transferrable social rights and transferrable social rights, on the one hand, to handle the constrast between (19-20) and (23-24), we must make further distinctions to limit the use of possess in its inalienable aspects. Thus, although (21) is good, (25-26) are bad (in contrast to the corresponding sentences with have given in (27-28)):

25) *John possesses a bad liver.

26) *John possesses a headache.

27) John has a bad liver.

28) John has a headache.

We can represent these various distinctions in the following table:

29)

	CONCRETE	ABSTRACT
ALIENABLE	have own possess belong to hand pass bequeathe give	have own ?possess belong to *hand *pass bequeathe give
INALIENABLE	have *own *possess *belong to *hand *pass ?bequeathe give	have *own possess *belong to *hand *pass ?bequeathe (genetically) give

This table represents only an initial step in analysis. Further distinctions must be made at least along the following lines: first, some notion of surrogate-ownership is necessary to distinguish rent and sell, and this notion must come to grips with whether it is possible, for example,to rent abstract things like mineral rights; second, temporal qualifications are necessary to distinguish lend from give; third, some qualification is needed to distinguish the custody-reading of give, which is quite general, from the rather special senses associated with verbs like hand and pass; finally, if the possessional nature of the dative-cases is to be assimilated within a general analysis of 'possessional' verbs, some means must be devised to deal with verbs like throw, which, as we shall see shortly, raise rather special problems.

The first two problems raised present no serious problems for an enterprise that aims to assimilate (at least) some of the dative (double object) constructions within an analysis of 'possessional' verbs. Various details need working out, however. Consider temporal qualifications on the relation between the indirect object and the direct object. Given sentences like those below,

30) John rented Harry an apartment in the Bronx for three months.

31) John leased me his apartment for a week.

32) John lent me his bicycle for a week.

is it the case that the temporal period specified by the _for_-phrase is a part of the (contractual) agreement entered into by the subject and the indirect object? I myself have the feeling that for the first two cases, the answer is yes, whereas for (32) it's not clear: the _for_-phrase may simply specify the amount of time during which the indirect object had the direct object in his possession. Differences of this kind, if they exist, support the decision made in section 1.1.2 to emphasize the social nature of many of the instances of transferrance which such verbs are used to describe. The fact that there are in certain cases what seem to be analytical connections between certain lexical items, e.g. _bequeathe_[17] and _own_, is represented in our analysis by the fact that in the truth-conditions assigned to these verbs, there will be certain predicates or relations in common. If enough conceptual content can be given to the relations employed, such an approach offers a promising way to deal with such perennial problems as the connections between _buy_, _sell_, and _own_, for example.[18]

Assuming that such analytical connections exist, then, we have a (formally) precise way of representing them: given two verbs for which we wish to posit such a connection, the truth-conditions assigned in each case will exhibit an intersection. Such an approach is able to capture the felt similarity between two lexical items as well as any approach can, without incurring some of the more obvious drawbacks.[19]

In many cases, however, there is no simple verb of

'possession' which expresses precisely the possessive aspect of a given double-object verb. This may be seen by considering in detail the cases of hand, pass, and throw.[20]

2.2 In both the cases of hand and pass, there must be something like local contact between the subject and indirect object. The notion 'local contact' is both imprecise and in need of qualification. With hand, for instance, the transferrance of the entity represented by the direct object is from the hand of the subject to the hand of the indirect object. This does not obviate the condition that there must be an act on the part of the subject constituting an 'offer' and an act of acceptance on the part of the indirect object. More precisely, we write:

33) NP_i hand NP_j NP_k

i) prior to t_0, $H(NP_i, NP_k)$

ii) at t_0, $I(NP_i, H(NP_j, NP_k)) \;\&\; A(NP_i) \;\&\; A(NP_j) \;\&\; M((A(NP_i) \;\&\; A(NP_j)), (-H(NP_i, NP_k) \;\&\; H(NP_j, NP_k)))$

The relation 'H(x,y)' holds of a person and a physical object: its interpretation is that the person (x) holds the object (y) in the hand. The relation 'I(x,Y)' holds of a person and a predicate or relation: its interpretation is that the person (x) intends the predicate or relation (Y) to hold. The predicate 'A(x)' is to be interpreted as above in section 1.1.2: namely, x executes an intentional act within a domain of social action.

Similarly, the relation 'M(X,Y)' is to be interpreted: as a result of X, Y holds. Thus, we claim that in order for a sentence of the form x hands y z to be true, it must first be the case that x holds z in the hand, and then, that with the intention that y hold z, x releases z and y takes z. It may be felt that such conditions are merely an awkward way of doing violence to what is a kind of gestalt process. But our analysis is designed to account for several crucial aspects of this process, namely: 1) the use of hand is inappropriate to describe a situation in which one person takes an object from another without consent; 2) the use of hand is inappropriate if there is no act of acceptance by the reciever of the object, i.e., merely laying an object in the hand of another does not constitute handing the object to that person; 3) the intention on the part of the subject is important in order to rule out cases in which the article in question is transferred in a way that satisfies the physical criteria set up, but is brought about without the explicit intention of the subject, i.e., if the subject merely lets go of the article in question and the indirect object happens to simultaneously grasp it.[21] The relation 'H(x,y)' can be given a precise interpretation. Yet there is no simple verb in English which expresses this concept.

The verb pass differs in a number of ways from hand. One way in which the sets of truth-conditions assigned to these verbs differ is that pass allows the presence of intermediaries who cooperate in transferring the article in question, whereas

hand does not. I shall leave open the way in which this distinction is to be represented. Of more immediate importance is the distinction manifested by these two verbs with respect to the 'uptake' on the part of the indirect object.

That some uptake on the part of the indirect object is in fact necessary for a sentence of the form x pass y z to be true of a situation can be seen by considering cases in which whatever physical criteria we set for pass are satisfied, yet there is no acknowledgment on the part of the receptor. For instance, sentence (34) is not true of a situation in which Mike is asleep, or so deeply engrossed in conversation with some third party that he does not notice the arrival of the picture:

34) Alex passed Mike the picture.

On the other hand, however, pass, unlike hand, does not seem to require a physical uptake. In this respect, pass resembles the custodial sense of give. Consider (34) again. Suppose the picture in question had aroused Mike's interest while he and his friends were sitting at the dinner table. If Mike is too busy manipulating his utensils to physically take the picture, and Alex places the picture on the table in front of Mike in such a way as to enable Mike to scrutinize the picture to his satisfaction, then (34) might well be true. This distinguishes the uptake of pass from the uptake of hand. But pass is distinct from give in that a local contact is necessary.

The verb throw is again apparently different from

either of these verbs with respect to the uptake condition. Without going into all the details proper to the analysis of sentences of the form x throw y z, we merely note that for such a sentence to be true, the object z must come within some region under the physical control of y. Again, the precise analysis of 'physical control' is hard to specify: we merely note that it has to be broad enough to comprehend situations in which y is intended to catch z and situations in y is intended to hit z with a bat (for instance). It appears to be the case that some interaction on the part of y and z is necessary: thus a sentence of the required form does not seem to be true if the object z merely comes to rest near y. In any case, it can easily be seen that the uptake condition on the part of the indirect object in sentences with throw is distinct from the other cases we have discussed.[22]

2.3 All of this raises the following problem: if we want to claim that notion 'possessive verb' is of importance in characterizing a certain set of verbs which occur in the double object construction, how can this generalization be expressed, in view of the fact that analysis shows that distinct concepts of possession are needed? There are two ways in which this problem can be met: a substantive theory of 'possession' which would relate all of these different concepts in terms of their content; and a formal theory which ignores the exact content of the various 'possessive' concepts, but groups the cases we are

interested in together on the basis of certain formal properties associated with their assigned sets of truth-conditions.

Without disparaging the substantive theory,[23] I would like to propose a way in which the formal theory, based on the notation which I have adopted, can handle this problem. I will first outline the proposal in a strong form.

The most striking aspect of the sets of truth-conditions so far presented for the cases which we have claimed deal with questions of transferrance is the fact that there is a relation claimed to hold of the subject of the sentences at issue and the direct object, and this same relation holds (later) between the indirect object and the direct object. This is the case for the first reading we provided for give (cf. (3)); it is true for the custodial interpretation of give (cf. (9)); it is true for hand (cf. (33)). Furthermore, a proper analysis of verbs like sell and bequeathe will manifest this property as well. We thus have a formal way of characterizing the concept 'transferrance', namely, as follows:

35) If the set of truth-conditions assigned to a verb contains the following propositions and R and R' are identical, then the verb has the transferrance property:

i) prior to t_0, $R(NP_i, NP_k)$

ii) at t_0, $R'(NP_j, NP_k)$

(where 'NP_i' represents the subject of the verb)

In cases in which we are interested in transferrance of possession, we let 'R(x,y)' be any arbitrary relation holding of a person and physical objects or alienable social rights.

As stated, this notion of transferrance may be too general for our purposes, but its interest stems from the fact that given this characterization of transferrance, we can give the following implication concerning the relation between syntactic form and semantic content:

36) If a verb occurs in the double object construction and has the transferrance property, it occurs in the prepositional dative construction as well.

In later sections of this thesis, we shall see certain aspects of the double object construction which suggest that we strengthen this implication, but for the time being, there are certain problems which require attention.

First, the definition of transferrance is too strong. In particular, if the analysis of rent requires as I suggested above a concept 'surrogate-ownership', the definition fails for the case of rent. Second, if the discussion above concerning pass and throw was to the point, the fact that no physical uptake is required on the part of the indirect object raises difficulties, since evidently more must be said about the relations holding of the subject and the direct object. In other words, both of these cases violate the requirement that the relation holding of the subject and the indirect object be identical to the

relation holding (later) of the indirect object and the direct object.

I know of no way to handle the problem of rent within a purely formal analysis. What apparently is needed is to relax the identity condition in (35) that the relations be exactly the same. Let us assume that the notion of 'surrogate-ownership' is subordinate to the relation 'O(x,y)' which represents the ownership of y by x. Although this notion of subordination may be intuitively satisfactory, I do not know at present how to give it more content. Nevertheless, I shall modify the characterization of transferrance so that it reads as follows:

37) If the set of truth-conditions assigned to a verb contains the following propositions and either R and R' are identical or R' is subordinate to R, then the verb has the transferrance property:

i) prior to t_0, $R(NP_i, NP_k)$

ii) at t_0, $R'(NP_j, NP_k)$

(where NP_i represents the subject of the verb)

As far as the second problem is concerned, one way in which it can be avoided is as follows. Let there be some general notion 'D(x,y)', which receives the interpretation 'x physically controls y'. We then incorporate this relation into the truth-conditions of verbs like pass, throw, and hit and put the burden of differentiating these verbs on various aspects of their interpretation which restrict them to certain

kinds of physical action.[24] I leave open exactly how such a program can be carried out.

In this section, we have attempted to extend the analysis proposed for the first two readings of the sentence Nixon gave Mailer a book to various other instances of the double object construction. The connection between a large group of verbs which occur in the double object construction with the concept 'possession' was noted, and an analysis of 'possessive verbs' was presented which shows that various distinctions are required in order to adequately separate one type of possession from another. Furthermore, we attempted to demonstrate that in the general case the concepts of 'possession' which are relevant to the verbs which occur in the double object construction are distinct from those for which we have simple verbs. This has led to an attempt to give a formal characterization of the notion 'transferrance' as a way of expressing the 'possessional' characteristics of certain double object verbs. In ensuing sections, we shall explore in more detail the consequences of the implicational statement (36), a proposal which relates certain aspects of a verb's semantic properties to aspects concerning its occurrence in two different syntactic structures.

3.0 Let us return to the third reading of sentence (1) of section 1.1. The characterization of this type that I proposed was simply:

1) at t_0, $S(NP_i, R(NP_j, NP_k))$

where 'S(x,Y) is a causal relation whose precise interpretation has been left open, and R(x,y) represents what we merely called an 'intrinsic connection' between x and y.

The crucial difference between this schema and the schemata given for the other readings is, as I pointed out above, the fact that no relation holds between NP_i and NP_k prior to t_0. One consequence of this is that, other things being equal, the selectional range of NP_i for sentences of this type is much larger than it is for sentences of the type discussed in section 2. For the latter type, there is always some relation '$R(NP_i, NP_k)$' which holds of the subject and the direct object, and the necessity for NP_i to conform to this relation limits its selectional range. Thus, in contrast to verbs like sell, for example, verbs which occur in sentences that are interpreted along the lines of the schema in (1) allow abstract subjects:

2) Interviewing Nixon gave Mailer a book.

3) #Interviewing Nixon sold Mailer a book.

By investigating the selectional range of NP_k in sentences which are interpreted in accordance with the schema given in (1), we

may hope to discover a more precise way of characterizing the relations involved. In this section, I shall present three rather special cases for which a more precise interpretation can be formalized. I shall then attempt to provide a uniform way of characterizing all three cases, and suggest a way in which the analysis can be extended to some rather idiomatic cases.

3.0.1 Consider the following sentences:

6) John gave the table a kick.
7) The concert tour gave Stravinsky a new patron.
8) The operation gave Max an ugly appearance.

In all of these cases, the sentence involved has the linear structure NP_i - V - NP_j - NP_k. But although in each sentence there is an NP_k, as shown by the typically nominal structure 'det - (adj) - noun', the various NP_k have certain properties which distinguish them from garden-variety referential expressions. For example, in each of these cases, it is impossible to question such expressions:

9) *Which kick did John give the table?
10) *Which patron did the concert tour give Stravinsky?
11) *Which ugly appearance did the operation give Max?

By constructing an account of such behavior, we will be in a position both to understand more about the relation 'R' of (1)

and to understand the range of the dative alternation in an improved fashion.

3.1 By 'predicational noun', I mean the (semelfactive) nominalization of a verb. In particular, I shall mean nominalizations like the following:

12)

verb	predicational noun
to kick	a kick
to try	a try
to start	a start
to pull	a pull
to push	a push
to hit	a hit
to swing	a swing
to punch	a punch
to test	a test
to look	a look
to glance	a glance
.	.
.	.
.	.

Without attempting a complete characterization of the range of this type of nominalization, we note that only activity predicates seem to be involved (*a know, *an own, *a see, etc.) and only one- or two-place predicates (*a put, *a give, etc.).

Such nominalizations have interesting properties. Most important for our purposes is the fact that when they occur in the double object construction as NP_k, the predicate that they are derived from plays a role in the entailments of the sentence and NP_j is always construed as one of the arguments of this predicate. For example, the sentence

13) Gibson gave Smith a look at the samples.

entails that Smith looked at the examples. In certain cases NP_i is also construed as an argument of the predicate from which the predicational noun is derived. Thus, (14)

14) Gibson gave the rope a pull.

entails that Gibson pulled the rope. In some cases, this leads to ambiguity:

15) The Braves gave Aaron a try.

(15) is consistent either with a situation in which the Braves tried Aaron or with a situation in which the Braves let Aaron try.

Predicational nouns share with infinitives, gerunds, and participles certain properties concerning control (of an understood argument place by some other noun phrase in the sentence):

16) When I walked into the room, I noticed that John's kick had caused the house of cards to collapse.

17) *When I walked into the room, I noticed that a kick had caused the house of cards to collapse.

As with infinitives and gerunds and participles generally, generic and modal contexts relax this constraint:

18) A kick may cause a house of cards to collapse.

As example (18) shows, predicational nouns may occur in other environments than the double object construction. That the environment affects the interpretation of the related predicate is shown by examples like:

19) The mule got a kick (in the teeth).

20) The mule gave a kick (*in the teeth).

Thus, (19) is true of a situation in which the mule was kicked in the teeth, whereas (20) is true of a situation in which the mule kicked.

A way of dealing with the control problem raised by such cases that captures the dependency on the matrix verb has been suggested by Jackendoff (1972, particularly pp. 217-219) and elaborated by Higgins (1973, pp. 179-187). The heart of the suggestion is a 'matching principle' which pairs up the thematic relations of the matrix sentence with the controlled arguments of the predicate from which the nominalization is derived. Higgins states the principle as follows:

> 21) To each of the understood noun phrases of the noun phrase whose head is the nominalization there must correspond a noun phrase in the sentence which bears the same thematic relation to the verb as that noun phrase bears to the nominalization.
>
> --Higgins, 1973, pp. 182-183.

The attractiveness of this principle is its generality and its expression of the dependency of the control relations on the main verb.

With respect to the verb give, however, this principle raises severe problems. What thematic relations are involved when give is used in the double object construction? Depending on which criterion we use, it would seem to change. And this in turn robs the principle (21) of any explanatory value when we apply it to constructions with give.

If a verb is used to describe motion, the thing that moves is the Theme. In such contexts, the motion of the Theme originates at the Source and terminates at the Goal. In order to generalize the concepts employed in this system, something like the following principle is required: when a verb whose thematic relations are well-defined for motional contexts is extended to non-motional contexts, the thematic relations of the various syntactic positions for which the verb is subcategorized remain constant. Yet if this is so, the matching principle as formulated in (21) cannot be right. For example, consider the ambiguity of (15). On one reading, the one consistent with 'The Braves try Aaron', 'Aaron' is presumably the Theme of try; on the other reading, the one consistent with 'The Braves let Aaron try', 'Aaron' is presumably the Agent of try. Therefore, if the matching principle is correct, the principle of invariance of thematic relations is not. Similar conclusions follow from a consideration of examples like:

22) Nixon gave his press secretary a shove.

23) Nixon gave his press secretary a thrill.

There is one consideration which provides some evidence that we should relax the principle of invariance of thematic relations rather than dispense with the matiching principle. This concerns the fact that a consequence of preserving the matching principle is that the thematic relation assigned to the indirect object must change as the thematic relation of the argument place of the predicate which the indirect object controls changes. From this consideration alone, it is not clear which principle to reject. But note that as the thematic relation assigned to the indirect object changes, there appears to be a corresponding shift in the thematic role of the subject of give. This provides evidence that the principle of invariance is not always applicable.

There is an alternative description of the facts, independent of the system of thematic relations, which is descriptively adequate (but goes no further) and provides a useful way of illustrating the problem. Assume that each predicational noun is entered in the lexicon,[25] and each lexical entry of a predicational noun is specified for which arguments must be controlled. We noted above that there appear to be no predicational nouns which are derived from three-place predicates like put. Therefore, we can restrict our attention to the case in which there is either one empty argument-place to be filled, or two. If there is only one empty argument-place to be filled, the indirect object fills it. The completed predicate is then listed as an entailment of the sentence. Concomitantly, however,

we assign to the subject of give the interpretation 'permissive agent' with respect to this entailed predicate. Stated more formally, this comes out as:

24) Given the structure:

NP_i give NP_j NP_k

and 'NP_k' is a predicational noun with one empty argument place, derived from the predicate P, the sentence represented by this structure is true if and only if:

i) $P(NP_j)$ is true.

ii) $E(NP_i, P(NP_j))$, where the relation 'E(x,Y)' is interpreted as 'x permits Y'[26]

Assuming that the expression 'a look at the samples' is a predicational noun with one empty argument place (related to the sentence 'x look at the samples'), applying these instructions to (13) above provides a reasonable approximation to the intuitive interpretation. It is worth pointing out that if there is only one empty argument-place, it must be the subject, and furthermore, in the cases of which I am aware, the subject is always interpreted agentively. One would hope that this fact could be correlated with the fact that the subject of give is interpreted in a permissive role.

Let us now turn to the case in which the predicational noun is represented in the lexicon with two empty argument-places. Again we need to formulate rules which fill these

argument-places. The rules are simple: assign the indirect object to the argument-place which corresponds to the direct object of the verb from which the predicational noun is derived; assign the subject of give to the argument-place of the predicational noun which corresponds to the subject of the verb from which the predicational noun is derived. Thus,

25) Given the structure:

NP_i give NP_j NP_k

and 'NP_k' is a predicational noun with two empty argument-places, derived from the predicate P, the sentence represented by this structure is true if and only if

i) $P(NP_i, NP_j)$ is true.

In this case we need say nothing about permission. If the subject of the verb from which the predicational noun is derived is interpreted agentively, then there is an agentive interpretation; if not, there is not.

We mentioned above in section 3.0 that the selectional range of a given noun phrase is constrained by the different predicates and relations which the noun phrase must satisfy in order for the sentence in which the noun phrase occurs to be true. If this is correct, and our two interpretive schemata (24) and (25) are correct, then we should find selectional dependencies between the empty argument-places of the predicational nouns which occur with give and the noun phrases (NP_i and NP_j) which

are assigned to these argument-places by our rules. This is in fact the case, as examples like the following show:

26 a) Nixon shoved Ziegler.

b) Nixon gave Ziegler a shove.

27 a) Nixon shocked Ziegler.

b) Nixon gave Ziegler a shock.

28 a) *Being close to Nixon shoved Ziegler.

b) *Being close to Nixon gave Ziegler a shove.

29 a) Being close to Nixon shocked Ziegler.

b) Being close to Nixon gave Ziegler a shock.

The analysis we have presented here accounts for these selectional dependencies in a straightforward and natural way.[27]

Although the analysis we have presented here is a descriptively adequate account of the cases at issue, it has the drawback of being tailor-made for the cases in which the main verb is give. Thus, it is difficult to see how to extend it to cases in which the main verb differs from give (e.g. (19), for example) in any but a piecemeal fashion. Insofar as the Jackendoff-Higgins matching principle (21) shows promise of a general theory of accomplishing this goal, it should be maintained. A consequence of this is, as I pointed out, that the principle of invariance of thematic relations must be weakened: in this case, we must say that give can occur with a variety of pairs of thematic relations assigned to its arguments. But

perhaps this reflects the intuitive feeling that in such constructions, the verb give is semantically empty.

3.2 We turn now to the case in which NP_k is an expression like 'a patron'. Consider sentences like:

30) Stravinsky has a book.

31) Stravinsky has a patron.

In (30) we understand Stravinsky to own a book or to have a book in his custody. Sentence (31) can have corresponding interpretations, say in discussions concerning slavery or incarceration. But (31) has a further interpretation, which we may paraphrase as 'there is a person who is Stravinsky's patron'. In other words, on this latter interpretation, the logical form of (31) is distinct from that of (30): we shall treat this difference as stemming from the fact that 'a patron' is a relational expression which, like the predicational nouns discussed in the last section, lacks a specification of its argument in the surface structure,[28] whereas 'a book' is not a relational expression. Thus, we represent the interpretation of (30) in which Stravinsky has custody of the book roughly as in (32). A formal representation of (31) on the interpretation in which 'a patron' is accorded the relational interpretation is given in (33).

32) $(Ex)(B(x) \& C(s,x))$

33) $(Ex)(P(s,x))$

'B(x)' is interpreted as 'x is a book'; 's' represents Stravinsky; 'C(s,x)' is the custody relation discussed in section 1.1.2; 'P(x,y)' is to be interpreted as 'y is x's patron'.

In support of the distinction between a book and a patron in the environment 'x have ____', we note that whereas the argument in (34) is valid, the argument in (35) is not:

34) Stravinsky has a book.
All books are physical objects.

Stravinsky has a physical object.

35) Stravinsky has a patron.
All patrons are supporters of the avant-garde.

Stravinsky has a supporter of the avant-garde.

Note further that in order for a sentence like (31) to have the interpretation given in (33), it is essential that the relational expression lack its argument. If we fill the argument-place, the sentence has only a reading appropriate to slavery or incarceration:

36) Stravinsky has the patron of Hindemith.

Like the predicational nouns discussed above, we find that when relational expressions occur without overt arguments, their distribution may be restricted. Consider the fact that

although every person is the son or daughter of someone, it is quite bizarre to say things like:

37) *A daughter will be chosen to succeed President Ford.

(37) is not strange because it is misleading or uninformative. It is just as informative as (38):

38) A woman will be chosen to succeed President Ford.

What seems to be necessary in order to improve (37) is that some specification of whose daughter it is be given, as in (39).

39) A daughter of the vice-president will be chosen to succeed President Ford.

Consider further the sentences:

40) Harry is on his way to see a friend.

41) Harry was talking to a friend.

In these sentences, the final NP is construed as a friend of the subject, not some individual characterized abstractly as "friend (of x)", where the variable is given no interpretation.

A strong claim here would be that these relational expressions are constrained in their distribution by principles of control, similar to those that apply to headless gerunds. It is true that there are some similarities to be noted here. For example:

42) A patron would have helped Stravinsky.[29]
(= Stravinsky's patron)

43) Consulting a doctor would have helped Stravinsky.
(= Stravinsky's consulting a doctor)

44) Stravinsky always deplored a patron.
(≠ Stravinsky's patron)

45) Stravinsky always deplored arriving at concerts late.
(≠ Stravinsky's arriving at concerts late)

This partial similarity notwithstanding--and it is far from overwhelming--it is clear that relational expressions must be treated in a different way than headless gerunds, and in fact, that relational expressions do not uniformly require the specification of their argument.[30] For example, consider the following contrast:

46) After lunch, John has to meet one of his clients.
47) After lunch, John has to meet a client.
(= his client)

48) After lunch, John has to meet one of his sons.
49) *After lunch, John has to meet a son.

I have no way of accounting for this difference, but it is worth noting that in some cases relational expressions relax the requirement that the argument-place be specified: thus, in

hospitals, for example, reference to 'patients' is quite common.[31]

3.2.1 In those cases in which an expression has a 'relational' interpretation as the direct object in the double object construction, the interpretation of the sentence as a whole always contains a 'causal' element. The role of the indirect object and the relational expression is quite simple: there is an individual such that he and the indirect object satisfy the relation in question. The subject is interpreted merely as having played a crucial role in establishing the relation. Thus,

50) Given a sentence of the form

NP_i give NP_j NP_k

if NP_k is a relational expression connected to the relation 'P(x,y)', then the sentence is true if and only if

i) $(Ex)(P(NP_j, x)$

ii) $S(NP_i, (Ex)(P(NP_j, x)))$, where 'S(y, W)' is a 'causal' relation

Apparently, it is a requirement on this interpretation that the argument of the relation (cf. footnote 28) be unspecified at the time the rule applies. Otherwise, the rules of interpretation will treat e.g. NP_k as a definite (or indefinite) description: the interpretation of (51) parallels that of (52):

51) The concert tour gave Stravinsky the patron of Hindemith.

52) The concert tour gave Stravinsky Paul Smith.

Although there are cases in which the direct object can be a proper name, the interpretation suitable to them is hardly appropriate in these cases.[32]

3.3 Inalienable possession.

I shall treat cases of inalienable possession in a manner similar to the treatment I proposed for relational expressions: namely, the question of control is crucial. A clear illustration of why I think such a treatment is necessary is found in cases in which an NP with only an inalienable interpretation appears in subject position. Compare the following cases:

53) John's illness hampered him.

54) An illness hampered John.

55) John's illness hampered the team.

56) ??An illness hampered the team.

If an illness has only an inalienable interpretation, there is no difficulty in accounting for the strangeness of (56) insofar as we have a way of correlating the object of hamper with the subject: a collective cannot have an illness. I won't take a stand here on how the necessary correlation is to be established, though several possibilities suggest themselves.[33]

In order to make precise the interpretation of

sentences in the double object construction where the direct object has an inalienable interpretation, I shall again propose a set of interpretive rules. The sentences concerned are of the type exemplified below:

57) Hot food gives Reginald heartburn.

58) The constant chatter gave me a headache.

59) His pair of new shoes gave John a blister.

To see that the direct object in such cases is in fact interpreted inalienably, it suffices to add to the direct object a possessive pronoun whose reference is distinct from that of the indirect object.

60) #Hot food gives Reginald my heartburn.

61) #The constant chatter gave me Arnold's headache.

62) #His pair of new shoes gave John Mary's blister.

I propose the following interpretation for these sentences:

63) Given a sentence of the form

NP_i give NP_j NP_k

if NP_k receives an inalienable interpretation, then the sentence is true if and only if NP_j has the property denoted by NP_k, and NP_i plays a causal role in this fact.[34]

3.4 Summary.

In the three cases discussed in this section, we have examined three rather special types of interpretation assigned to give when the direct object of the double object construction has certain properties. There is a common thread running through the different cases: in each instance, it seems that the direct object expression has the property that it requires 'control'--similar but not identical to the control of infinitives and headless gerunds, and that although in the case of predicational nouns the subject may play a role in the control of the direct object, the indirect object must play a role. A striking syntactic fact concerning this class of cases is that the prepositional dative construction by and large fails to occur. It would be of interest if this fact could be made to follow from the semantic properties of such sentences.

We proposed above in section 2 the following implication, repeated below:

64) If a verb occurs in the double object construction and has the transferrance property, it occurs in the prepositional dative construction as well.

If an expression denotes an inalienable property, by the very meaning of 'inalienable', the denotation of the expression can be a property of at most one individual.[35] Therefore, in cases of the double object construction, if the direct object is an expression with an inalienable interpretation, it cannot satisfy

the definition of transferrance, since in order to do so, both the referent of the subject and the referent of the indirect object would have to both have (at one time or another) the (same) manifestation of an inalienable property. But this is senseless.

A similar argument holds for the predicational nouns. As we tried to demonstrate above, the truth-conditions for double object constructions in which the direct object is a predicational noun state that the predicate from which the predicational noun is derived is true of the indirect object (and possibly of the subject as well, in the case of predicational nouns derived from two-place predicates): transferrance would appear to be inapplicable to the role an individual plays in a (single) action.

Such an argument can be extended only partially to the case in which the direct object is a relational expression. Only inalienable relations (like those based on genetic relationships) can be handled. In the case of social relationships, there is obviously a way in which transferrance could be satisfied. In fact, there are sentences based on such transferrance:

65) Dr. Johnson bequeathed Dr. Smith his patients.

Roughly, (65) is true in cases in which those who were once Dr. Johnson's patients became Dr. Smith's patients. I am not sure how to treat such cases, however,

In any case, although the implication stated in (64)

is consistent with the observations made here, we would prefer a generalization which would rule out the possibility of such cases occurring in the prepositional construction. I shall defer this matter until a fuller analysis of the prepositional cases has been discussed.

3.4.1 We have postulated various ways in which sentences with give are to be interpreted in the double object construction. Thus, if the conditions under which one or another of our rules of interpretation applies are met, the sentence in question should have the specified interpretation. In cases in which more than one set of conditions is satisfied, the sentence in question should have more than one reading. This is in fact the case, and our rules account for ambiguities like the following:

66) The doctor gave Mary an attractive skin.[36]

67) Dr. Frankenstein gave the monster a strange look.

In (66), 'an attractive skin' is either an expression with an inalienable interpretation or simply an indefinite description of a physical object, i.e., a piece of leather for example. In (67), 'a strange look' is either an expression with an inalienable interpretation (cf. 'The monster has a strange look') or a predicational noun (cf. 'Dr. Frankenstein looked at the monster strangely').

3.4.2 Some idiomatic expressions.

Before leaving the domain of the interpretation of give in the double object construction, it is of interest to observe some idiomatic cases which are assimilable to the treatment we have suggested above.

Consider first a sentence like:

68) The doctor gave Jack a shot.

This sentence has several readings. On one it is paraphrasable by 'The doctor gave Jack an injection'. On a second, it is elliptical for 'The doctor gave Jack a shot at it', which is roughly equivalent to 'The doctor gave Jack a try at it'.

In terms of our classification of expressions, both of these readings ought to be generated as a result of the rule which applies in the case in which the direct object is a predicational noun. However, it is evident that although there exists a verb to shoot and a noun shot, there is no very close relation between these lexical items and the senses of shot in (68).

Suppose we extend the theory in the following way: we will say that the lexical range of the concept 'predicational noun' includes nominals for which there is no corresponding verb morphologically, but for which there is a semantically related predicate. In other words, the lexicon will contain specifications for shot as follows:

69) $[\text{shot}]_{N/}$ (predicational noun associated with the predicate 'x inject y'...)

70) $[\text{shot}]_{N'}$ + [___at NP], (predicational noun, associated with the predicate 'x try (NP)'[12]

By specifying that shot occurs as a predicational noun with varying argument-places, depending on the sense attached, we immediately account for certain aspects of its distribution, as well as give the basis for the sort of interpretation it receives as the direct object in double object construction with gave.

Such expressions are usually treated as idioms. In constructions with give, what is idiomatic is in many cases simply the interpretation of the direct object, and therefore isolable. Consider such cases as:

71) The editor gave the manuscript a once-over.
(The editor inspected the manuscript in such and such a way.)

72) Ford gave Rockefeller the nod.
(Ford chose Rockefeller)

73) Rockefeller gave Ford a tip-of-the-hat.
(Rockefeller acknowledged Ford in such and such a way.)

74) The vacation gave me a break.
(The vacation let me rest.)

Although the glosses in parentheses are only intended as crude

indications of the interpretation of such sentences, it would appear that we can assimilate all of these cases to the category of predicational nouns. There are also clearly cases of idiomatic expressions which receive an inalienable interpretation:

75) The movie gave me the creeps.

In certain cases, however, it is not so clear to what category of our present inventory we should assign a given idiomatic expression. For instance:

76) John has been giving me trouble.

The surprising thing about such cases, however, is the pervasiveness of idiomatic interpretations. For example, consider (77)

77) We sent the general a messenger.

Here we have an interpretation in which the general is sent a messenger so that he has a messenger at his disposal. But there seems to be a reading as well in which what is indicated is merely that the general was sent a message. We may attribute this second reading to the fact that 'a messenger' can be construed as a predicational noun. But although we have a framework in which to interpret such sentences, more general principles are needed to account for when such interpretations are available.

4.0 A notable fact about what we have called the 'third reading' of sentences with give is that the prepositional dative construction is not available--or if so only in certain rather special cases. It is, of course, of descriptive interest to classify the various instances in which the 'third reading' is available. A more satisfactory theory, however, would attempt to relate the syntactic distribution of this reading more closely to aspects of underlying structure.

We noted at the end of Section 3 that there are several factors which distinguish the syntactic properties of the sentences which can bear the third reading from those in which the first two readings only are available. For instance, a common aspect of the three special cases discussed in 3.1 - 3.3 is that whenever the third reading is available, the direct object had the property that it was not a common referring expression. We postulated that in all of these cases, the direct object was 'incomplete' and devised a set of rules--somewhat idiosyncratic for each case, to be sure--which assigned a reading to the empty argument place.

But we also noted that the availability of the third reading had other consequences--among them, a freedom of selection with respect to the subject. If we want a comprehensive theory of the occurrence possibilities available for each reading, this fact should be taken into account. Yet, it is almost as if we have a superfluity of properties on which to hang the non-occurrence of both forms: the causal nature of the interpretation assigned to the 'third reading'; the properties of the subject,

e.g. the freedom of selection; the properties of the direct object, e.g. their 'incompleteness', properties of the indirect object, i.e., relaxation of the condition of animacy.

First, I will propose that in all cases in which the third reading is available, the double object construction is base-generated, since to assume the opposite is to commit oneself to the existence of some abstract form which distinguishes these cases from the other cases which undergo the dative alternation. I have mentioned some of the difficulties which arise if we derive these constructions from a causative structure: we will have an opportunity to consider this possibility in a slightly different context (e.g. at the end of section 4.5), but there are general considerations which militate against this whole approach (cf. Fodor, 1970). If we generate such sentences in the prepositional dative construction, then we must postulate the existence of a rich enough set of devices to distinguish the sentences which have this third reading and map them obligatorily into the double object construction. But such power is either not available in present theories or else it is theoretically undesirable: we must either be able to refer to the fact that a phrase-maker has been assigned a certain interpretation, which involves global rules or ad hoc features, or we must be able to refer to various properties of the constituents of the sentence in such a way that we increase the power of transformations.

The assumption that these sentences are base-generated avoids such problems: there is no difficulty in accounting for

the syntactic form which these sentences take; and we have a structural difference on which to hang the differences we find in interpretation.[37]

In the ensuing sections, we will discuss other aspects of the double object construction. First, we shall take up the analysis of two other rather versatile verbs: teach and show. Our purpose will be to show that on a variety of interpretations, these two verbs are restricted to the double object structure, and that in a general way, the interpretations at issue form a natural class with those which we have discussed as the 'third reading' of sentences with give.

4.1 In the case of give, it is a striking fact that in almost all cases, certain aspects of the interpretation can be roughly paraphrased with sentences employing have or get. I will argue below that this is not a result of these lexical items occurring in the derivation of sentences involving give, either as part of the phrase-maker into which the lexical item give is inserted or as part of the lexical representation of give. Rather, I will propose a purely semantic account of this fact.

In the case of other verbs which occur in the dative constructions, there are similar cases of a connection with another lexical item. The two most striking cases of this are the pairs teach and learn, on the one hand, and show and see, on the other. But as with give and have/get, the correspondence between the elements of each pair is far from perfect. We shall

see this below.

4.2 We base our remarks concerning teach on the following 32 sentences.

1) Faustroll taught.

2) Faustroll taught pataphysics.

3) Faustroll taught the sixth grade.

4) Faustroll taught the sixth grade pataphysics.

5) Faustroll taught pataphysics to the sixth grade.

6) Erwin taught the procedure to us { for six weeks. / in six weeks. }

7) Erwin taught us the procedure { *for six weeks. / in six weeks. }

8) John taught me the way to Inman Square.

9) *John taught the way to Inman Square to me.

10) John taught me what the way to Inman Square is.

11) John told me Harry's suggestion.

12) John taught me what Harry's suggestion was.

13) *John taught me Harry's suggestion.

14) John taught me Harry's solution.

15) *John taught the way to Inman Square.

16) Tomorrow, I'll teach *(the kids) that Shakespeare penned the immortal lines: "If music be the food of love, play on,/ Give me excess of it...

17) Christ taught that the meek shall inherit the earth.

18) Jack taught me to swim.

19) Jack taught me {not to make omelettes in oil. / never to smoke.}

20) Jack taught me to {use / do} the Australian crawl in heavy seas.

21) ≠Jack taught me how to {use / do} the Australian crawl in heavy seas.

22) Peachum's treachery taught the gang to use more caution.

23) ≠Peachum's treachery taught the gang how to use more caution.

24) Peachum's treachery taught the gang not to gossip so much.

25) ≠*Peachum's treachery taught the gang how not to gossip so much.

26) Lestrade's trampling of the crucial footprint taught Holmes that he was not a man of much sophistication.

27) The sheet music on the piano taught Holmes a few things concerning the lodger's taste and general attitude toward life.

28) The Grundzüge teaches students an important approach to phonological theory.

29) Katya taught me Russian.

30) Katya taught Russian to me.

31) Lipson's textbook taught me Russian.

32) *Lipson's textbook taught Russian to me.

It is evident that an attempt to derive all instances of the dual-NP (or V NP S, V NP VP) type from some other structure faces immediate difficulties of both a syntactic and semantic kind. Note first of all that the distinction between the double object construction and the to-dative construction is conditioned by the subject (29-32), controls the choice of time adverbials in some cases (6-7), and for the most part is not freely available.

As one can see from these examples, teach has two prevailing senses: one is roughly equivalent to CAUSE X to know/learn, the other corresponds to an activity associated with this goal (in a not very direct way in many cases). These two senses are related to the distinction between the first two readings of give discussed in section 1 and the third reading. We first systematize the data given above and then attempt to explicate the relevance of the correlation with these two types of interpretive schema.

33) TEACH

a) NP_i V (cf. (1))

NP_i is [+ human]

V predicates the (generic) activity of teaching of NP_i

b) NP_i V NP_k (cf. (2))

NP_i is [+ human]

NP_k is an 'academic subject' (or a subject to which some teaching procedure is associated)

V predicates the (generic) activity of teaching of NP_i

NP_k specifies the content involved

c) NP_i V NP_j (cf. (3))

NP_i, NP_j are [+ human]

V predicates the activity of teaching of NP_i

NP_j specifies the audience or goal

d) NP_i V NP_j NP_k (cf. (4))

NP_i, NP_j are [+ human]

NP_k is an 'academic subject' (vide supra)

i) prior to t_0, $-K(NP_j, NP_k)$

ii) at t_0, V predicates the activity of teaching of NP_i, with the content specified by NP_k

iii) NP_j specifies the audience/goal

e) NP_i V NP_k to NP_j (cf. (5))

[same as (d) above]

f) NP_i V NP_j NP_k (cf. (6-16))

NP_i, NP_j are [+ human]

NP_k denotes information not specific to an 'academic subject'

i) prior to t_0, $-K(NP_j, NP_k)$

ii) at t_0, $M(NP_i, K(NP_j, NP_k))$, where 'M(x,Y)' is interpreted as a 'causal' relation

g) NP_i V $\left\{\begin{matrix} NP_k \\ \text{that S} \end{matrix}\right\}$ (cf. (17))

NP_i is [+ human] or represents a literary work

$\left\{\begin{matrix} NP_k \\ \text{that S} \end{matrix}\right\}$ is a set of religious, ethical, political, ... maxims

[same as (b) above]

h) NP_i V NP_j VP (cf. (18))

NP_j is [+ human]

i) prior to t_0, $-A(NP_j, VP)$, where 'A(x,VP)' is interpreted as x has the capability to VP'[38]

ii) at t_0, $M(NP_i, A(NP_j, VP))$, where 'M(x,Y)' is interpreted as a 'causal' relation

i) NP_i V NP_j VP (cf. (19-25))

NP_j is [+ human]

i) prior to t_0, $-W(NP_j, VP)$, where 'W(x,VP)' is interpreted either as 'x is aware that x should VP' or 'x believes that x should VP' or 'x generically VP'

ii) at t_0, $M(NP_i, W(NP_j, NP_k))$

j) NP_i V NP_j $\begin{Bmatrix} NP_k \\ \text{that S} \end{Bmatrix}$ (cf. (26-27))

NP_j is [+ human]

$\begin{Bmatrix} NP_k \\ \text{that S} \end{Bmatrix}$ denotes an intellectual construct

i) prior to t_0, $-K(NP_j, \begin{Bmatrix} NP_k \\ \text{that S} \end{Bmatrix})$

ii) at t_0, $M(NP_i, K(NP_j, \begin{Bmatrix} NP_k \\ \text{that S} \end{Bmatrix})$, where 'M(x,Y)' is interpreted as a 'causal' relation

The distinction between the activity sense of teach and its causal counterpart is crucial. The activity interpretation is impossible if the subject of teach is [-animate]. Note then that whenever the subject is [-animate], the indirect object is obligatory and the to-phrase is impossible:

34) a) The defeat taught (*to) the administration that Congress was not to be fooled with.
b) *The defeat taught that Congress was not to be fooled with.

35) a) Lipson's textbook taught me Russian.
b) *Lipson's textbook taught Russian to me.
c) *Lipson's textbook taught Russian.

In fact, the only cases in which a to-phrase is possible are those cases for which an activity reading is possible, and the activity reading, in turn, seems to be associated with the tendency for the direct object to be interpreted as what I called above an 'academic subject'. The concept 'academic subject' is hardly a technical term, and what counts as one seems to be a matter which purely grammatical considerations are ill-equipped to settle. There seems to be only one constraint involved, and that is that in order to generate sentences in which the activity reading is permitted, the direct object must be an NP, not S or VP.[39] But this single requirement is obviously too general, as sentences like (9) illustrate.[40]

If more content could be given to this notion, then we

would have at least a descriptive way of accounting for when the to-phrase is available. Finally, note that if the activity interpretation is possible, then there is no implication that the indirect object has actually learned anything. In every other case, some effect on the individuals represented by the indirect object is entailed.

The most problematic case, then is something like (33):

37) Max is teaching the class trigonometry.

Is this simply vague between the activity interpretation and the causal interpretation, or really ambiguous? If the sort of test based on conjunction is valid, then I think that we have to side with two distinct readings: the sentence below seems to me to have two readings (which I try to bring out in the parenthesized continuations):

38) Max is teaching the class trigonometry because Harold wasn't able to.

a) he (Harold) came down with the flu)

b) he (Harold was incompetent--he couldn't tell a sine from a cosine and the kids weren't learning a thing.)

There is no ambiguity at all in (39), which has only the activity interpretation.

39) Max is teaching trig to the class because Harold wasn't able to.

The activity sense I am trying to convey here of course does not entail the absence of learning.

A further indication of the existence of two readings is the interpretation of the progressive aspect: in one case, it simply indicates the extended nature of the activity; in the other it indicates progress toward a goal, namely $K(NP_j, X)$. (cf. Vendler, 1967).

If all of this is correct, then we have a choice between generating these sentences in two structures: the double object structure and the to-dative structure, assigning the first a causal interpretation in every case, assigning the second an activity interpretation in every case, and postulating a to-dative rule; or we generate both syntactic types and add an interpretive rule for the special case of school-room instruction which optionally assigns an activity interpretation to an underlying double object structure.

The relevant syntactic data (for this case) is the following:

40) Max taught {the children / *to the children}

41) Max gave {to the United Fund / *the United Fund.}

42) Max paid {the bank. / *to the bank. / off the bank. / *off to the bank.}

43) Max wrote {Henderson. / to Henderson. / off to Henderson. / *off Henderson.}

(40) has only the activity reading. We can see that the derivation of (40) from a to-phrase is not a fact which is amenable to general statement, unless we are willing to countenance obligatory rule features to mark positive absolute exceptions. The alternative is lexical specification. Neither alternative is very elegant or appealing. But which we choose depends on the type of transformational power we wish to allow. If we rule out the exception features, we have either a theory in which the appearance of to with the goal phrase can be accounted for by a set of rules like the following:

44) to → Ø/ teach____NP

to → Ø/ write____NP (optional)

Or, we adopt the solution based on lexical specification and an extension of the interpretive devices.

One piece of evidence for the latter choice is that pairs like:

45) I wrote to Henderson.

46) I wrote Henderson.

are somewhat distinct. With sentences like (45) it is possible to append adjuncts like but I destroyed the letter. Adding this to (46) produces a conflict of at least minor proportions. We return to this problem later.

Independent lexical specification can at least describe such situations in a way that is no different from the normal case. One would like to be able to have a more general theory

however.

This concludes our discussion of teach.

4.3 I turn now to a brief discussion of the verb show. I will first give evidence for the existence of a 'causal' interpretation of the double object construction with show.

47) Attila showed me the destruction of Rome.

NP_i show NP_j NP_k

i) at t_0, $R(NP_j, NP_k)$, where R is interpreted as 'NP_j sees NP_k'

ii) at t_0, $M(NP_i, R(NP_j, NP_k)$, where M is a 'causal' relation.

48) Reading the Bible showed me that I was a miserable sinner.

NP_i show NP_j X, where X = syntactically NP, or S.

i) at t_0, $R(NP_j, X)$, where R is interpreted 'NP_i know X'

ii) at t_0, $M(NP_i, R(NP_j, X)$, where M is a 'causal' relation.

These two interpretations of R, the visual and the cognitive, provide an undercurrent of ambiguity in the 'causal' reading. Thus, consider:

49) John showed me how to iron sheets.

(49) is ambiguous between the readings given in (47) and (48). We may paraphrase the readings as follows:

50) John demonstrated to me how it is done (although in spite of the fact that I saw him do it I still don't understand how it is done).

51) John's demonstrations taught me how it is done.

One may be tempted to complain that these senses are not to be distinguished semantically. Nevertheless, there are cases in which only reading is available:

52) & John showed me the value of a good penknife.

{Now I know why one comes in handy in the woods.
{The tag read $4.98.

53) & Getting lost in the woods showed me the value of a good penknife.

{ Now I know why one comes in handy in the woods.
{??The tag read $5.98.

54) & The price tag shows the customer the value of the penknife.

{ The tag reads $6.98.
{??Now I know why one comes in handy in the woods.

55) ?*Turning the tag over showed me the value of a good penknife.

As in the case of many sentences with give, the possibility of ambiguity is correlated with the ambiguity of the direct object. The interpretation of the subject plays a role here as well. We need to make a variety of distinctions. First, concerning the subject, we set up three groups:

56) A. Animates (agentive)
B. concrete objects.
C. abstracts (headless gerunds, NPs denoting experiences,...)

Concerning the direct object, we divide things into three groups:

57) A. visual events
B. visual objects
C. cognitive objects

The indirect object is always [+ animate].

This results in the following possible combinations:

58)

	NP_i	show	NP_j	X
1.	Animate		Animate	a) visual event b) visual object c) cognitive object
2.	Concrete Object		Animate	a) visual event b) visual object c) cognitive object
3.	Abstract		Animate	a) visual event b) visual object c) cognitive object

Not all possibilities exist. Consider:

59a) Attila showed me {the destruction of Rome / his army destroying Rome / how to use a sword (though I still don't understand how)}

59b) Attila showed me his (rusty, chipped) sword.

59c) Attila showed me {the strength of his sword. / how to sharpen a sword (and now I understand how)}

60a) *The vantage point showed me the destruction of Rome.

60b) The price tag shows the customer the value--$7.98.

60c) *The price tag shows the customer what a poverty-stricken wretch he is.

61a) *Sitting at the top of the arena showed me the execution of the bull.

61b) {*Reaching the summit / *Standing on the summit} showed me the Eiger.

61c) Watching Attila practice showed me {the strength of his sword / how to wield a short-sword.}

First, a word about the good example in the second category (60b), as examples of this type constitute a rather interesting case. Notice that the indirect object is optional in these constructions (but not replaceable by <u>to</u> + NP). Second, there is a relation here between NP_i and NP_k--namely, NP_k is an intrinsic visual property of NP_i. Thus:

62) The steps of Building 20 show the marks of hard wear.

63) ≠?*The steps of Building 20 show what the marks of hard wear are.

Characteristically, such sentences do not describe an action, but a state. Perhaps this accounts for their bias toward generically-interpreted indirect objects:

64) ?*The steps of Building 20 show me the marks of hard wear.

65) The price tag showed {?*only a few people / customers / ?me} the value

Assuming that these generalizations are correct, we set up a system of interpretation:

66) NP_i show (NP_j) NP_k, where NP_i is a physical object.

i) NP_k is an intrinsic visible property of NP_i

ii) at t_0, $R(NP_j, NP_k)$, where R is interpreted 'NP_j see NP_k'

iii) at t_0, $M(NP_i, R(NP_j, NP_k))$, where 'M(x,Y)' is a 'causal' relation

Turning to the other examples, for the third category we set up the following interpretive schema:

67) NP_i show NP_j NP_k, where NP_i is interpreted abstractly

i) at t_0, $R(NP_j, NP_k)$ where R is interpreted 'NP_j know NP_k.'

ii) at t_0, $M(NP_i, R(NP_j, NP_k)$, where M is a 'causal' relation.

The first category is the most complex. We begin by noting that a [+ animate] subject may be construed abstractly, thus falling under the interpretive schema immediately above. Perhaps we may incorporate examples like (59c) into this schema, merely adding that an agentive interpretation is possible. An agentive interpretation seems to entail that in e.g. (59c), Attila undertook some action in order to bring about $R(NP_j, NP_k)$. I am not quite sure how to represent this and leave the problem open.

Although we class (59c) with the third category, noting that it differs with respect to the optional ascription of agentivity, (59a) and (59b) differ in that an agentive interpretation appears to be obligatory. Agentivity is to be distinguished here from intention. In other words, both (59a) and (59b) (as well as (59c) on an agentive reading) are compatible with adverbs like unintentionally, inadvertently, and so on. They are not compatible with adverbs like without doing a thing. An interesting problem, then, is to characterize the relation of the action undertaken by the subject and $R(NP_j, NP_k)$. I have in mind situations like:

LBJ showed a group of reporters his scars.

It happens to be the case that LBJ showed someone his scar. Let us assume that it was a group of reporters. Further let us assume that an industrious film crew videotaped the event and it was shown on a network news broadcast. It would not be appropriate then to say:

LBJ showed the American public his scar.

Is this merely the spectre of direct/indirect causation rearing its meddlesom head again? In part, probably yes. But perhaps not altogether. Perhaps we can contribute to the clarification of this problem by representing this case as follows:

68) NP_i show NP_j NP_k

Animate animate visual object, visual event.

i) at t_0, $V(NP_i)$ where V is some action.

ii) at t_0, $R(NP_j, NP_k)$, where R is interpreted 'NP_i see NP_k'

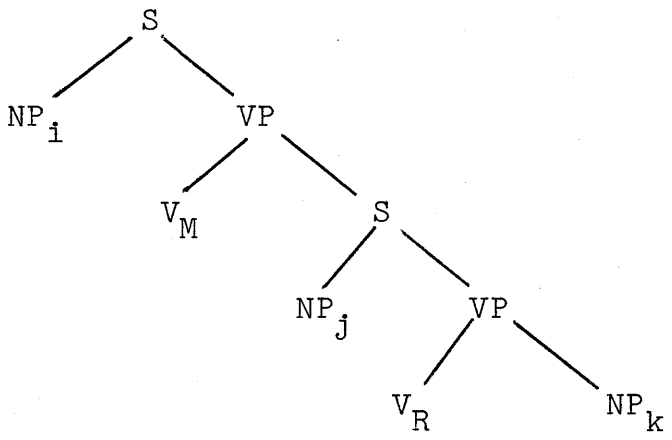
iii) $M(V(NP_i), R(NP_j, NP_k))$, where M is a 'causal' relation.

This completes our discussion of the range of show in the double object construction.

4.4 The discussion of teach and show above has attempted to demonstrate the existence of other verbs besides give which clearly have to receive multiple subcategorization in the lexicon: in particular, a subcategorization for the double object construction. Of particular interest is the fact that, generally speaking, in the cases in which these verbs are restricted to the double object construction, the interpretation associated with this structure is similar in certain crucial respects to the 'third reading' of give discussed previously, particularly with respect to its 'causal' character. In the next section, we explore this similarity further.

4.5 We have assumed that the different interpretations in the case of verbs like give, teach, and show are the manifestation of different semantic rules applying to structures which contain these verbs. It is of interest to contrast this approach with a transformational alternative, particularly in cases in which the interpretation contains what I have called a 'causal' relation. Basically, the transformational approach will assign a structure like the following as the structure underlying sentences (with a 'causal' interpretation) containing give, or teach, or show.

69)



In this structure, 'NP$_i$', 'NP$_j$', 'NP$_k$' represent the subject, indirect object, and direct object of the double object construction respectively; 'V$_M$' represents a 'causal' verb, 'V$_R$' represents an embedded verb associated with the verb of the double object construction. There are several routes one can now take to generate the appropriate range of sentences: one involves predicate-raising; another would involve deletion of V$_R$. For our purposes these are equivalent.

The transformational analysis is based on two claims:

1) the selectional and subcategorizational properties of the derived sentence are a consequence of the selectional and subcategorizational properties of the underlying structure; 2) the interpretation of the derived sentence follows from the interpretation accorded to the underlying structure.

I think that both of these claims are in fact not borne out. To claim the above is to claim that the properties of certain words follow from the properties of certain other words. In the theory that has been employed here, the claim is that the relation between the properties of some words and the properties of other words follows from the intersection of the sets of semantic relations that each word represents.

The difficulties in the way of a transformational account of the 'causal' nature of the constructions we are considering are quite serious. As is well-known, the lexical item 'cause' does not adequately represent the concept of causation which is usually called for.[41] For example, although one might say

70) The cat caused the soup to have a spicy flavor by knocking 3 heads of garlic into it with his tail.

one would hardly say (in such a circumstance)

71) The cat gave the soup a spicy flavor by knocking 3 heads of garlic into it with his tail.

It's sometimes proposed that one may avoid such problems by postulating an abstract lexical item 'CAUSE' which

more closely resembles the desired semantic concept of causation. But this would apparently remove the empirical content from the theory altogether, for then the second claim listed above--that the interpretation of the derived sentence follows from the interpretation accorded to the underlying structure--follows by hypothesis, and the first is empirically vacuous as well, since there is no way of determining the selectional and subcategorizational properties of abstract lexical items except by stipulation.

There are difficulties with the embedded predicate as well, which is represented in (69) by 'V_R'. For example, compare the following sentences:

72 a) John has an ugly appearance.

b) The operation caused John to have an ugly appearance.

c) The operation gave John an ugly appearance.

73 a) *John has his ugly appearance.[42]

b) ?*The operation caused John to have his ugly appearance.

c) The operation gave John his ugly appearance.

In the interests of symmetry, surely (72c) and (73c) should receive parallel treatments. Yet in the absence of auxiliary hypotheses to explain the badness of (73a), the causative analysis will not generate (73c).

Another difficulty faced by the transformational approach concerns the fact that there are well-formed sentences

with the verb cause and the embedded verb have for which there is no corresponding sentence with give:

74) Ziegler's absent-mindedness caused him to have an accident.

75) *Ziegler's absent-mindedness gave him an accident.

Evidently there is some property of sentences like John had an accident which would prevent the causative construction in which they are embedded from undergoing a transformational derivation into the double object construction.[43] But it seems extremely implausible to argue that a different verb have is involved here: have often seems to play the role of a syntactic place-holder and one may wonder whether it should be treated as a lexical item at all. Furthermore, if we start distinguishing different 'senses' of have, the one attractive generalization about the 'causal' interpretation of double object sentences with give that the transformational hypothesis makes seems to disappear: for instead of having united a disparate group of cases by referring to have, the transformational approach is back at scratch.

Still, even if the transformational approach is not entirely satisfactory, it does seem to provide a means of treating a large group of cases. If we want to replace the transformational analysis, we shall have to suggest an alternative. It is at this point, I think, that a substantive theory of semantic concepts would be useful. Such a theory might be able to account for why it is often the case that if two words

represent related concepts, they exhibit semantic extensions in similar ways. Although I am unable to present such a theory--or even the main outlines of such a theory--I would like to suggest here why its development would be useful.

It's a striking fact that the word see has both a visual and a cognitive sense, and we find a similar range of senses with show. But this is not a fact about English: in the languages with which I have some familiarity, the word corresponding to see has much the same semantic range. This is also true for other areas of the vocabulary, especially with respect to basic words like grasp. This seems to be the case regardless of whether there is a genetic relationship between the languages in question. Such considerations also play a role in syntactic change. Isačenko (1974) presents a compelling illustration of this, in a paper devoted to a typological distinction between what he calls 'have-languages' and 'be-languages':

> 2. It is well-known that Indo-European was a [be-language] and that the verbal stems *es- and *bhu- very early merged into a suppletive paradigm preserved in most historically attested IE idioms. It is also known that verbs meaning 'have' are secondary acquisitions in all IE languages and that such verbs stem from transitive verbs with the general meaning 'to hold, to grasp'. This is true of Greek ἔχειν 'to have' (originally 'to hold'), of Latin habere which is related to capere 'to catch, get hold of'; it is true of Germanic *habai- which yielded ME have, Germ haben and is not related to Latin habere, but to Goth hafjan, ME heave, Germ heben; the Slavic verb *jьmeti, 'to have' (R imet'/imeju, Cz miti/mam, Slk mat'/mam, etc.) is formed from the root *jьm- as attested in OCS jeti (from *jem-ti) 'to take'. The semantic change 'take' → 'have' occurred in historical times in Spanish, where tengo 'I have' is derived from VLat tenire 'to hold'. [footnotes omitted]

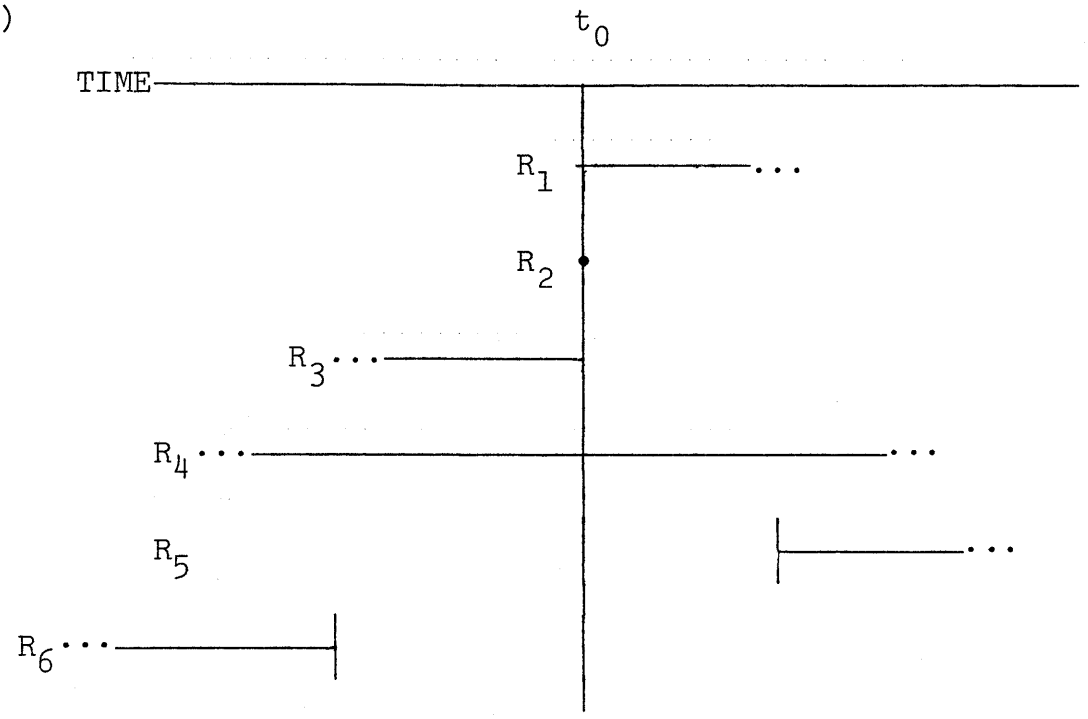
To deal with such facts, what one would like is a substantive theory of semantic structure which would deal with various degrees of paraphrase, semantic shifts, certain universal aspects of metaphor, and so on. Note that the desideratum is not a theory of words--the word itself is relatively arbitrary--but rather a formal and substantive theory of what lies behind the words. I have suggested above that to analyze words like give as being composed other lexical items leads to the wrong results. Perhaps a theory of the semantic structure of lexical items along the lines suggested here would improve on this.

5.0 The final aspect of the dual-NP construction that I want to touch on involves time and modality. In this section I shall attempt to elucidate the relevance of these concepts to the dative constructions.

We begin with the role of time. We distinguish two relevant notions: first, the time to which the tense refers; second, the temporal relations which take as their arguments the tense referent and the time at which the various semantic relations which are the basis of the interpretation hold. We shall be concerned only with the latter.

In the simplest cases, the relation $R(NP_j, NP_k)$ holds at t_0, the tense-referent. It is probably a requirement on every interpretive schema that some relation holds at t_0. There are other possibilities: R could hold prior to t_0 (only), prior to some t' prior to t_0 (prior to t_0 and discontinuous with it), at t_0 and after t_0, at some t' after t_0 (discontinuous with t_0), both prior to t_0 and after t_0. Schematically, we represent these possibilities as follows, where the solid horizontal line represents time and t_0 the tense referent.[44]

1)



5.1 Thus far, we have encountered only instances of the first two types (where R_n represents the different possibilities schematized in (1)):

2) R_1: John gave Max a used copy of Aspects.

3) R_2: John gave Max a kick.

5.2 Consider R_3. With respect to NPs within the VP, R_3 is appropriate in privative verbs. Williams (1974) has discussed certain aspects of a very interesting phenomenon he calls "negative dative movement." This involves syntactic (and sometimes lexical) alternations between of/from, particularly as follows:

4) NP_i V NP_j of NP_k $\quad$ NP_i V' NP_k from NP_j

5) John emptied the tank of gas.

6) ?John emptied gas from the tank.

R_3 is appropriate here, for instance in the interpretation of a sentence like

7) Arnold robbed me of my wallet.[45]

The R_3 type also plays a role in the dual-NP construction. Consider the verb <u>to lose</u>, as it is used in the following sentences (from Bowers, 1973):

8) That decision lost me {a lot of friends / my reputation / my fortune / a valuable piece of land.}

Let us suppose that the interpretation of <u>lose</u> is as follows:[46]

9) NP_i lose NP_j NP_k

i) prior to t_0, $R(NP_j, NP_k)$

ii) at t_0, $-R(NP_j, NP_k)$

iii) $M(NP_i, -R(NP_j, NP_k)$

There are other analyses possible here. It is instructive to compare the interpretations of <u>rob</u> and <u>lose</u> with that of <u>cost</u> in sentences like:

10) The movie cost me $5.

11) The mistake cost me my chance.

12) Nixon's implication in an act of obstructing justice cost him the presidency.

13) Eagleton cost McGovern the presidency.

14) Getting to work late cost Arnold his job.

The problem here is to determine what type of relation R_n holds between NP_j and NP_k. In particular, the choice is between the following two schemata:

15) I. i) prior to t_0, $R(NP_j, NP_k)$
ii) at t_0, $-R(NP_j, NP_k)$
II. i) at t_0, $-R(NP_j, NP_k)$

This is a factual question. We can test the claims of these two schemata by contradicting the relations involved. Since they both share one statement, the crucial aspect will involve the claim that is stated in I(1). Thus, consider:

16) The revelations concerning Eagleton cost McGovern the presidency.
17) ??The revelations concerning Eagleton lost McGovern the presidency.
18) The revelations concerning the plumbers lost Nixon the presidency.
19) The decision to fold cost me a good deal of money that I would have won.
20) ??The decision to fold lost me a good deal of money that I would have won.
21) The decision to fold lost me all the money I had previously bet.

These judgments are rather subtle, I suppose. Assuming that they are correct, however, we represent lose as containing a statement

of the type R_3, whereas the interpretation of cost will include either:

at t_0, $-R(NP_j, NP_k)$

or

at t_0, and immediately after T, $-R(NP_j, NP_k)$

in other words, the negation of a relation of type R_1 or R_2.

The combination of $-R_1$ and the causal relation suggests that cost is similar to counterfactual conditions. Thus the interpretation of

22) Eagleton cost McGovern the presidency.

is very similar in meaning to the sentence

23) If it hadn't been for Eagleton, McGovern would have (won) the presidency.

I will not attempt to state this formally here, however.

Note that such a paraphrase fails for the use of cost illustrated in (6):

24) The movie cost me $5.

25) ≠If it hadn't been for the movie, I would have had (that) $5.

Thus, we must distinguish this sense of cost. Recall the discussion of the use of show in: The price tag shows (NP) the value. (cf. section 4.3). There we claimed:

26) NP_i show (NP_j) NP_k, where NP_i is a concrete object.

i) NP_k is an intrinsic visible property of NP_i

ii) at t_0, $R(NP_j, NP_k)$, where R is roughly see in the visual sense.

iii) at t_0, $M(NP_i, R(NP_j, NP_k))$, where M is 'causal'.

The interpretation of cost in (24) is similar. We represent it as follows:

27) NP_i cost (NP_j) NP_k

1. At t_0 $P(NP_i) = NP_k$, where P(x) is the function 'the price of x'
2. $R(NP_j, NP_i) \longrightarrow -H(NP_j, NP_k)$ where H(x,y) is custody.

This schema leaves certain questions open, e.g. how to precisely represent the fact that the loss of money is tied up with the acquisition by NP_j of NP_i. Note that for the relation 'R' there doesn't seem to be a single English work which represents the appropriate range of interpretations. The range is broad and further specification is necessary:

28) The book
The vacation
Tuition
The operation
The fine } cost me X dollars.

It will have been noticed that we have made some innovations in our notation, adopting functions as well as implication. The function P seems to be necessary to rule out sentences like

29) *Eagleton cost McGovern $5.

30) *The decision to go costs $5.98.

5.3 Let us now consider R_4. This type represents the case in which a relation holds both prior to and after the tense-referent. This type is relevant to verbs like envy and forgive. With both envy and forgive there is an implied (and pragmatically specifiable) relation between NP_j and NP_k.

Consider forgive. Here the relevant $R(NP_j, NP_k)$ is roughly responsibility. Consider

31) God will forgive me my sins.

32) God will forgive me Harry's sins.

(32) may seem strange, but circumstances are easily constructible in which its grammaticality is without doubt, though its truth might be contested. All that is necessary is that the me of (32) be responsible for Harry's sins. One needs to add of course that what is represented by NP_k here is considered counter to a certain body of ethical or religious tenets. I will simply smuggle this into the relation I adopt as holding between NP_i and the responsibility relation, which is absolution. We leave as an open question whether absolution is construed as dissolving the responsibility relation. This is a matter for theologians. We will assume that it is not the case.

We will treat envy in a similar way. In both cases, there will be a relation $R(NP_j, NP_k)$. Furthermore, there will be a (mental, attitudinal, or what not) relation that holds

between NP_i and this relation. In other words, we will say that although there is a relation A holding between NP_i and $R(NP_j, NP_k)$, A does not materially affect R.

Compare the effects of negation on sentences whose verb is <u>forgive</u> or <u>envy</u> with those in which the verb is <u>give</u>

33) God didn't forgive me { my sins. / that mistake. / those inhumane acts of omission. }

34) I don't envy Gabriel the ability to fly.

35) I didn't give Mary a copy of <u>Aspects</u>.

36) I didn't throw Mary the ball.

In these cases, the relevant relations which are specified by <u>envy</u> and <u>forgive</u> are not (in the simplest and most readily available cases) called into question.

We represent <u>forgive</u> and <u>envy</u> as follows:

37) NP_i forgive NP_j NP_k

i) for some span $t_m \ldots t_0 \ldots t_n$, $R(NP_j, NP_k)$, where R represents responsibility.

ii) $F(NP_i, R(NP_j, NP_k))$, where F represents absolution.

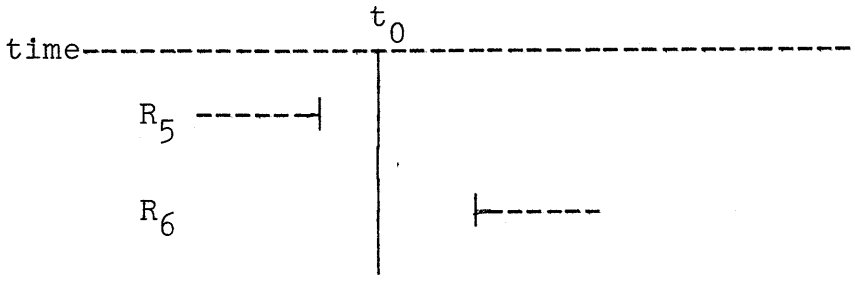
38) NP_i envy NP_j NP_k

i) for some span $t_m \ldots t_0 \ldots t_n$, $R(NP_j, NP_k)$

ii) $E(NP_i, R(NP_j, NP_k))$, where E represents a desire on the part of NP_i that $R(NP_i, NP_k)$ hold.

5.4 We now turn to the question of whether there exist any examples which employ the types R_5 or R_6. Recall that these represent the following temporal situations:

39)



I know of no case for which R_5 is appropriate. This may not be an accidental gap. In order to show that it is not accidental, however, it would be necessary to argue that its non-existence follows from more general considerations.

R_6 seems to be appropriate for verbs like <u>offer</u>, verbs like <u>send</u>, and dual-NP constructions which have a <u>for</u>-dative paraphrase. Let's first consider the verb <u>offer</u>.

40) John offered Max a cigarette.

Here we are not concerned with the content of the relation which holds between Max and cigarette. As in other instances of the dual NP constructions, this may vary. The problem is how to express the modality of <u>offer</u> properly. First, it is not a consequence of the truth of (40) that the requisite relation '$R(NP_j, NP_k)$' is in force. Therefore, we do not want to state that '$R(NP_j, NP_k)$' holds at t_0. Nor will it do simply to state that '$R(NP_j, NP_k)$' holds at some t' after t_0, since it is not a consequence of (40) that the requisite relation will in fact ever hold. An alternative is to say that:

41) i) at t_0, $\Diamond R(NP_j, NP_k)$ at t' after t_0

ii) $M(NP_i, (\Diamond(R(NP_j, NP_k)$ at $t' > t_0)))$, where M is 'causal'.

Although this is becoming somewhat complex, it is still probably not quite right. For instance, we probably want to add a statement that at t_0, $-R(NP_j, NP_k)$, although if we specify 'M' properly, such a statement may not be necessary. Furthermore, we might want to make the relation 'M' stronger than stated: for example, although I might convince Harry to hire Arnold in a certain capacity, thereby making it possible that Harry have a job, in doing so I do not thereby offer Harry a job. I leave open exactly how this is to be done.

A more central question is how to deal with the fact that an offer can be left open or retracted. This suggests that we add a time operator to M. Thus we will way:

ii) At t_0 and for some span of time $t_0 \ldots t_n$
$M(NP_i, (\Diamond(R(NP_j, NP_k)$ at $t' < t_n)))$.

We will test this in the following way. Consider the sentence:

42) Access to the tapes offered Cox the best evidence.

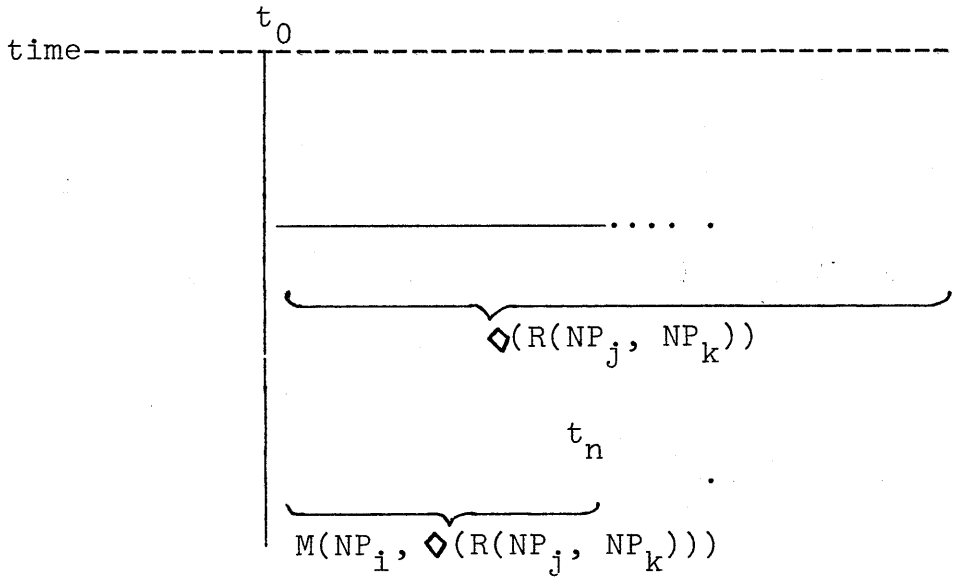
Notice that (42) does not entail that Cox ever had access to the tapes. I will not take up this problem. On the other hand, if Cox did in fact have access to the tapes, it might have been the case that his access lasted only a specified period of time. In view of this, I think we want to state that the "offer" here

is limited (at the broadest) to that period in which Cox in fact did have access. Furthermore, we want to add that the "offer" expires upon the establishment of $R(NP_j, NP_k)$. But the "offer" may be still further limited.

43) Access to the tapes offered Cox the best evidence until it was revealed that a good deal of the content had been erased.

In such a situation, the access may still hold, while the offer does not. If this is correct, then, although offer contains an instance of R the R_6 type, this instance is embedded under the relation 'M' which is actually an instance of R_1. Schematically,

44)



5.4.1 Compare offer to promise. The crucial distinction seems to be here the difference between two modal notions: possibility and obligation. For our purposes, then, the distinction is easily representable:

45) NP_i promise NP_j NP_k

k) At t_0 and for some span of time $t_0 \ldots t_n$ $M(NP_i, (R(NP_j, NP_k) \text{ at } t_n))$, where 'M(x,Y)' is interpreted 'x is obligated to make Y hold'

From this it cannot be deduced that R is true (at t or at t'). This is consistent with intuition.

5.5 The extension of the system to modal notions immediately opens the way for an account of the dual-NP reflex of the <u>for</u>-dative. The relevant modality here is intention. Two preliminary remarks about the dual-NP reflex of the <u>for</u>-dative. First, as far as I know, the relation $R(NP_j, NP_k)$ is never entailed; second, there is always a direct relation between NP_i and NP_k. In other words, from the truth of the sentence

46) John baked Mary a cake.

it follows, first, that John baked a cake and second, I claim, that John intends R (Mary, the cake). We represent this as follows:

47) NP_i bake NP_j NP_k

i) At t_0, $B(NP_i, NP_k)$, where B is <u>bake</u>

ii) At $t_0 \ldots t_n$, $I(NP_i, (R(NP_j, NP_k) \text{ at } t'))$, where I = intend, R a relevant relation.

It is rather interesting that the relation I holds at t, rather than at t'. There is data that supports this assumption. Consider first the strangeness of a discourse like:

5) I baked a cake. I think I'll give it to Mary. No, I guess I'll give it to you. What actually happened then was that I baked you a cake.

Another example involves the following contrast with an explicit for-dative. Compare:

6) I bought my wife this tea-kettle, let me see, back in 1952.

7) Originally, I bought this tea-kettle for my wife, but I decided to keep it.

8) *Originally, I bought my wife this tea-kettle, but I decided to keep it.

If we represent the intention relation as holding from the time of the tense-referent until the time at which $R(NP_j, NP_k)$ holds (or becomes impossible to establish), we have the basis of an account for these problems: namely, there is an explicit contradiction of the intention asserted of the subject that $R(NP_j, NP_k)$ is to hold at some point.

5.6 In view of our discussion of offer, promise, and the double-object reflex of the for-dative, it appears to be the case that we can claim that there are no pure cases of the types R_5 and R_6. It is true that there exist relations which do not hold at t_0. We have ample evidence of this, and they are all instances of the type R_6. Yet when they do occur, it is

arguably the case that they always occur inside the scope of a relation which is itself an instance of R_1. In view of the fact that an offer can be rescinded whereas a promise cannot (ethically) be broken nor an asserted intention countermanded, perhaps a distinction based on the content of the various modalities is called for. Notice that all the modal notions employed are future-oriented. Are there any retrospective modals? If not, this suggests that the lack of any instance of the type R_5 may be due to the lack of retrospective modal notions.

6.0 In this section, I shall take up the question of what I call, for convenience, 'the prepositional dative constructions'. My caution stems from the fact that it is an open question whether we can construct a theory which renders this class well-defined. For our purposes, we may begin with the following necessary condition: a 'prepositional dative construction' is a simple sentence whose VP (at some level) is of the form X-V-NP-P-NP-Y, where the fourth term ('P') is either to or for. I shall argue that in certain respects this definition is too broad, as there are certain cases which meet the above criterion, on the one hand, yet should be excluded from the domain of the dative alternation in a principled way. In part, the principles which underly this exclusion are the subject of the present section. We obviously cannot in advance define the prepositional dative constructions as just the cases for which the double object construction is an alternative, since this is just the question at issue. Until further discussion has clarified the matter, I beg the reader's indulgence for my loose terminology.

Even by the above definition, there are at least two prepositional dative constructions--one in which the preposition is to and one in which it is for.[47] I treat them together, however, since with respect to certain gross characteristics which are of interest they are quite similar. In particular, I shall try to demonstrate that in the case of both the 'to-dative' and the 'for-dative': 1) there are semantic distinctions to be drawn (in some cases) between the prepositional dative and the corresponding double object sentence; 2) the alternation in question

(be it to-dative or for-dative) operates over several disparate semantic domains; 3) the alternation in question is subject to morphological conditions. At the end of this section, following the discussion of these problems, we shall try to assess their role in attempts to formulate the domain of the alternation, particularly the role of semantic considerations.

6.1.0 For-datives

For-phrases have been investigated recently by Williams (1974), and, more extensively, by Faraci (1974). They point out that for-phrases occur as complements to NP's, VP's, and some higher node, either PredPhrase or S. A variety of interpretations are involved. According to Faraci's analysis, for-phrases which have a 'dative' interpretation are a subset of the for-phrases immediately dominated by VP. This conclusion is helpful, as it places a syntactic limitation on which for-phrases we can expect to find with verbs which occur in both the for-dative construction and the double object construction, a limitation which was reflected in our preliminary definition of 'prepositional dative construction'. What does it mean for a for-phrase to have a 'dative' interpretation, however?

Williams (1974) suggested that for is essentially a marker of (thematic) Goal within the scope of an intention operator. Regardless of whether this assumption can handle the variety of interpretations which for plays a role in,[48] it formed the basis of our analysis above of the double object reflex of the for-dative construction, and it also serves as the

basis of our interpretation of the prepositional <u>for</u>-dative. Consider the sentence:

1) John baked a cake for Mary.

Ignoring irrelevant readings--i.e., those parallel to 'What John did for Mary was bake a cake' and 'What John baked was a cake for Mary'--we represent the reading of (1) as follows:

2) NP_i bake NP_k for NP_j

i) at t_0, $B(NP_i, NP_k)$[49]

ii) at t_0, $I(NP_i, (H(NP_j, NP_k)$ at t' $t_0))$

Interpreting 'B(x,y)' as 'x bake y', 'H(x,y)' as 'x have y', and 'I(x,Y)' as 'x intend Y', we can account for two entailments of (1), e.g.

3) John baked a cake.

4) John intended that Mary have the cake he baked.

Notice that there is no entailment to the effect that Mary has the cake or anything of the sort. The crucial distinction between the representation of the overt <u>for</u>-dative and its double object reflex lies in the treatment of the intention relation. I claim that in the overt <u>for</u>-dative case, the intention is asserted only at t_0, whereas with respect to the double object reflex of the <u>for</u>-dative, the intention relation holds not only at t_0, but subsequently as well. Assuming such a distinction, we can account for facts of the following kind, already noted in part in section 5.5 above:

5) I baked a cake for Max, but now that you're here, you may as well take it.

6) *I baked Max a cake, but now that you're here, you may as well take it.

7) John made the pancakes he gave Mary for Jack.

8) *John made Jack the pancakes he gave Mary.

I have tried to construct sentences which will be true only in situations in which the intentions of the subject have changed. Since this seems to be the distinctive factor involved in the oddity of sentences like (6) and (8), this has been reflected in the difference between the set of truth-conditions assigned to (1) and the set of truth-conditions assigned to the double object reflex of (1). (cf. §5.5 above).

6.1.1 Independently of whether or not the distinction that we have drawn with respect to intention is the correct way of accounting for the difference between (5) and (7), on the one hand, and (6) and (8), on the other, the essential aspects of a set of truth-conditions like (2) are first that there is a relation between the subject and the direct object, and second, that the subject intends that there will be a relation (of a restricted sort) between the indirect object and the direct object. Is this sort of structure adequate for all the verbs which undergo the <u>for</u>-dative alternation?

Consider, for example, the classification of <u>for</u>-dative

verbs proposed by Green (1974). Green divides the verbs in question into five classes, as follows:

9) i) 'verbs denoting creative acts--acts in which an object is created or transformed to produce a certain effect: make, cook, boil, roast, sew, knit, paint, draw, etc. ...'

ii) 'verbs denoting activities involving selection, such as buy, purchase, find, get, choose, pick out, gather, save, and leave ...'

iii) 'verbs denoting performances considered artistic: sing, chant, recite, play (instruments and compositions), dance.'

iv) 'verbs that express a kind of obtaining; earn, gain, and win are the most conspicuous members.'

v) benefactive constructions such as rob me a bank.

I shall assume that this classification is complete in the sense that for any verb that occurs in both the for-dative construction and the double object construction there is a class which includes it. If this is correct, it is not difficult to see that two sorts of problems prevent the extension of a semantic structure like (2) to the remaining cases. Both of these concern the second argument of the intention relation: 1) does the direct object

play a distinctive role in the intention relation or not? 2) what is the content of the second argument of the intention relation?

6.1.2 Consider first what Green refers to as the 'benefactive' construction. It is immediately obvious that a schema like (2) cannot account for the interpretation of sentences of this type, since evidently there is no relation whatsoever which holds between the indirect object and the direct object per se. In other words, in a sentence like (10),

10) All you have to do to gain my confidence is rob me a couple of banks.

It is not being suggested by the speaker that the indirect object of the verb phrase rob me a couple of banks should come to have a couple of banks. Rather, it is suggested that the indirect object will in some sense benefit from the robbing of the banks. How the 'benefit' accruing to the indirect object is to be characterized is far from clear.

It is conceivable that a characterization of the notion 'dative for' can be constructed which will comprehend both this benefactive construction and the cases discussed earlier. In terms of the semantic framework adopted here, however, such a unified characterization would require a level of abstraction so great that the notion would have little content left. I shall therefore treat the benefactive construction as an idiosyncratic case.

There is some evidence that such a treatment is independently necessary, as the benefactive construction--at least in its double object guise--is notable for several tendencies not generally shared by other cases of the dative alternation. Two factors stick out. The first concerns the fact that a pronominal indirect object is far more acceptable in such constructions than a non-pronominal one. The second concerns the fact that this construction seems to be most felicitous in sentences of a hortatory nature (and sentences reporting speech acts of a hortatory nature) than elsewhere. Thus, contrast a sentence like (10), in which both of these requirements are fulfilled, with (11), in which they are both violated.

11) ??Six months later, John seems to have robbed Frank a couple of banks.

Whether or not even rough limits on the domain of this alternation can be set is not clear, particularly since in contemporary literary English the construction is of a rather marginal character and intuitions concerning the data tend to be vague. Nevertheless, it seems to me that along with distinctions like that between (10) and (11), we also find differences like the following:

12) Do me just one more thing before you leave.

13) He did just one more thing for me before he left.

14) ?He did me just one more thing before he left.

15) He asked me to rob him a couple of banks.

16) He refused to rob a couple of banks for me.

17) ?He refused to rob me a couple of banks.

If the judgments assigned to these sentences are a reliable indication at all of the appearance of the benefactive double object construction, its appearance is dependent on far more than merely the compatibility of the verb in question with a benefactive for-phrase. It is for this reason that I have invoked the notion 'hortatory speech act', since this provides a bridge between cases like (12) vs. (14), where the syntactic distinction between imperative and declarative is relevant, and cases like (15) vs. (17), where the locus of differentiation involves the matrix verb.

How these constructions are to be generated hinges primarily on how the constraint concerning the hortatory nature of the sentence is to be dealt with. The pronominal restriction can easily be handled either by a special transformation which applies only to pronouns or by establishing a pronominal clitic position to the right of (transitive) verbs.[50] Assuming that transformations do not have the power to distinguish between different sorts of speech acts, the possibility of a transformational account of this alternation is contingent on whether surface structure is the appropriate level to enforce this constraint. The resolution of this question depends on the power of surface interpretive rules: in particular, whether rules of surface structure interpretation are able to distinguish benefactive indirect objects from other indirect objects, since in many cases of the double object construction, a benefactive

interpretation is simply irrelevant. On either of these hypotheses, however, the benefactive indirect objects are accorded distinct treatment. This is necessitated by the distinction concerning pronouns which holds between the benefactive cases and the other dative cases.

6.1.3 Analogous problems arise when we attempt to extend our interpretive schema to Green's third and fourth classes. For instance, consider (18):

18) Pinza sang us the Catalogue Aria.

It is difficult to see what sense can be made of saying that the indirect object is intended to have (in some sense) the direct object. In fact, one wonders whether it is appropriate to specify any relation holding between the indirect object and the direct object in such sentences: in this regard, they seem to have more affinities with the sentences of Green's benefactive construction, in that the performance of the action in question is for the benefit of the indirect object, as opposed to the referent of the direct object per se. And in sentences like (19), which correspond to (18) with respect to the dative alternation, it seems to do no violence to the intuition to assign the for-phrase a 'benefactive' interpretation.

19) Pinza sang the Catalogue Aria for us.

What blocks the assimilation of this class to the benefactive construction, however, is the lack of the two constraints dis-

cussed above concerning pronouns and the 'hortatory' force of the sentences in which the benefactive construction occurs most idiomatically. Thus, in contrast to the distinctions noted in the last section (cf. 10-17), the following sentences seem perfectly fine:

20) Pinza sang the audience a medley of show tunes.

21) John refused to play me any Scriabin sonatas.

It is occasionally assumed that the double object construction as it appears with the verbs of this class is in fact a reflex of a prepositional to-dative construction. Note, however, that the verb play does not occur with to:

22) John played us a sonata.

23) *John played a sonata to us.

24) John played a sonata for us.

It's not entirely clear that the prepositional for-construction is an appropriate source for the double object construction in the case of these verbs. For example, consider sentences like the following:

25) Thelonius played a few traditional pieces for the critics.

26) Thelonius played the critics a few traditional pieces.

The problem here is that (26) seems to imply that Thelonius was performing for an audience made up entirely of critics,

whereas (25) has no such implication. It would be imprudent to base any argument on these facts, however, since the putative implication might simply arise from the different accentual patterns usually accorded to sentences of these kinds: in particular, it is easier to accentuate the critics when it is the object of for than when it is the indirect object, thus facilitating a contrastive interpretation.[51]

In short, the situation is this: for this class of cases, the interpretation of both the for-phrase and the indirect object seems quite similar to that of the benefactive construction; yet the indirect object is not subject to the constraints which are common to the benefactive cases discussed above. Thus, from the point of view of relating the for-construction to the double object construction for these verbs, it is desirable to treat the alternation for these cases in the same manner as we treat the alternation for the first two classes, given the similarity in syntactic behavior. A consequence of this, however, is that no uniform semantic characterization can be given of the domain of the for-dative domain.[52]

6.1.4 It is well-known that the preposition for has non-dative interpretations as well. The most extensive work in this area that I am aware of is that of Faraci (1974). Faraci points out, for example, that sentences such as the following are ambiguous:

27) Helmut built an electric chair for Himmler.

Here we do not know whether Helmut intends Himmler to get the electric chair or simply to have it. In the double object construction, only one of these readings is available:

28) Helmut built Himmler an electric chair.

Evidently, the dative alternation is sensitive to this sort of distinction.

Yet it is difficult to conclude anything striking from this fact. If the argument in the last section is correct, there is no uniform semantic characterization of the domain of the for-dative alternation in terms of the semantic interpretation of the for-phrase. On the other hand, there appear to be instances of for-phrases that we would like to exclude on a principled basis from the domain of the for-dative alternation, and the interpretation of sentences in which such phrases occur is in general quite distinct from the interpretation of sentences which contain a 'dative' for.

What seems to be lacking here is a theory of prepositions. Suppose we consider the question whether it is preferable to postulate a single preposition for, for example, which is subject to a variety of context-sensitive interpretive rules or whether it is preferable to postulate many prepositions for, each of which has a fixed semantic interpretation which is contributes to the sentences in which it occurs. The difficulty in choosing between these two hypotheses lies in the fact that they are probably notational variants: each theory is able (in principle) to account for the fact that the interpretation is context-de-

pendent--one theory on semantic grounds, the other theory on syntactic grounds. It is true that one theory purports to account for the fact that there is a single preposition, orthographic for, correlated with a variety of interpretations, but this is a purely descriptive advantage, since we have no account on this theory of why this should be the case as opposed to any number of other possibilities.

It is possible of course that a theory which mixes the two hypotheses suggested above may succeed in justifying a single preposition for which correlates with the domain of the for-dative alternation. Since a syntactic definition (in terms of orthographic for) seems too crude, while a semantic definition cuts too fine, there may be some intermediate level--the level of thematic relations, perhaps--at which a precise characterization of the domain of the for-dative alternation can be stated.

At the moment, however, I don't see how this can be done. And as things stand now, we simply have to list the two distinct interpretations of for which appear to be relevant. Furthermore, as far as I can tell, very little hinges on whether this list is stated directly in terms of semantic properties or in terms of distinct prepositions for. One might argue, of course, that if the basis for postulating distinct prepositions for is the distinctions in interpretation that arise in various contexts, one could do away with the excess baggage of multiple prepositions for. Such an argument, however, provides no insight into the characterization of the domain of the rule.

We have been considering the problem of stating the

domain of the for-dative alternation from the point of view of the semantic contribution of the for-phrase. Another possibility is to search for a property common to the set of verbs which occur in both constructions. In fact, this is the way Green (1974) approached the problem. But Green's efforts resulted in five classes (cf. 9, above), and the prospects of reducing these five classes to a single one seem remote at best, even excluding the fourth and fifth classes from consideration. Thus, regardless of whether we concentrate our efforts on the set of verbs in question or the interpretation of the preposition for, we seem forced to the conclusion that the for-dative alternation operates on several distinct semantic domains. And as there are a variety of ways in which such semantic generalizations as we are able to extract can be implemented in the actual statement of the alternation, we shall not pursue this question further.

6.1.5 Let us grant for the sake of argument that it is a necessary condition for a verb that occurs in the for-dative construction to occur in the double object construction that it meet such-and-such semantic conditions, and raise the question of whether semantic considerations can in principle provide sufficient conditions. In certain respects, one may wonder whether it is possible to falsify the claim that semantic considerations provide both necessary and sufficient conditions for the applicability of the for-dative alternation (or any other syntactic alternation for that matter), since in constructing an argument against this position one is always open to the

objection that one has formulated the semantic conditions at issue incorrectly. But although it may be impossible to falsify this thesis, it is possible to construct an argument which demonstrates that it is extremely implausible that this claim is true.

Note first of all that the for-dative alternation is a productive one. An indication of this is the fact that the addition of particles such as out and off to verbs which ordinarily do not occur in either dative construction often renders the new combination compatible with both dative constructions. Typical examples of this process are:

29) *John fished a trout for Mary.
30) *John fished Mary a trout.
31) John fished out an apple for Mary.
32) John fished Mary out an apple.

33) *John bit a piece of licorice for himself.
34) *John bit himself a piece of licorice.
35) John bit off a piece of licorice for himself.
36) John bit himself off a piece of licorice.

37) *John hacked a piece of steak for himself.
38) *John hacked himself a piece of steak.
39) John hacked off a piece of steak for himself.
40) John hacked himself off a piece of steak.

One may hypothesize that in these cases the combination of verb and particle has the result that the new entity satisfies

certain semantic conditions not satisfied by the verb alone.

Having established the productivity of the for-dative alternation, it is obvious that semantic properties of a given verb that occurs in the for-dative construction cannot provide sufficient conditions for it to occur in the double object construction. This follows from the fact that there are many pairs of verbs which are roughly equivalent in interpretation yet which display an asymmetry with respect to their occurrence in the double object construction. I give examples below:

41) John {got / obtained / procured} a ticket for Mary.

42) John {got / *obtained / *procured} Mary a ticket.

43) Brahms {wrote / composed} a concerto for Joachim.

44) Brahms {wrote / *composed} Joachim a concerto.

45) Wright {built / erected} a house for Robie.

46) Wright {built / *erected} Robie a house.

Many such pairs exist. In principle, of course, it is possible that a set of semantic properties could be devised such that for each pair, one member of the pairs conformed to this set of properties whereas the other member did not. Yet such an accomplishment is extremely implausible. In particular, note that the semantic conditions which specify when the dative alternation is possible must be stated with sufficient generality to let in a wide variety of cases. Thus, even assuming

that it could be demonstrated that the members of the above pairs are not synonymous with each other, such a demonstration would not add much to the plausibility of the hypothesis that semantic properties alone can provide sufficient conditions for the operation of the dative alternation, since a general statement of such conditions is likely to let in both members of each pair if it lets in one. The same point can be made with respect to acquisition: if semantic considerations alone provided necessary and sufficient conditions for the operation of the dative alternation, one would expect the above distinctions to vanish virtually overnight. Yet they persist.

Let us consider the question of whether it is possible to distinguish the members of the above pairs on non-semantic grounds. There are a variety of ways in which this might be done, most of which have been suggested in the past. For instance, we might set up a distinction between words of Germanic origin and words of Romance origin. Or we might distinguish them on the basis of morphological structure. Neither of these alternatives is without weaknesses.

Yet before attempting to adjudicate between these hypotheses, there are some remarks of a more general nature which clarify the productivity of the _for_-dative alternation in general, it's obvious that we would like to have a principled and general basis on which to exclude certain words from the domain. Second, if the argument given above is sound, it is quite implausible that semantic considerations will be of much use in restricting these cases from the domain of the rule. Thus, we can be

reasonably sure that the property or set of properties which we are looking for is to be found not in considering the concepts involved but rather in considering the words themselves.

Consider now various ways of stating the constraint in question. Green (1974), for example, suggests four possibilities (all of which she rejects--cf. Green, 1974, pp. 78-79). These are: 1) 'a constraint on surface structures to the effect that only one-syllable words may have internal indirect objects', countered by words like promise, signal, guarantee, etc.; 2) a constraint on surface structures to the effect that only initial-stressed words containing less than three syllables may internal indirect objects', countered by words like allow, advance, deny; 3) a requirement that 'only [+ Anglo-Saxon] words may have an internal indirect object', countered by the fact that speakers need not have any historical knowledge of the language in order to know the domain of the dative alternation, as well as by the fact that some words of Anglo-Saxon origin do not occur in the double object construction while there are words of Romance origin that do; and finally, 4) 'a restriction on the operation of the dative-movement rule, not on surface structure; the rule applies only to words with initially-stressed stems of two syllables or fewer', which is open to the objection that words such as guarantee and telephone occur in both constructions.

Green appears to be aiming for a phonological characterization of the entire domain of the rule. It seems to me to be profitable to consider a weaker theory, one which

merely excludes from the domain a certain class of words. Suppose we state the following constraint:

47) The dative alternation does not apply if the verb in question has the internal structure $[X]_{prefix} = [Y]_{stem}$

Essentially, this constraint will only apply to words of Romance origin, if, following Chomsky & Halle (1968), we restrict the occurrence of the '=' boundary to Latinate words with a prefix + stem structure. This formulation has several advantages. First, it excludes words like obtain and procure from the domain of the dative alternation, since they evidently have the specified structure. On the other hand, words like promise and offer are not affected, since one of the effects of the specified structure is to restrict stress to the stem (cf. Oehrle (1971)) and these words do not have this characteristic stress pattern. Second, we attempt to avoid the problem of the historical origin of words in the English lexicon: an advantage since, although we cannot expect speakers of English to have detailed knowledge of etynology, there are grounds for thinking that speakers must have some knowledge of the internal structure of some words.

Note, however, that the constraint as stated is probably both too strong and too weak. It is too strong because it wrongly excludes words like assign from the dative alternation, and too weak because it fails to deal properly with cases which are not of the specified structure. The best way of countering this objection, however, is to point out that we come closer

to descriptive adequacy by imposing the constraint than we would without it, since without the constraint, we apparently have to deal with all the words of this form in an ad hoc way, whereas the exceptions to the formulation of the constraint are far fewer.

Finally, note that the for-dative alternation is not alone in being subject to a constraint of this kind. Not only is the to-dative alternation constrained in the same way as well, but the construction of verb + particle combinations also seem to be subject to a constraint of this kind (cf. Fraser, 1965). We shall return to this point briefly below in our discussion of the to-dative alternation, and again in Part Three.

This ends our discussion of the domain of the for-dative alternation. I have tried to make three points: first, that there exist pairs of sentences related by the for-dative rule which are not semantically equivalent; second, that although on semantic grounds only a subset of the sentences of the form X-V-NP-for-NP-Y are within the domain of the rule, there is apparently no uniform semantic characterization of the domain of the rule; and third, that the for-dative alternation is subject to a morphological condition. In the next section, I shall argue that these same considerations apply to the to-dative alternation as well.

6.2 To-datives

6.2.1 The question of non-equivalence.

It is not difficult to find cases in which, given a pair of strings which exhibit the to-dative alternation, one is ambiguous and the other is not. In fact, we can show this in both directions. Consider first:[53]

48) The doctor gave Mary an attractive skin.

49) The doctor gave an attractive skin to Mary.

The interpretation of (49) is consistent with a transfer of ownership or custody of a certain physical object--for example, the tanned hide of some animal. (48) has this interpretation as well. But (48) also has an interpretation in which, in some way in which the doctor played a role, Mary's complexion improved. This reading is not available in (49). But such sentences involve no more than a distinct interpretation in each case for the expression 'an attractive skin'. And we can easily handle the ambiguity of (48) according to the rules proposed in sections 1-3. Nor is it terribly difficult to block the inalienable reading in (49): we merely need to find a way to rule out expressions with an inalienable interpretation from occurring in this position.

A more interesting example, perhaps, involves the verb send. In one of its uses, send is a dative verb, and its set of truth-conditions meets the transferrance criterion. On another interpretation, send is used as a causative of motion. For example:

50) John sent a letter to Mary.

51) John sent Mary a letter.

52) The collision sent the car to the other side of the gas station.

53) *The collision sent the other side of the gas station the car.

Again, there is no difficulty in ruling out (53), since the relation between the car and the gas station is a purely spatial one. But consider sentences like:

54) John sent the ball back to the pitcher.

55) John sent the pitcher back the ball.

(54) is ambiguous, whereas (55) has only the dative interpretation. I think that this can be brought out by adding more material, compatible only with the motional interpretation:

56) With one stroke of the bat, John sent the ball back to the pitcher.

57) *With one stroke of the bat, John sent the pitcher back the ball.

This case is more interesting than the case given in (48-49), because here there is no question of a change in interpretation of one of the noun phrases of the sentence. To block (57), we must have a way of blocking the strictly motional reading in the double object construction and ensuring that the phrase 'with one stroke of the bat' occurs only when the motional reading is possible. A number of ways of doing this suggest themselves, but I shall not attempt to choose between them.

Now, in both of these cases, there has been a clear

distinction between the interpretation of various constituents, in the first case concerning the expression 'an attractive skin', in the second case concerning the motional interpretation of send. There are, however, cases in which a pair of sentences which manifest the dative alternation apparently lack this property, yet have distinct truth-conditions. Consider:

58) John threw the ball to the catcher, but the throw went wide.

59) ??John threw the catcher the ball, but the throw went wide.

In this case, unlike the previous cases, one does not have the feeling that there are two distinct senses involved (with respect to one of the constituents of the sentence), and that the distinction between (58) and (59) is somehow related to this sense-differentiation. In fact, without the added material following but, there is virtually no way of distinguishing the sentences at all. But if the distinction between (58) and (59) is correct, we have an example of distinguishable ranges of applicability concerning a pair of sentences related by the to-dative alternation.

It is difficult to see exactly how to characterize the distinction involved. Nevertheless, we make the following attempt:

60) NP_i throw NP_j NP_k

i) prior to t_0, $H(NP_i, NP_k)$

ii) at t_0, $I(NP_i, P(NP_j, NP_k)) \& A(NP_i, -H(NP_i, NP_k)) \& M(A(NP_i, -H(NP_i, NP_k)), P(NP_j, NP_k))$

Here, as mentioned in note 22, 'H(x,y)' is interpreted as 'x hold y', 'I(x,Y)' is interpreted as 'x intends Y', 'P(x,y)' is interpreted as 'x has physical control of y', 'A(x,Y)' is interpreted as 'x acts (in a characteristic way) with the result Y', and 'M(X,Y)' is interpreted as 'X is sufficient to cause Y'.

The heart of this representation is the clause that states that the action of NP_i suffices to bring NP_k into the sphere of NP_j's physical control. In the case of the to-dative structure, as opposed to the double object structure, we can account for the distinction between (58) and (59) by weakening this relation slightly, so that it is interpreted roughly as 'the action of NP_i is of a kind that is normally sufficient to bring NP_k into the sphere of NP_j's physical control'.

Regardless of the adequacy of our representation, we are faced with the problem that such distinctions are possible. Let us use the term 'success condition' as a way of talking about the minimal criteria which the set of truth-conditions assigned to a given verb set up for the relation between the direct object and either the indirect object or the prepositional dative. We now want to ask whether for any given verb which undergoes the to-dative alternation the success conditions for the double object structure differ from the success conditions for the prepositional dative structure.

In general, I think, the success condition does not change. For example, in cases where the ownership of an object is transferred, i.e., where social relations are changed by mutual consent, no such distinction seems to be possible. In other words, there seems to be no distinction whatsoever between sell x to y and sell y x. Among communication verbs, the distinction appears more as a typological one than as a difference in dative pairs. Thus, we find differences between tell x S and say to x S like the following:

61) I {?*told Baravelli / said to Baravelli} that Flynose had won, but he was already out of earshot.

62) I {*told noone in particular / said to noone in particular} that Flynose had won.[54]

If the distinction we have suggested above to account for the difference between (58) and (59) is on the right track, the cases in which we would expect to find differences in success condition are just those in which the action of the subject does not immediately bring about the specified result. Thus, the relevant class will include verbs like throw, send, toss, kick, and so on. But I think one must be sanguine about the possibilities of finding real distinctions in truth-conditions between the two dative manifestations of these verbs. It is possible that there are distinctions to be drawn between the pairs of sentences below:

63) After I wrote a few words to him, I tore the letter up.

64) ??After I wrote him a few words, I tore the letter up.

65) I handed the sandwich to him--but he couldn't take it because his hands were tied.

66) ?I handed him the sandwich--but he couldn't take it because his hands were tied.

In fact, the stability of interpretations for these verbs in the two different structures is somewhat surprising. If there are in general two distinct ways of interpreting double object constructions (cf. sections 1-3), then we might expect to find more cases in which there is variability in interpretation.[55] Most of the cases of non-equivalence arise, however, not because of distinctions between the two structure per se, but rather because of the ability of various verbs to occur with noun phrases which, because of properties of their own, do not occur as the direct object in the prepositional construction (cf. 48-49). It seems to be a property of human languages that the ability to alter the linear structure of a given message is highly-valued (though not without limits), and one may speculate that this property renders the dative constructions by and large semantically stable.

6.2.2 The domain of the to-dative alternation.

In this section, I shall attempt to demonstrate that, as in the case of the for-dative alternation, although there are instances of the structure X-V-NP-to-NP-Y which we would like

to exclude from the domain of the to-dative alternation, it is difficult to give a unified semantic characterization of the domain of the rule. Furthermore, I shall argue that the morphological constraint on the operation of the for-dative alternation that was formulated in section 6.1.5 holds for the to-dative alternation as well.

We have seen that with the possible exception of a few cases if a verb appears in both manifestations of the to-dative alternation, the semantic properties of the pairs of sentences related by the rule are invariant (at least with respect to properties relevant to the truth value of the sentence with respect to a given model). In sections 1-2 we tried to formulate sets of truth-conditions which would account for the interpretation of double object sentences which have corresponding to-dative forms, and these formulations seem adequate in general for the prepositional to-dative construction as well. Recall that in that discussion, I tried to resolve some of the difficulties that came up because different substantive notions of possession are involved for different verbs within the domain of the dative alternation by giving a formal definition of the notion 'transferrance'. Furthermore, we stated an implication using this notion which was meant to characterize the class of verbs occurring in the double object construction which also occur in the prepositional dative constructions. One of the problems that arose with this implication was the fact that we had to weaken the definition of transferrance so that it involved the notion of subordinate relations. Let us now con-

sider the consequences of turning the implication around in order to see if it provides any insight into the problem of which verbs that occur in the structure X-V-NP-to-NP-Y also occur in the double object structure. To facilitate discussion, we repeat the definition of transferrance and reformulate the implication so that it operates in the opposite direction.

63) If the set of truth-conditions assigned to a verb contains the following propositions and either R and R' are identical or R' is subordinate to R, then the verb has the transferrance property:

i) prior to t_0, $R(NP_i, NP_k)$

ii) at t_0, $R'(NP_j, NP_k)$

(where 'NP_i' represents the subject of the simple sentence containing the verb in question)

64) A verb occurring in the structure X-V-NP-to-NP-Y occurs in the double object structure only if it has the transferrance property.

Although (64) is not strong enough to tell us exactly which verbs occur in both structures, it still does some work, since it excludes those verbs which lack the transferrance property from occurring in both structures.

Consider some cases of the structure X-V-NP-to-NP-Y which do not undergo the dative alternation:

65) John credited the success of the mission to Kissinger.

66) John attributed the success of the mission to Kissinger.

67) We owe the success of the mission to Kissinger.

68) John attached the picture to the wall.

69) John nailed the medal to the floor.

70) The turned the guns to the sea.

71) They pointed the guns to the sea.

For each of these cases, I think that it is possible to show that the transferrance criterion is not met. In the case of (65-67), the subject (crudely speaking) places the responsibility for the success on Kissinger, a situation which does not require any relation at all to hold between the subject and the direct object. In the case of (68-69), an action is said to take place which results in a certain fixed physical configuration; again, there is no necessity for any physical configuration to hold between the subject and the direct object. Finally, in the case of (70-71), an action is said to take place which results in the referent of the direct object's having a certain orientation in space, and again there is no particular orientation that holds between the subject and the direct object. In other words, if we can define the domain of the to-dative alternation in terms of transferrance, we can exclude cases like (65-71).

Consider now whether such a characterization can

succeed. In section 2, we noted the fact that in order for this characterization to get off the ground, we had to allow for a hierarchy of possessive relations, which we did not attempt to justify. If we extend this sort of hierarchy to other sorts of relations as well, it is possible that our characterization will cover verbs like assign which (at least in some cases) do not deal with 'possession' but with responsibility, as in:

72) John assigned the task of cleaning the latrine to Arnold.

73) John assigned Arnold the task of cleaning the latrine.

A more difficult problem, it seems to me, concerns verbs which are associated with linguistic acts, such as tell (a joke), read, and so forth. Consider a sentence pair like the following:

74) John read the paragraph to Edward.

75) John read Edward the paragraph.

With a verb like hand, it is a relatively straightforward task to determine the various relations that hold of the subject, the direct object, and the indirect object. When the direct object denotes linguistic material, however, this becomes more difficult. Suppose that we could agree that sentences like (74-75) are true in cases where certain linguistic material is 'transferred' from John to Edward (or intended to be so transferred). Even if this were the case, it seems unlikely that this 'transfer'

could be characterized in such a way that our definition of the transferrance property would be satisfied, simply because it will be necessary to say John utters the linguistic material and Edward hears (or is intended to hear) it--or something of the sort--and these relations are neither identical nor subordinate.[56] Of course, we could extend the notion of transferrance to include this case, but this constitutes a further weakening of an already dangerously vague concept.

However this particular problem is to be dealt with, it should be clear that the 'transferrance property' that we have tried to define is not really a single concept but a collection of concepts, in spite of the fact that we have tried to minimize our reliance on the substantive aspects of the semantic relations employed in the characterization of the interpretation of various verbs. I think the same point will carry over to any attempt to provide a unified characterization of the domain of the to-dative alternation. Thus, again we are faced with the same problem that arose in trying to characterize the domain of the for-dative alternation: a syntactic definition of the domain in terms of the preposition to is too crude, in that it fails to exclude cases which one feels ought to be excluded in a principled way, whereas our attempt to characterize the domain in terms of certain properties of the sets of truth-conditions assigned to the various verbs fails to achieve the desired generality, and we are left with a set of distinct cases which in principle might have been some other set altogether. Now it may be the case that there simply is no uniform character-

ization of this domain. On the other hand, we might construe this result--if it is correct--as a simple demonstration of the failure of a semantic theory based on truth-conditions to come to terms properly with this range of linguistic data.

In any case, a purely semantic characterization of the domain of the to-dative alternation is unlikely to be forthcoming, for precisely the same reasons that semantic properties in general fail to provide sufficient conditions for the operation of the for-dative alternation: namely, the to-dative alternation seems to be subject to the same morphological constraint as the for-dative alternation. As the argument is precisely the same as in the case of the for-dative cases, I shall not repeat it here. Some examples of verbs which are correctly excluded by this constraint from the domain of the to-dative alternation are given below:

76) return
transfer
convey
deliver
reveal
explain
report
submit
restore
exhibit

In addition, there are a variety of morphologically complex

cases which might be excluded on other grounds (e.g. the typological distinction among communicative verbs mentioned above in section 6.2.1).

Both the transferrance property and the constraint on morphological complexity limit the domain of the to-dative alternation. It would be an illusion to think that even in combination they adequately specify it, however. Many cases remain which we have nothing to say about. For example, why does the verb lower undergo the dative alternation whereas the verbs raise and lift do not? Why does the verb get in the double object construction have a paraphrase in the for-dative construction but not in the to-construction, although it occurs with to as well? The theory outlined above does not treat such cases correctly, but this is a defect common to all theories of the dative alternation of which I am aware.

7.0 Summary.

In sections 1-6 we have been concerned with two related problems. One is to construct a semantic description of the dative constructions. The other is to investigate the role semantic considerations play in determining the domain of the dative alternation. In this section we summarize our results.

Note that it is trivial to write a grammar which generates the correct range of data. All that is required is that we subcategorize all verbs which undergo the alternation for the structure NP____$\left\{\begin{matrix}\text{for}\\\text{to}\end{matrix}\right\}$ NP NP; postulate a transformation (ordered before Heavy-NP Shift) which optionally deletes the preposition; if this rule does not apply, an obligatory transformation postposes the prepositional phrase to the right of the NP flanking it. But as there is no independent evidence for such a hypothesis, it is totally ad hoc and provides no insight into the problem of why some verbs occur in both the prepositional construction and the double object construction and why some verbs occur in only one of these structures.

Although I have spent a good deal of time discussing the domain of the dative alternations, I have not as yet formulated a rule to actually carry out the alternation. I will now remedy this defect. I will assume that the rule maps instances of the prepositional construction into the double object structure, for the simple reason that if the mapping is formulated in this way, we do not have the additional problem of specifying which preposition is called for.[57] Thus,

we write the rules as follows:

1) To-dative

SD: X-V-NP-to-NP-Y

1 2 3 4 5 6

SC: 1253Ø6

conditions: 1) Term 2 has the transferrance property

2) Term 2 does not have the morphological structure $[X]_{Prefix} = [Y]_{Stem}$

2) For-dative

SD: X-V-NP-for-NP-Y

1 2 3 4 5 6

SC: 1253Ø6

conditions: 1) The set of truth-conditions assigned to term 2 (in the structure NP_i___NP_k for NP_j) contain one of the following sets of statements:

a) at t_0, $R(NP_i, NP_k)$ & $I(NP_i, (R'(NP_j, NP_k)$ at $t'>t_0))$ where 'I(x,Y)' is the intention relation and 'R(x,y)' is an action and 'R'(x,y)' is a 'possessive' relation

OR

b) at t_0, $R(NP_i, NP_k)$ &
$I(NP_i, Ben(NP_j, R(NP_i, NP_k))$
where again 'R(x,y)' is an action, 'I(x,Y)' is the intention relation and 'Ben(x,Y)' symbolizes the benefactive interpretation accorded to certain <u>for</u>-phrases.

2) Term 2 does not have the morphological strucure $[X_{Prefix} = [Y]_{Stem}$

We leave several things open in this formulation: first, the derived structure--i.e. is the indirect object a daughter of NP or is it Chomsky-adjoined to V; second, we have not attempted to account here for the distinctions in truth-conditions noted in section 6; third, as stated the formulation of the <u>for</u>-dative rule will cover the benefactive cases discussed in section 6.1.2--if these cases are accorded a separate treatment as the pronominal and 'hortatory' constraints suggest, we can exclude them from the domain of the <u>for</u>-dative rule by restricting 'R(x,y)' in condition (1b) to actions involving artistic performance.

Consider now the distributional facts concerning the dative constructions. There are a variety of cases.

Case 1: sentences which occur only in the double object construction.

3) John envied Mary her talent.

4) The debacle cost McGovern the election.

5) The priest forgave him his sins.

6) Lipson's textbook taught Arnold Russian.

7) John gave Max a kick.

8) Craft brought Stravinsky a patron.

9) The examination gave Frank a headache.

All of these cases will be subcategorized for the double object construction, where they will remain untouched, as there is no rule which operates on this structure. One would of course like a principled explanation of why such sentences have no prepositional dative form. We note that in none of these cases is the transferrance criterion satisfied. One reason for this is that for the most part there is no relation needed between the subject and the direct object. If it could be shown that all simple sentences of the structure $X\text{-}NP_i\text{-}V\text{-}NP_i\text{-}\{\substack{to\\for}\}\text{-}NP_j\text{-}Y$ have the semantic property that there exists a relation $R(NP_i, NP_k)$, then we would have a principled reason to exclude such verbs (on the given interpretations) from the prepositional dative constructions. At the moment, however, such a conjecture faces problems that I am not able to pursue here.[58] The account we give of these sentences is descriptively adequate, and that is enough.

Case 2: sentences which occur only in the prepositional constructions.

A) 10) Reagan built a prison for his opponents. (on the reading in line with Reagan's

intention to incarcerate his opponents)

11) The collision sent the car to the other side of the gas station.

12) John attached a new significance to Kissinger.

13) John credited the success to Kissinger.

These sentences are properly excluded from the domain of the dative alternation because of their failure to satisfy the semantic conditions on the rules.

B) 14) John obtained a car for Mary.

15) John purchased a present for Mary.

16) John transferred the stock to Mary.

17) John conveyed the sandwich to Mary.

These sentences are properly excluded from the domain of the rules as formulated because of their failure to meet the morphological condition as stated, although they satisfy the various semantic conditions.

C) 18) John raised the bucket to Max.

19) John got the message to Mary.

20) John carried the bucket (over) to Mary.

21) John floated the canoe (down) to Mary.

22) John turned the gun over to the police.

23) Mary trapped a wolf for Frank.

Most of these cases will have to be treated as ad hoc exceptions to the rules as formulated. One might claim that in a sentence like (20) the to-phrase does not have a 'dative' interpretation,

but simply a locative one, or that verbs like float are characteristically used of situations in which the subject's action is not 'normally sufficient' to bring about the desired relation between the indirect object and the direct object. But such minor adjustments do not affect the point that many counterexamples to the semantic characterization of the domain that we have arrived at remain.

Case 3: prepositional sentences for which there is a reflex in the double object construction.

24) John gave a book to Mary.

25) John bought a book for Mary.

26) John kicked the ball to me.

27) John played a tune for Mary.

28) Mary mailed the letter to Frank.

For the central cases of the dative alternation, the characterization we have given of the domain of hte rule seems adequate, i.e., our characterization--though too broad to handle all cases (cf. 18-23)--does not seem to exclude any of the central cases of the alternation.

Certain marginal cases remain, however. Consider the possibility of dative pairs like the following:

29) They denied us admission.

30) ?They denied admission to us.

31) They denied me my chance.

32) *They denied my chance to me.

33) The act earned Mary a lot of money.

34) ?The act earned a lot of money for Mary.

These verbs evidently do not have the transferrance property. On the theory outlined here, they have to be treated idiosyncratically. Perhaps future research can clarify the relation of these cases to the more familiar cases of the dative alternation that we have concentrated on.

The major result of this section has been to isolate some of the semantic properties of the verbs that occur only in the double object construction, properties that in general are not shared by either of the prepositional dative constructions. This distinction in semantic properties strongly suggests that these verbs are generated in the base in the double object construction and not derived from either prepositional construction. Such a conclusion will play a role in some of the arguments to follow in later sections. Although we have not succeeded in adequately characterizing the domain of the dative alternations, we have tried to constrain it by playing both semantic and morphological limitations on the operation of the rule. Neither type of condition by itself will suffice.

FOOTNOTES

1. This ability is not without limits. There are difficulties involving vagueness, 'open texture', and literalness, among others. Cf. Austin (1963a, 1963b), for example, for discussion. In some cases, however, such problems can be kept to a minimum.

2. Cf. Quine (1953), Katz (1972) for further discussion.

3. In cases of ambiguity, more than one set of truth-conditions is assigned.

4. In some cases, a higher-order calculus might be more appropriate. Compare section 3, below. Such problems are external to our main interests here, however.

5. As pointed out above, cases of ambiguity will be dealt with by the assignment of multiple sets of truth-conditions.

6. This condition is necessary so that the reading of e.g. 'These men own these cars' in which each man owns one car will not be blocked. (Cf. Fiengo, 1973, for comments on this and similar problems.) On the notion 'scope component', cf. Kroch (1974).

7. The notion of 'uptake' on the part of the indirect object's referent should be extended to verbs of ownership in some cases at least, i.e., sell, which describes a contractual situation. In other cases--those involving gifts, for instance--it seems to be irrelevant.

8. In the interests of conciseness, I shall often use the expressions 'subject', 'direct object', and 'indirect object' to refer to the referents of the subject, direct object, indirect object (respectively) of the sentence under consideration. The context makes clear the way in which these expressions are used in any given case.

9. It is sometimes claimed that semantic representations take the form of trees. As Chomsky (1972) has pointed out, this would not be surprising, "given the enormous descriptive power of the [concept]." If the notion 'uptake' is important for this class of cases, then it would appear that a representation in the form of a tree would require at least that the tree contain a coordinate structure, since there are two actions and neither is within the scope of the other.

10. Note in this example that the for-phrase specifies a temporal limitation on the custody relation. Such modification also plays a role in the semantic interpretation of verbs like lend.

11. We discuss the verb offer in more detail below in section 5.4.,

12. Note that (13) does not satisfy the criteria we have established for 'O(x,y)' or 'C(x,y)': in both cases, the first term of the relation must be animate.

13. Higgins (1973, pp. 86-87) discusses a similar case, involving the construction 'What A did to B was...', noting that a

wide variety of material can replace the gap indicated, but just so long as there seems to be some 'intrinsic connection' between the object of to and the material that fills in the gap. I have borrowed the term 'intrinsic connection' from this source.

14. The fact that the truth-conditions contain no such statement does not, of course, imply that there could be no relation holding of the referent of the subject and the referent of the direct object: merely that any relation that does hold of these two individuals is irrelevant to the truth or falsity of the sentence at issue.

15. We shall see later that qualifications are needed in several ways here: first, as pointed out earlier, the notion of the tense-referent as a point in time is an idealization; second, further qualifications are needed that necessitate the incorporation of modal notions. See below, section 5.

16. There are a number of other distinctions between own and possess which have some intrinsic interest. One has to do with the fact that when possess has a direct object which refers to a physical object (rather than an abstract individual or social property), indefinites are far better-sounding than definites:

i) Does he still possess a ranch?

ii) ??Does he still possess the ranch?

Second, the behavior of temporal adverbials is distinct:

iii) *He's always possessed a ranch.

iv) He's always owned a ranch.

Finally, as I think Lakoff (1965) has pointed out, own undergoes the passive transformation, whereas possess does not. But the passive seems to apply to own only if its object is definite:

v) The ranch is owned by Nelson Rockeloafer.

vi) *A ranch is owned by Nelson Rockeloafer.

How does the relation between (ii) and (vi) bear on the contrast of passivizability of own and possess, if at all?

17. The verb bequeathe raises an interesting problem with respect to time. Does the tense refer to the time at which the subject makes a decision as to the disposition of his property posthumously, or to the time at which the property is finally disposed? If the sentence is uttered after the death of the subject, this question is difficult to determine. But if the sentence is uttered while the subject is still alive, I find a strong preference for the use of the aspectual auxiliary have. Compare:

vii) ?I bequeathed the piano to Marthe.

viii) I have bequeathed the piano to Marthe.

I don't know why this should be, but it strikes me as related to the way in which sportscasters announce football-passes or baseball-throws while the ball is in flight. In such circumstances, one would clearly say (ix), not (x):

ix) Unitas has thrown a beautiful pass downfield to Berry.

x) Unitas threw a beautiful pass downfield to Berry.

Perhaps this distinction has something to do with the fact that the role of the subject in the action is completed, while the action as a whole is not.

18. The problem is not only to give an account of the similarities between buy and sell but to deal with the differences which are to be found between them concerning such things as agency, their behavior in generic contexts, etc., as well.

19. Not that our approach is immune from criticism, particularly from those who have philosophical scruples about semantic concepts. Yet if we wish to develop a theory of semantic abilities, there is no real alternative.

20. The prepositional dative construction with respect to these verbs is considered in section 6 below.

21. One of the difficulties inherent in descriptive semantics is that we are able to formulate sharper questions concerning semantic data than we may be able to answer. For example, it might be desirable to specify, in the case of the verb hand, that there is a point at which both subject and indirect object simultaneously grasp the direct object. My intuitions concerning this vary to some extent according to the circumstances in which sentences involving hand are tested.

Another question that arises in this context is whether the particular conditions specified would follow from general characteristics of actions. If the variability concerning, say, the uptake on the part of the indirect object is actual, one might be inclined to think that the general theory of action would have to be quite rich in order to account for it. On the other hand, it is worth pointing out that there are many cases which seem to be most easily definable with respect to some result, although it may not in fact be necessary for that result to hold in order for the case at issue to be felt to be true. For example, we have claimed (cf. 33) that for the conditions associated with hand to be satisfied, a certain relation, 'H(x,y)', must hold of the indirect object and the direct object. Yet there are uses of hand which we might well take to be true, in spite of the fact that this condition is patently not satisfied:

x) I handed him the platter: it's not my fault that he didn't take it.

If the conditions that we have set down are correct, then a more general theory of the linguistic description of actions might well account for the deviation of such sentences from the stipulated conditions.

22. Thus, for throw, we write:

xi) NP_i throw NP_j NP_k

i) prior to t_0, $H(NP_i, NP_k)$

ii) at t_0, $I(NP_i, P(NP_j, NP_k)) \& A(NP_i, -H(NP_i, NP_k))$
$\& M(A(NP_i, -H(NP_i, NP_k)), P(NP_j, NP_k)$

Here, 'H(x,y)' is interpreted 'x holds y in the hand'; 'I(x,Y)' is interpreted 'x intends Y to be true at t' t_0. 'P(x,y)' is interpreted 'x has y within physical control'; 'A(x,Y)' is interpreted 'x acts with the result Y'; and 'M(X,Y)' is interpreted 'X normally suffices to bring about Y'.

23. In fact, we argue below that such a theory is necessary: cf. section 4.5.

24. For the most part, I will ignore here what can be termed verb-internal features relevant to manner or instrument, e.g. the distinction between toss and throw. In this particular case, the distinction seems to be a kind of gestalt difference based on the casualness with which the action is performed. As far as I have been able to determine, beyond the possibility of affecting the variation of the 'uptake' condition, differences in manner are simply irrelevant to the present inquiry.

25. See section 3.4.2 for some independent support for a lexical treatment of these derived nouns. On some difficulties for one formulation of a transformational treatment, cf. note 27 below.

26. By using the word 'permit' in the gloss of the relation 'E(x,Y)' we do not mean to restrict the interpretation to the deontic sense of permission only. In some cases, 'enable' might be an improvement. This interpretation of the role played by

the subject seems to be a fact with more general application than just the predicational noun cases. In fact, it may be correlated with the notion of agency applied to the indirect object in any relation between the indirect object and the direct object. Thus, roughly the same interpretation might be said to hold in the 'causal' interpretation of 'Nixon gave Mailer a book'. Since writing books is something which requires individual initiative, perhaps the interpretation of Nixon's role in Mailer's enterprise is limited.

27. One might suppose that sentences like 'John gave the table a kick' could be derived from 'John gave a kick at the table'. Yet the sentences are not equivalent: in particular, the first entails that the table was kicked, whereas the second does not.

28. Note that the relation 'P(x,y)'--interpreted as 'y is x's patron'--has two argument places. The first argument place is associated with the complement of the noun 'patron': in other words, with respect to a referring expression of the form 'the patron of Stravinsky', the first argument is associated with Stravinsky. The second argument place is associated with the referent of the expression, namely that person who is the patron of Stravinsky. Since the second argument place has no syntactic manifestation in expressions of the form 'patron of x', when we speak of specifying the argument or filling the argument--place of the relational expression, it is to be understood that we are referring to the first argument or argument-place.

29. Sentence (42) is actually ambiguous, due to the modality of would. One reading is roughly 'Having a patron would have helped Stravinsky'; the other is 'If Stravinsky had had a patron, that patron would have helped him'. It is the latter reading that is of interest to us.

30. Cf. Ross (1974).

31. The grammatical properties of relational expressions are not based strictly on what we take to be their logical properties. Cf. Sapir (1917), who notes that in languages that have a morphological marker for relational expressions, the use of the marker varies from one language to another, although there do seem to be implicational generalizations to be made, e.g. kinship terms are marked before other relational terms.

32. The sort of circumstance that I refer to here involves choosing sides for games, trading sports stars, and so forth. Thus, we find sentences like

i) The luck of the draft gave the Celtics Cowens.

Sentences like (51) and (52) do not easily adapt themselves to such an interpretation.

33. One transformational approach would postulate a rule of Having-deletion, thus deriving (54) from

ii) Having an illness hampered John.

But this raises difficulties in cases like:

iii) His illness hampered John.

*Having his illness hampered John.

iv) The old illness hampered John.

*Having the old illness hampered John.

34. There are difficulties in formulating a notation here, based on the uncertain status of the reference of expressions with an inalienable interpretation. Do such expressions denote properties? If so, does this fact throw any light on how best to provide a representation for them? I leave this question open.

35. The term 'inalienable' is not altogether appropriate. For instance, it seems to me that one can 'inalienably possess' a wooden leg. Cf. note 10 above.

36. Sentence (66) is an example from Cattell (1970).

37. It's still the case that on the interpretive approach, however, we might find it necessary to postulate various rules of interpretation which apply to the same underlying structure, thus generating more than one reading. One would prefer to have the grammar be such that for each underlying structure there would be only one reading.

38. By a strong sense of 'has the ability', I mean to distinguish here between capacity and capability. The sense involving 'capacity' can be illustrated by 'All human beings are able to swim', by asserting which one hardly commits oneself to the belief

that every person has in fact demonstrated his swimming ability. In a sentence like 'John is able to swim', it is unlikely that the speaker is trying to convey the information that John--like all humans--has the capacity to swim, but rather that John in fact swims or has swum. It is this latter interpretation which demonstrates what I mean by the strong sense.

39. The one exception to this is the rather special sense of teach from which the nominalization teachings is derived. This is also an exception to the claim that if teach has a [-animate] subject, the indirect object is required:

i) The Bible teaches that the meek shall inherit what's left.

40. A way to block such sentences is to derive such noun phrases as the way to Inman Square from indirect questions, as suggested by Baker (1968). Thus, the underlying structure for (8), for example, would be something like (10), and a transformation would remove the complementizer and the copula. Now although the fact that the indirect object is obligatory would then follow, it is difficult to write a transformation which would distinguish (10) from (12), and (13) shows that the transformation in question cannot apply to the structure underlying (12). What would apparently be necessary would be to identify certain NP's which allow the transformation to operate. Yet we have the alternative of simply generating NP's with this property as the direct object of teach (and know and other epistemic verbs). A principled way of

accounting for the positioning of the indirect object is still necessary.

41. Cf. Fodor (1970), Chomsky (1972).

42. I have no explanation that is sound for why (73a) sounds so bad. This is not a general fact about <u>have</u>:

ii) (As we all know) John has his problems.

I have a feeling that this difference is somewhat parallel to the use of definites and indefinites in existential sentences with <u>there</u>, but I don't see how the difference between (ii) and (73a) would follow from such a claim.

43. This property is apparently shared by noun phrases which seem to form a natural class with <u>accident</u>:

iii) John's stupidity caused him to have a mishap.
*John's stupidity gave him a mishap.

iv) Their common interests caused them to have a chance meeting.
*Their common interests gave them a chance meeting.

I do not know how to explain these facts, however.

44. In this table, we make two idealizations: 1) the tense-referent is always a point on the line; 2) the relation 'R' is never discontinuous. Both of these assumptions are probably false.

45. Williams (1974) points out that rob and steal differ in an interesting way. One can be robbed of inalienable properties, for example, although it is impossible to steal inalienable properties from anyone:

i) The defeat robbed John of his pride.

ii) *The defeat stole his pride from John.

Similarly, the subject of rob can be [- animate], as (i) illustrates, whereas the subject of steal must be [+ animate]. In both of these respects, rob is like the double object constructions discussed in section 3, whereas steal is like the cases discussed in section 2, which have corresponding forms with the prepositional dative. A more general treatment of these parallelisms is clearly called for.

46. We are not concerned here with the occurrences of lose in sentences like I lost the hand to Tom, who was holding a full house or The money was lost to me. In correspondence, Dwight Bolinger has pointed out to me the ambiguity of this last example: it is either the passive of a sentence of the first type, or analyzable as 'NP be ADJCOMP'.

47. It is occasionally suggested that the preposition with also be included. As there appears to be only one example of the alternation applying in such cases, i.e., play me a game of chess/play a game of chess with me, we exclude this marginal case from consideration.

48. See Faraci (1974) for a clear exposition of the variety of interpretations assigned to for-phrases.

49. I have represented 'x bake y' as the relation 'B(x,y)' only for expository purposes. The fact that the object represented as 'y' only comes into existence as a result of the action involved poses a severe problem for such an analysis, a problem that we shall not attempt to deal with here.

50. I know of no examples of a sentence of the form NP-V-for-NP where the for-phrase has a 'benefactive' interpretation which undergoes deletion of the preposition. Thus we have (i) but not (ii):

i) Laugh for me.
ii) *Laugh me.

There are further constraints on the appearance of a benefactive indirect object which I have no idea how to even describe. For example, (iii) seems clearly impossible, although we have (iv).

iii) *Stamp me your foot again.
iv) Stamp your foot again for me.

51. Thus, although (v) seems alright, I find (vi) virtually impossible (with accentual prominence as indicated):

v) After Playing the audience a series of hard-bop tunes, Thelonius played a few traditional pieces for the critics.

vi)??After playing the audience a series of hard-bop tunes, Thelonius played the critics a few traditional pieces.

This is somewhat surprising, as the double object construction does not in general bar the indirect object from having accentual prominence. Compare (vii):

vii) You want to know what I bought for whom? Is that it? Well, I bought Mary a new hat and I bought Alberg a bowtie. Is that alright?

52. Is is worthwhile at this point to say something about the members of Green's fourth class. I will take earn to be typical of this class. Consider the sentences below:

viii) John earned a lot of money for Mary.

ix) John earned Mary a lot of money.

The interpretation of (ix) is roughly: Mary got a lot of money because of John. Sentence (viii) has this interpretation, it seems, but it has another interpretation as well: namely, John earned a lot of money which he intends for Mary. The surprising thing about this is that it is the latter interpretation which conforms to our characterization of the domain of the alternation, and not the former, which is actually the one preserved in the alternation. Thus we actually have two problems: one is to exclude earn on the latter interpretation from the domain of the alternation; the other is to generate (viii) on both interpreta-

tions. A possible way to deal with the latter problem is to take the double object structure as basic, and write a rule which converts it to the prepositional for-construction. Such a rule would require careful formulation, however, for it would be necessary to distinguish cases like (ix) from a large variety of other sentences occurring in the double object structure, including sentences whose verb is earn:

x) Success earned a man I know many friends.

xi) ?*Success earned many friends for a man I know.

Even if it is possible to write such a rule, this approach leaves the first problem untouched. I have no better account of these facts, however.

53. These sentences are from Cattell.

54. One might be tempted to claim that tell requires that the communicative act be successful, but this would be too strong. Sentences like the following would then be ruled out:

xii) I told Sam that it was raining, but I guess he didn't hear me.

Rather, I think that what we want to say is that in using the verb tell to report a communicative situation, the speaker claims that what the subject did was sufficient under normal circumstances to assure the success of the communicative act.

55. In fact, along with give, teach, bring, and show, discussed

earlier, there are many verbs which develop senses in which they are restricted to the double object structure. As far as I can tell, however, these extensions always fall roughly into the class of interpretations discussed in section 3. Examples of this are:

xiii) Running the traffic light got John a speeding ticket.

xiv) *Running the traffic light got a speeding ticket for John.

xv) The game offered the team the possibility of a championship.

xvi) *The game offered the possibility of a championship to the team.

A reliable indication of this shift in interpretation is the ability of these verbs to take a non-animate subject.

56. In the case of possession, the notion of subordination has an intuitive appeal, in that ownership of an object seems to give one more rights over its disposition than does mere custody. The existence of chains of responsibility renders the extension of subordination to these cases not totally implausible. Even these cases make one somewhat uncomfortable, however. But I see no intuitive way in which to extend this notion to speaking and hearing. Rather, it seems as if we are dealing here with two sides of the same linguistic coin.

57. The problem is non-trivial, since for many of the <u>to</u>-dative cases the role of the intention relation in the set of truth-

conditions will be indistinguishable from the _for_-dative cases.

58. For instance, consider a sentence like (i):

i) John showed the picture to Mary.

Sentence (i) does not meet the transferrance criterion, since evidently the sentence can be true if John merely ushers Mary into a room in which the picture is hanging: thus, there is no relation between John and the picture. If our arguments concerning the necessity of an independent double object subcategorization for _show_ in section 4.3 are correct, however, the fact that _show_ apparently does not meet the transferrance criterion does not affect our analysis in a serious way. It is a problem for the conjecture stated in the text that the verbs of Case 1 do not occur in the prepositional construction because they fail to meet the transferrance criterion.

II. Syntactic Aspects of the Dative Constructions

a. Introduction

In Part One, certain semantic aspects of the dative constructions have been discussed, and we have suggested formulations of the dative alternations which account for certain aspects of the domains in question. The question now arises as to the status of the dative alternations in a grammar of contemporary English. Are they transformational rules which map phrase-markers onto phrase-markers, or are they rules of lexical redundancy? Solid support for the transformational alternative would exist if it could be shown that the postulation of a dative transformation provided some insight into some of the syntactic idiosyncrasies of the dative constructions. As an illustration of this type of argument, consider the interaction of the there-insertion transformation and the passive transformation: there-insertion applies to the output of the passive, which in turn operates on the output of there-insertion. If a similar interaction with transformational rules could be found, it would support a transformational account of the dative alternation.

In the sections that follow we shall not deal with all the problems that arise in giving a complete description of the syntax of the dative constructions.[1] The reason for this is that if no standard account of the problem exists,

and it seems unlikely that a transformational account of the dative alternations will provide insight into the problem, then solutions to these problems--although of interest--do not bear on the choice between alternatives that we are considering. Rather, we will concentrate on cases for which there is some initial plausibility to the value of a transformational account. The cases we have chosen involve pronominal restrictions on the second object in the double object construction, the interaction of the passive and the dative constructions, the interaction of the dative constructions with particles, and movement constraints on the double object construction. For each of these cases, we shall argue that a transformational account of the dative alternation provides no insight into the syntactic problem at issue. Since for the most part we take up each question in isolation, Part Two has a certain fragmentary character. But it is important to decide each case on its own merits, and the conclusion that we arrive at plays an important role in Part Three, where we take up the status of the dative alternation in more detail.

1. Pronominal Restrictions on the Double Object Construction.

1.0 It has often been noted that double-object constructions in which the second object is an unstressed definite pronoun are ungrammatical. Thus, contrast (1) and (2):

1) John sent it to Arnold.
2) *John sent Arnold it.

In this section, we will consider two ways in which to account for the deviance of (2): one based on a transformational account of the dative alternation; one based on an output filter. I will argue that the output filter is superior to the transformational account in several respects.

1.1 Pronominal instances of the second object.

Under certain conditions, the second object may be pronominal. Note first of all that if a pronominal second object bears stress, a situation compatible with a contrastive, emphatic, or deictic interpretation, sentences like (3) are much improved. It is necessary to change the pronoun in question, however, since <u>it</u> is incapable of bearing stress.

3) I know you had to send her something, but why did you send Mary them?

Second, what happens in a case in which both NP's are pronouns? In my speech there is a hierarchy of acceptability based on two parameters: greater reduction of the first

pronoun increases acceptability; greater prominence of the second pronoun increases acceptability.

In (4) below, I have constructed a table based on four distinct phonetic realizations of the pronoun them: ðém, ðem, ðm̩, ʌm.

4)

gɪv ʌm ðém	gɪv ðm̩ ðém
? gɪv ʌm ðem	? gɪv ðm̩ ðem
?* gɪv ʌm ðm̩	* gɪv ðm̩ ðm̩
** gɪv ʌm ðm	** gɪv ðm̩ ʌm
gɪv ðem ðém	gɪv ðém ðém
? gɪv ðem ðem	?* gɪv ðém ðem
** gɪv ðem ðm̩	?* gɪv ðém ðm̩
** gɪv ðem ʌm	** gɪv ðém ʌm

Ranking all of these combinations in a precise way is a task for which I have neither the talent nor the patience. Nevertheless, I think the point is clear: the crucial aspect of this problem has to do with the relative prominence of the pronouns involved. Furthermore, as it happens, pronouns differ from one another with respect to factors like reduceability, the ease with which they cliticize to the verb, and so forth. Compare the following cases, for example:

5) Gimme it (back)!
6a) *He didn't give you it, did he.
b) ?*He didn't give ya it, did he.

Note as well, that when the pronoun is indefinite, violations comparable to (2) do not exist:

7) The reason you didn't get one was that I never sent you one.
8) I sent Arnold one as well.

With respect to full NP's, there seem to be no restrictions at all:

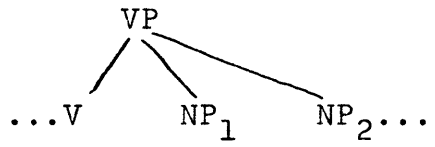
9) I sent John the package.
10) I sent John a package.
11) I handed a man a leaflet.
12) I handed an usher the ticket.

1.2 Two accounts of the pronominal restriction.

1.2.1 A surface filter

We may describe the above array of facts in terms of a surface filter stated as follows:

13) The following surface structure is ungrammatical if NP_1 is higher on the scale of prominence than NP_2.



'Prominence' is defined with respect to the following hierarchy: a lower number reflects lower prominence.

1. cliticized pronouns
2. me, it
3. us, you
4. other third person pronouns
5. everything else.

Such a filter or output condition is a descriptive device. It is possible that future insights into the English intonational system may allow us to dispense with it.

1.2.2 A transformational account.

If the data presented in section 2 are correct, it is incorrect to include in the specification of the structural description of the dative movement transformation, as is sometimes done, a requirement to the effect that the direct object must be non-pronominal. Furthermore, assuming that our hierarchy of prominence is in fact correct, it is not clear that the sort of conditional dependency which this hierarchy reflects can be formulated in any simple way in terms of conditions on analyzability. Ignoring such details, however, and assuming for the sake of exposition that a transformational account takes the prepositional dative form as basic, we may formulate the transformational rule as follows:

14) X-V-NP-$\begin{Bmatrix} \text{to} \\ \text{for} \end{Bmatrix}$-NP-Y

1 2 3 4 5 6 --- 1-2-5-3-Ø-6

condition: term 5 is not higher on the hierarchy of prominence than term 3.

1.3 A comparison.

In the cases so far discussed, the transformational account and the output condition are equivalent. Yet there

are two ways in which the different theories have different consequences. First, on the transformational account, any application of rule (14) is subject to the stated condition. Therefore, no derivation may include an application of (14) which violates this condition. On the output-condition theory, such applications are allowed just so long as the derivation in which they occur does not result in a structure which violates the output condition stated in (13). Second, on the transformational account, the deviance of sentences like (2) is incurred as a result of the misapplication of (14). Thus, if the structure ruled out by the output condition (13) should be generated independently of the application of (14), the output condition (13) will rule it out, whereas the transformational account based on (14) will take no stand on the grammatical status of such a structure. On both these counts, the theory based on the output condition is superior.

1.3.1 The Passive

We may determine the status of the first difference between the two accounts by considering the passive transformation. Given standard formulations of the passive transformation, it is obvious that the dative transformation (14) --or at least that branch of it which contains <u>to</u> in the fourth term--may only apply before the passive: otherwise its structural description will not be met. Furthermore, this

ordering, as is well-known, is necessary in order to generate sentences such as

15) John was offered the job.

Now, if the condition on rule (14) is correct, the subject of passives like (15) should never be higher on the hierarchy of prominence than the direct object (in (15), the job). The output condition (13) is irrelevant to the grammatical status of such sentences, since it is applicable only to different surface structures.

In this case, the transformational account is clearly falsified. Consider cases like the following:

16) --Did John take the job?
--John was never offered it: how could he take it?

17) --What did the judges think of Harry's etchings?
--I don't know; for some reason, the judges were never shown them.

1.3.2 Although the above argument provides sufficient justification to adopt the account based on (13) over the account based on (14), there is a more general reason to do so as well: this is because (13) offers an account of a broader range of facts than does (14). As I argued in Part One, there are numerous instances of double object constructions which do not plausibly undergo rule (14) or something like it in the course of their derivation. Yet the condition on prominence formulated in (13) holds for these cases as well.

An account of the deviance of these sentences based on rule (14) is impossible in these cases, since the application (or misapplication) of rule (14) is simply irrelevant to their generation. A few examples:

18) Max sure has an ugly scar. { Where did he get it? / *What gave him it? / *What gave it to him?
19) As for John's talents, I envy them.
20) *As for John's talents, I envy him them.
21) As far as his fortune is concerned, he earned it.
22) *As far as his fortune is concerned, his diligence earned him it.

In short, the output condition offers a more general statement of these facts than is possible on an account based on (14).

1.4 Summary

In this chapter, I have attempted to formulate more precisely the conditions under which a pronominal direct object affects the grammatical status of double object constructions. Furthermore, I have tried to show that the appropriate way in which to account for the deviance of sentences like (2) is by means of an output condition. As I mentioned in section 1.1, it is to be hoped that the particular features of this output condition will follow from more general considerations on the properties of English intonation. One indication of this is that verb-particle constructions manifest similar restrictions.

Regardless of whether the output condition (13) follows from a more sweeping theory of English intonation, however, if the arguments presented above are valid, then it is clear that the constraints on pronominal occurrence offer no support whatsoever to a transformational theory of the dative alternation.

2. On the application of the passive transformation to the double object construction.

2.0 In his classic treatment of the dative constructions, Fillmore (1965) noted two peculiarities concerning the interaction of the passive transformation and the double object construction. One concerns the fact that some double object constructions related to 'to-datives' have two passives; the other concerns the fact that double object constructions related to 'for-datives' do not normally undergo the passive at all. In this chapter, I shall present a theory which accounts for certain hitherto unnoticed properties of the second passive in double object constructions related to to-datives. And although I have no completely satisfactory account of the failure of the passive in the double object construction related to 'for-datives', I shall call into question the appropriateness of treating this problem on the basis of rule-ordering, as Fillmore suggests.

2.1 The problem of two passives.

Fillmore noted the existence of the following paradigm:

1) He gave a book to me.
2) He gave me a book.
3) A book was given to me.
4) I was given a book.
5) A book was given me.

The existence of sentences like (5)--which I refer to as the

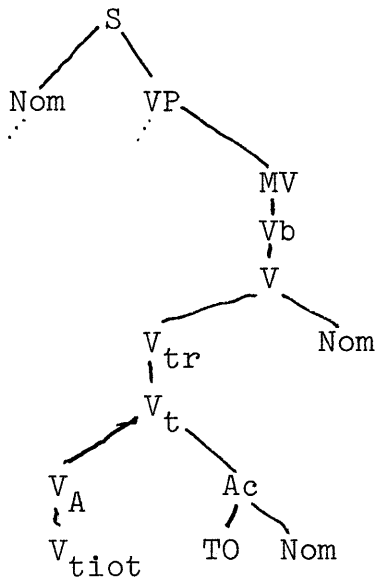
'second passive'--is somewhat problematic. Are we to extend the passive in some way so as to derive (5) directly by the passive's application to the structure underlying (2)? Or is it possible to maintain the form of the passive rule intact, perhaps by adding a rule deleting to, as suggested in Jackendoff and Culicover (1971)? Another alternative would be to monkey around with rule ordering and allow the passive to apply after the to-dative rule in some derivations (yielding (4)), and in other derivations allowing the passive to apply first and fixing up the dative rule somehow so as to derive (5).

Fillmore's account of all this is as follows: his grammar contains the base rules:

6) $V \rightarrow V_{tr}$ Nom (Man)
$V_{tr} \rightarrow V_t$
$V_t \rightarrow V_A$ Ac
$V_A \rightarrow V_{tiot}$
V_{tiot} Ac $\rightarrow V_{tiot}$ TO Nom

These rules generate trees like his (70), the relevant details of which I reproduce below:

7)



To generate sentences like (2), Fillmore postulates a rule deleting 'TO'. If this rule does not apply, the constituent 'AC' is postposed to the right of 'Nom', generating (1). The passive is formulated:

8) SD: $\text{Nom-(Prev)Aux-}\left\{\begin{matrix} V_{tr} \\ V_{tiot} \end{matrix}\right\}\text{-Nom'-Y}$

1 2 3 4 5

SC: 4-2-BE-EN-3-5-(BY-1)

In other words, phrase-markers like (7) which have undergone the rule of TO-deletion satisfy the structural description of (8) in two different ways, thus generating two kinds of psssives. Although Fillmore's account is adequate to describe the paradigm presented in(1-5), there are considerations

concerning the second passive which he failed to address. We shall propose an alternative account, which, however, is similar in spirit to the one Fillmore presents.

2.1.1 The most striking aspect of the sentences which exhibit the second passive is that in virtually all the examples I have encountered, the indirect object is a pronoun. For example, of the numerous citations offered by Jespersen (III.15.2_2; III.15.5), only one--from the fifteenth-century writer Malory--contains a non-pronominal indirect object. Nor have I found such examples among the extensive data cited by Poutsma. Similarly, I have encountered examples of this construction among Mark Twain's letters, on the Op-Ed page of the New York Times in recent months, and on the CBS Evening News: in every case the indirect object is a pronoun.[2] Compare the following examples:

9) No explanation was given them.
10) The job was offered him.
11) Fake documents were given him.
12) *Who were fake documents given?
13) *Who was the job offered?
14) *The job wasn't offered Max, it was offered Harry.
15) *The tuba was given John Phillips Sousa.

I will offer two ways of treating this phenomenon without choosing between them. In the first, we postulate a cliticization or restructuring rule which optionally incorporates the first of two noun phrases to the right of the verb (if it is a definite pronoun) in such a way as to make a single

constituent of the verb and pronoun. This rule is written:

16) Cliticization:

SD: $X\text{-}V\text{-}\begin{bmatrix} NP \\ +pro \\ +def \end{bmatrix}\text{-}\ NP\ \text{-}\ Y$

1 2 3 4 5

SC: 1-2+3-4-5

Assuming that the passive transformation preposes the first NP following V, if (16) applies, then the passive rule will generate sentences like (5) automatically, since the verb and the pronominal first object will be analyzed together as V.

An alternative analysis assimilates the second passive to the pseudo-passive, which allows a preposition to intervene between the verb and the noun phrase preposed by the passive transformation. On this formulation, the passive is written as follows (ignoring details irrelevant to our purpose):

17) Passive:

SD: $X\text{-}NP\text{-}V\text{-}\left\{ \begin{matrix} P \\ \begin{bmatrix} NP \\ +pro \\ +def \end{bmatrix} \end{matrix} \right\}\text{-}NP\text{-}Y$

1 2 3 4 5 6

SC: 1-5-BE+EN-3-4-6-BY+2

A question that arises with this formulation, however, concerns the fact that under the usual conventions--in which the parenthesized material is obligatorily included in the analysis of the phrase marker if possible--the passive could never apply to a pronominal first object: obviously a bad result in view of sentences like (4). If this is correct, the analysis based on the cliticization rule (16) is to be preferred.

Ignoring this problem, however, we may see that either analysis is superior to several possible alternatives. It is difficult to see how the pronominal restriction could be incorporated into the passive rule as Fillmore has formulated it. Furthermore, both of the formulations presented above differ from accounts which, like that of Jackendoff and Culicover, are based on a rule of to-deletion applying after the passive. A consequence of either of our formulations is that the second passive applies only to cases which occur in the double object construction. Accounts based on to-deletion fail to express this dependency and are consistent with the existence of paradigms which would parallel that given below with the exception that the sentence corresponding to (20) would be grammatical:

18) Karl reported the news to me.
19) *Karl reported me the news.
20) (*)The news was reported me.

No such paradigms exist, however, and it is a point in

favor of the analyses we have suggested that they are both inconsistent with this possibility.

Furthermore, we expect to find sentences like:

21) My sins were forgiven me.

Although judgments here are not notable for their reliability, I believe that (21) is easily possible, whereas (20) is quite impossible. The point is that there is no evidence to suggest that (21) should be derived from either of the sentences in (22):

22) *NP forgave my sins to me.
NP for gave my sins for me.

If this is correct, it provides further evidence for the superiority of either one of our formulations over a rule of to-deletion.

2.1.2 A digression.

If this account of the second passive is correct, it might be of interest to consider how it developed during the course of the history of English. Although I have not been able to undertake this task with any thoroughness, the examples cited by Jespersen suggest the following conjecture.

At the initial stage at which we are interested, the English passive was defined over the case system, the accusative becoming the derived subject. There was also a

rule fronting the dative to the initial position. (An alternative here would be to consider the fronting process a single rule, operating on both cases; the distinction between the two cases would lie in the fact that only the accusative became nominative and triggered subject-verb agreement.) This system is essentially the same as the present German system.

Gradually, however, the passive was restructured so that it applied only to the first NP following the verb. This restructuring was probably intimately tied up with the loss of case-marking. It is well-known that the pronominal system was (and is) the last bastion of case distinction in English. Therefore, we might expect that the pronominal dative might be the final holdout in the struggle between the case-defined passive and the order-defined passive. In the transition from the one to the other, the addition of the cliticization rule (16) or the modification of the passive transformation suggested in (17) would facilitate things by keeping the data base more or less homogeneous.

2.2 The interaction of the passive and '<u>for</u>-datives'

Fillmore also noticed the difference reflected in the following paradigms:

23 a) Nelson gave a ranch to Max.
b) A ranch was given to Max by Nelson.
c) Nelson gave Max a ranch.
d) Max was given a ranch by Nelson.

24 a) Nelson bought a ranch for Max.
b) A ranch was bought for Max by Nelson.
c) Nelson bought Max a ranch.
d)?* Max was bought a ranch by Nelson.

He proposed to account for this difference by ordering the rule of for-dative movement, a necessary preliminary to the generation of (24d) after the passive transformation, thus blocking the generation of (24d). This proposal has also the advantage of blocking what we called above the second passive from applying in the case in which the first object is related to sentences with for-datives, and in fact there appear to be no sentences of this type. Yet there are grounds for wondering whether ordering is in fact the correct way of handling this problem.

2.2.1 First, there are sentences which involve the application of the passive to cases which would be derived from for-datives in such a system which are better than we would expect on such an account.

25) ?I don't see how you can be gotten any more money than we've already found for you.
26) ?After a great deal of trouble on the part of the organizers, John was finally found a place to stay in a fraternity house several blocks away from the building in which the meetings were to be held.
27) ?Hearst had himself built a fantastic and opulent mansion along the coast to the north of Los Angeles.

Such sentences are stylistically complex, to be sure, and in ways which probably favor the order of constituents which

the application of the passive produces. But such sentences do not exhibit the striking ungrammaticality which is involved in cases of ordering violations where the ordering of two rules is known to be essential, e.g. the ordering of passive and subject-verb agr-ement, for example:

28) The police were arresting me.
29) *I were being arrested by the police.

It would be rash to claim any sort of special intuition as to the kind of ungrammaticality which is produced by different sorts of violations of the structure of the grammar. Nevertheless, we note the possibility that ordering arrangements which are necessary for the production of certain grammatical sentences have a different theoretical status than ordering arrangements which are postulated to block the generation of certain ungrammatical sentences. The justification for this distinction is that in the one case, the postulated ordering is essential, whereas in the latter case, there are other means available to block ungrammatical cases.

2.2.2 Acquisition of ordering

Let us assume that Fillmore's ordering is correct. It follows that those who know the language will not produce sentences like (24). Further, let us assume that a child is presented with data similar to (23-d) and (24-c), but nothing corresponding to (24-d). And let us suppose that the child never utters a sentence like (24-d)--or, if so, that the

lapse goes uncorrected. Now, given this situation, how can Fillmore's system account for the fact that children become adults who reject sentences like (24-d), even when they hear such sentences for the first time (as often happens in introductory syntax classes, one may suppose). Or, to put it another way, on what basis will the child assign the proper ordering to the for-dative rule? We must assume that the child has a principled way of assigning the correct ordering to these two rules in the absence of data which bears on the problem--in this case it might be something like "assume bleeding order unless presented with evidence to the contrary". However, if the ordering principles suggested in Williams (1974) are correct--they basically extend the cyclic principle to phrase nodes beneath the sentence level--, then such a principle is incorrect, and in fact, the ordering suggested by Fillmore would be impossible.

2.2.3 Williams (1974) has pointed out that there exist cases in which indirect objects related to to-phrases fail to undergo the passive transformation.[3] Some cases of this are:

30) John slipped a $5 bill to the usher.
John slipped the usher a $5 bill.
?*The usher was slipped a $5 bill.

31) If I shove the salt to you, will you stop crying?
If I shove you the salt, will you stop crying?
?*If you're shoved the salt, will you stop crying?
(cf. If you're passed the salt, will you stop crying?

Although such examples do not directly falsify Fillmore's ordering hypothesis, taken together with the examples in 3.1, they do cast doubt on the claim implicit in Fillmore's analysis that there is a strong distinction in kind to be made between the passivizability of the double object constructions related to to-datives and those related to for-datives.

2.2.4 In fact, the examples cited directly above are related to a larger problem. It is known that there are exceptions to the passive transformation for which there can be no solution based on the ordering of transformations. Jackendoff (1972) has pointed out cases for which Gruber's system of thematic relations provides a promising analysis. For example, in some cases (but not all), the notion of agency is apparently relevant:

32) The police neared the house (*carefully).
33) The police approached the house (carefully).
34) *Let's near the house.
35) Let's approach the house.
36) *The house was neared by the police.
37) The house was approached by the police.

In terms of thematic relations, the subject of the verb near is Theme, its object is Goal. As the absence of manner adverbials and the non-occurrence of near beneath the hortatory let's indicate, the subject of near cannot be interpreted agentively. Approach differs from near in this regard. Approach is like near in that its subject is Theme, its object

Goal. But if the tests given are a reliable indication, it allows an agentive interpretation of its subject. This difference correlates with the passivizability of approach and the non-passivizability of near. Note in particular that when the subject of approach cannot be interpreted agentively (i.e. when it is inanimate), it too refuses to passivize:

38) The tornado approached the town.
39) *The town was approached by the tornado.

It is with respect to examples like this one that the Thematic Hierarchy Condition proposed by Jackendoff is of interest.

Suppose we modify Jackendoff's hierarchy in the following way. We set up a new Thematic Relation called (following Williams) Intentional Goal, and place this Thematic Relation at the very top of Jackendoff's thematic hierarchy. Assuming the validity of Jackendoff's framework, this further assumption would block the passive from applying to cases in which the left-most NP is related to for-datives. In fact, there is some indication that this speculation is not altogether ad hoc. The Thematic Relation 'Intentional Goal' would subsume more cases than simply the for-datives, for instance various motional cases. Thus, the (pseudo-) passive in the following cases would be blocked correctly.

40) The group headed for Los Angeles
41) *Los Angeles was headed for by the group.

42) John reached for the money.
43) *The money was reached for by John.

Whether or not an account of the difficulty of passivizing indirect objects related to for-datives based on Jackendoff's Thematic Hierarchy can be given adequate justification, it is not implausible to suppose that a more adequate account of the passive transformation in general might include the lack of passive subjects related to for-datives as a special case.

2.2.5 Summary.

Although we have not succeeded in formulating a satisfactory account of the relation between indirect objects with a for-dative interpretation and the passive transformation, I have tried to present several arguments to show that a skeptical attitude toward Fillmore's ordering hypothesis is clearly warranted. We have tentatively suggested an alternative to Fillmore's theory based on Jackendoff's thematic hierarchy condition. Other promising lines of research also exist which are consistent with the position that the ungrammaticality of (2d) is not due to the violation of two extrinsically ordered rules (e.g. Fiengo's (1974) notion of 'property-interpretation'). Given this state of affairs, we may conclude that the evidence which Fillmore's ordering hypothesis provides for a transformational account of the dative alternation is far from overwhelming.

3. An analysis of particles and their interaction with the dative constructions.

3.0 Emonds (1971)has proposed an account of the interaction of the dative constructions and particle movement which, if correct, would be a strong argument for a transformational account of the dative constructions, since no simple alternative treatment seems to be available. Emonds argues further that his account of the dative alternation lends support to his "structure-preserving" hypothesis, since, as he puts it, "for reasons which have nothing to do with what I call the "structure-preserving constraint on transformations", we are led to formulate the indirect object movement rule or rules as structure-preserving." Implicit in this statement is the claim that the structure-preserving hypothesis is of explanatory value, since it forces the grammarian/language-learner to choose automatically the most highly-valued analysis. On the other hand, Emond's conclusion has an unfortunate consequence: if his statement of the rules is the most highly-valued, then it is necessary to add permutations to the set of transformational operations--an increase in the power of transformations.

In spite of the attractiveness of Emonds's solution, I do not think that it can be right. I shall first sketch the fundamental points of Emonds's account. I shall then criticize it and propose an alternative account.

3.1 Emonds's account.

The grammar that Emonds proposes has the following base rules and transformations:

1) PP -→ P (NP)

2) VP -→ V (NP) (PP) (PP)...

3) Particle Movement:

$$X+V-\left[\begin{matrix}NP\\-pro\end{matrix}\right]-[P]_{PP}-Y$$

1 2 3 4 --→ 1-3-2-4, where 1234 is a VP

4) Dative Movement

$$X+V-\left[\begin{matrix}NP\\-pro\end{matrix}\right]-(P)-_{PP}[\left\{\begin{matrix}to\\for\end{matrix}\right\}-NP]-Y$$

1 2 3 4 5 6 --→ 1-5-3-Ø-2-6

In other words, in this grammar, particles are analyzed as intransitive prepositions, the base position for particles is to the right of the direct object, particle movement is stated as a transformation which moves the particle from right to left, and dative movement is a transformation which permutes the direct object and the NP complement of to or for around an optional intervening preposition, erasing the preposition to or for in the process.

The argument that particles are in fact intransitive instances of prepositions is based on a variety of evidence:

5) i) lexical overlap
ii) simplification of subcategorization with respect to verbs which take directional complements
iii) the distribution of the word right
iv) simplification of the statement of the formation of a certain "expletive construction"
v) simplification of the statement of the rule of directional adverb preposing.

With respect to the prepositional dative construction, Emonds claims that the particle can appear freely in either the post-verbal or the post-object position:

6) V-NP-P-PP: The treasurer sent the schedules out to the members.
7) V-P-NP-PP: The treasurer sent out the schedules to the members.

With respect to the double object construction, Emonds claims that there are three dialects:

8) Dialect A: V-NP-P-NP
V-P-NP-NP
*V-NP-NP-P

Dialect B: V-NP-P-NP
?*V-P-NP-NP
*V-NP-NP-P

Dialect C: like Dialect A with respect to to-datives; like Dialect B with respect to for-datives

In Dialect A, dative movement is ordered before particle movement. This generates the appropriate range of structures:

9) V-NP-P-$\begin{matrix}\text{to}\\\text{for}\end{matrix}$-NP (neither rule applies
V-NP-P-NP (dative movement only)
V-P-NP-$\begin{matrix}\text{to}\\\text{for}\end{matrix}$-NP (particle movement only)

V-P-NP-NP (dative movement, then particle movement)

In Dialect B, particle movement is ordered before dative movement. Since the application of particle movement destroys the structural description of dative movement, there can be no derivation in which both rules apply.

10) N-NP-P-$\begin{matrix}to\\for\end{matrix}$-NP (neither rule applies)

V-P-NP-$\begin{matrix}to\\for\end{matrix}$-NP (particle movement applies; the structural description of dative movement is not met)

V-NP-P-NP (particle movement has not applied; dative movement has applied)

Finally, for Dialect C, the order of rules is taken to be: first, to-dative movement; then particle movement; and finally for-dative movement. This order yields the results Emonds desires.

3.2 Critique of Emonds's account

We note first of all that it is of fundamental importance to Emonds's account that there be only one base position for particles (especially with respect to the dative constructions). The reason for this is that if there is more than one base position, then there is likely to be more than one rule which affects particles; and since Emonds's arguments for formulating dative movement as a permutation transformation are based primarily on the fact that, given his assumptions about dialects, alternative formulations

introduce ad hoc complications. But as we will show, Emonds's account already contains rather ad hoc complications, at least some of which can be avoided.

3.2.1 Consider the sentences

11 a) Give that book back to me.
b) *Give that book to me back.

12 a) Give that book right back to me.
b) *Give that book to me right back.

13 a) Give me back that book.
b) Give me that book back.

14 a) *Give me right back that book.
b) Give me that book right back.

On Emonds's assumptions, the underlying structure of the sentences in (13) must be the structure underlying (11a); similarly, the underlying structure of (14b) must be the structure underlying (12a). Emonds notes the existence of double-object constructions in which the particle occurs finally, but he dismisses them as "unsystematic and quite limited in number", and his grammar does not generate such constructions. In order to generate (13b), we might add to his grammar a rule which shifts the particle (in some cases) to the right. But in order to generate (14b) we must incorporate more radical changes, for the presence of right in the underlying structure of (14b)--compare (12a)--has the effect that the structural description of his dative movement rule is not satisfied. This may be accomplished by allowing

the dative permutation rule to operate around more than a single particle.[4] Note, however, that the rule apparently may not operate if the only intervening material is the word right.

15 a) John tossed the ball right to me.
b) *John tossed me right the ball.
c) *John tossed me the ball right.

Moreover, we must either make the right-left particle movement rule obligatory when we have the combination right+particle or add a surface condition to govern the distribution of right.[5] In short, Emonds's account as it stands needs considerable ad hoc patchwork if it is to attain descriptive adequacy.

Emonds's arguments against two alternatives to a permutational account of dative movement--one which the direct object moves to the right of the indirect object, and one in which the indirect object moves to the left of the direct object--are both based on the putative fact that such accounts necessitate ad hoc complications in the rules which generate what he takes to be the correct particle positions. However, in either case, one could just as easily come to the opposite conclusion: namely, we may attempt to formulate the rule which accounts for the final position of the particle in (13b) and (14b) in such a way as to ensure that it will generate what is presumably the correct class of cases.

Let us see whether this can in fact be done. Consider again the structural analysis of the dative rule as Emonds presents it (his (27)):

$$16)\quad X+V - NP_1 - (P) - \underset{PP}{} [\ {}^{to}_{for} - NP_2] - Y$$
$$\qquad\qquad\quad -pro$$

The first alternative is that NP_2 moves to the left over NP_1. Then it would appear, as Emonds points out, that "an optional position for particles will be after two object NP's,...no matter what order is used for particle movement and indirect object movement." Since Emonds thinks that such a position is ungrammatical except for a "quite limited" number of cases, he argues that this can be avoided only by adding an ad hoc condition to the particle movement rule making the rule obligatory in a second environment N-NP-NP-PRT. Furthermore, the adoption of such a solution destroys the possibility of using particle-movement to describe the dialectal differences which Emonds assumes.

The existence of such "dialects" is, as far as I can tell, extremely dubious. Although I have undertaken no systematic study of this question, everyone I have questioned about the different types of sentences used to differentiate these dialects accepts a mixture from all the different sentence types. I think it is correct to say, as Emonds does, that the most favored position for the particle in the double object construction is medially between the two NP's. As

far as the other positions are concerned, there is considerable variability: thus, although a given speaker may accept sentences of the form V-PRT-NP-NP (whether the inside NP is a 'to-dative' or a 'for-dative') in every case there will be sentences whose derivation is the same but which are unacceptable. For instance, with respect to 'to-datives', it seems to me that facts like the following pertain:

17) Can't you send me some over right away?
18) Can't you send me over some right away?
19) ?*Can't you send Jefferson some over right away?
20) Can't you send Jefferson over some right away?
21) ??Can't you send over Jefferson some right away?
22) Hand me over your gun, Cafone.
23) ?*Hand the cop over your gun, Cafone.
24) ?*Hand over the cop your gun, Cafone.

In other words, although the data are themselves far from clear, it would not appear that Emonds's account goes very far in giving us a workable account of the variation we encounter in this area. Thus, those of his arguments based on "dialectal" evidence seem to be of little value.

If we disregard the dialect argument, then, we are still left with the problem of adding a new environment to the particle movement rule, and furthermore, of stating conditions of applicability on this rule. But on this count, it should be noted, the added rule is no different from the other rules in Emonds's system, for his particle rule will also have to be supplemented either by a more subtle set of conditions on applicability or by elaborate exception mechanisms. We find

cases in which the particle can occupy only the inside position:

25) That solution of yours is giving off a terrible odor.
*That solution of yours is giving a terrible odor off.

26) The factory turns out lathes and dies.
*The factory turns lathes and dies out.

27) I've given up going.
*I've given going up.

We also find cases in which the particle must occur to the right of the object in simple cases:

28) Keep your head down.
*Keep down your head.

29) That dog's barking his head off.
*That dog's barking off his head.

30) The waves knocked our boat about.
*The waves knocked about our boat.

In other words, the question of dialects aside, the addition of the extra condition on the particle movement rule is not an ad hoc amendment, but necessary to the grammar in order to generate (13b), (14b), (17), etc. And in fact some rule of this kind is needed independently to account for sentences like the following, which have neither a 'to-dative' nor a 'for-dative' source:

31) Max gave Harry a kick, so Harry gave Max back a kick.
32) Max gave Harry a kick, so Harry gave Max a kick back.

On the theory we will develop below, the underlying structure for both sentences will be (32) and we will need a rule which generates (31).

Thus, the only ad hoc complications which are necessitated by the first alternative (leftward movement of the dative NP) involve an account of the dialect differences which Emonds sets up, and these distinctions are of dubious value. The second alternative is to move the direct object to the right of the indirect object. Again, one may question the strength of the argument, since it is based, like the argument against the first alternative, on the fact that ad hoc complications are necessitated by adding a rule. But, as in the first case, one can claim with equal justification that an extra rule is independently necessary, and thus this argument also fails.

3.2.2 There are further respects in which Emonds's account lacks the means of accounting for certain distinctions. Some of these will be seen in later sections. But I think that it is clear that in its primary goal--the attempt to account for the three postulated dialects--Emonds's theory is directed at a misconceived aim, since it is highly unlikely that such dialects exist in anything like the form that Emonds suggests. And apart from arguments based on these dialectal distinctions, the arguments simply do not go through.

3.3.0 An alternative: multiple base positions.

In attempting to construct a more viable theory of particles in English, we are faced, as I see it, with two basic problems, and several ancillary ones. First, the problem of generating the particles in the base: here there are two interrelated aspects. One concerns what category to assign particles, the second conerns the position or positions in the base to which the phrase-structure rules assign particles (or the category to which they belong). The second problem is to devise a set of rules which generate the correct set of surface structures from the assigned base positions. Among the ancillary problems we include such matters as productivity.

In certain respects, the account which I shall outline here is very close in spirit to those of Fraser (1965) and Williams (1974), in particular with respect to the fact that I shall argue that the base contains at least two particle positions. In order to develop the argument for this, however, I should like to leave temporarily in abeyance the status of the directional particle.

Although most of Emonds's arguments for the prepositional nature of the particles are based on directional particles only (cf. (5ii-v), I have no quarrel with his conclusion that particles be assigned to the category P (reposition).[6] But I think it is salutary to survey a few

other environments in which particles appear.

3.3.1 First, we note that particles (along with other prepositional phrases) appear to the right of the copula:

33) The doctor is out.
The party is over.
The parts aren't together.
The cars are off.
The race is on.
The shades are down.
All bets are off.
Livingstone is back.
The final returns from the second ward aren't in yet.

A convenient way to express this fact is to have the copula generated between NP and a node PRED, which in turn can be rewritten in a variety of ways: either AP, NP, or PP. An alternative, to analyze these particles as adjectives, is open to the objection that particles do not occur prenominally. The convenience of this account is in part due to the fact that PRED is optionally generated at the end of the VP under certain conditions.[7]

Now, if the foregoing is correct, and particles are generated under the node PRED in copular sentences (presumably with an intervening PP node, then we ought to expect that particles may be inserted at the end of the verb phrase when PRED is generated there. Evidently, this mode of introduction is to be distinguished from that which Emonds suggests via directional and other prepositional phrases.

3.3.2 Second, it appears to be the case that members of each of the major lexical categories noun and adjective may have the morphological form X+PRT, where we leave 'X' unspecified. In particular, I have in mind such words as $[\text{hard-up}]_A$, $[\text{stand-off}]_N$, $[\text{well-off}]_A$, $[\text{hard-on}]_N$, $[\text{bang-up}]_A$, etc. Such morphological structures are especially prevalent in forms derived from verbs, it is true, but such forms exist independently as well, as I think the examples given show. Now, if categories are represented as feature-complexes of some sort, as suggested in Chomsky (1970) and supported by some recent work (cf. particularly Bresnan, 1975), we might expect that it would be a more general fact if verbs exhibited the same morphological characteristics. Although such reasoning is not a compelling argument for the acceptance of such a proposal, the advantages of accepting the hypothesis that verbs of the form V+PRT also exist are not trivial: on the basis of this extra position, we can approach with better accuracy a satisfactory account of several interrelated phenomena.

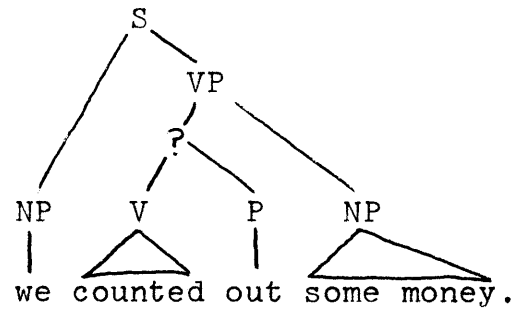
3.3.3 Consider the case of <u>count out</u>. We have:

34) We counted out some money.
35) We counted some money out.
36) We can count John out.
37) *We can count out John.

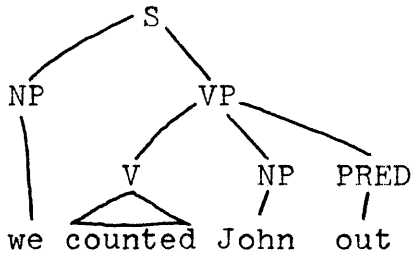
Let us suppose that the difference between (34-35) and

(36-37) is in fact a case of structural ambiguity and that the underlying structures assigned are as follows:

38)



39)



Now note two further facts: the first concerns accent, the second morphology. If we compare (35) and (36), we find that whereas in (36) the nuclear accent falls on <u>out</u>, in (35) it falls on <u>money</u>. In section 4.5 we will propose a rule which derives (35) from the structure given in (38) by means of a rule which moves the particle to the right of an adjacent NP. Clearly, then, the surface structures of (35) and (36) will be distinct, since (36) contains the node PRED. There are several ways in which this structural distinction can be used to determine the difference in accentuation: one is to order the particle movement rule after the nuclear stress rule has applied (at either the

VP-level or the S-level); another is to let the nuclear stress rule apply to primary stresses only if they are dominated by either a major lexical category (N,V,A) or by a phrase node within the relevant domain; another is to let stress be assigned to the node which dominates the lexical material rather than the lexical material itself. I shall not attempt to choose among these alternatives here, as they take us far afield from the domain of this inquiry.[8] Of importance here, however, is the fact that the distinction in structures provides a sound basis for a distinction in accentual properties, and the difference in accentual properties is correlated with different positional possibilities.

3.3.4 The second fact of interest concerns the so-called action nominal. It has been noted in the literature that nominals do not allow the node PRED to be generated in the complement:

40) *the painting of the house red (took seven hours)
41) *the killing of heretics dead (is no longer practiced in Spain)

We would presume, then, that there is no action nominal corresponding to (36). Yet we might expect that there would be one corresponding to (34). This is in fact the case:

42) the counting out of the money (took seven hours)
43)*the counting of John out (was a mistake)
44)*the counting out of John (was a mistake)

Thus, our hypothesis is consistent with two facts which are difficult to handle in the framework which Emonds presents, and our hypothesis would seem to follow from rather trivial observations about the properties of the base as they are currently understood.

It should be noted incidentally that there is some semantic support (for whatever it is worth here) for considering (36) to be an instance of a particle in the predicate position. This has to do with the interpretation of out. We simply note that there does exist a use of out to the right of the copula which has roughly the interpretation "not involved", which is more or less the contribution of out to the interpretation of (36).

3.3.5 If what has been said about base positions above is correct, then we have the following situation: particles can be generated as immediate adjucnts to the verb, and they can be generated under the node PRED. In fact, I also agree with Emonds that particles can be generated as 'intransitive' prepositional phrases (especially directional phrases) in positions normally filled by full prepositional phrases. For convenience, we shall refer to those particles which originate in the first way as 'verbal particles', those that originate under PRED as 'predicational particles', and those that take the place of full PP's as 'surrogate-PP particles'.

Given these underlying structures, we can now address ourselves to the problem of providing appropriate transformational mechanisms to account for the surface distribution.

The first rule we shall need is a rule which shifts the verbal particle to the right of the first NP to the right, a rule which is needed to map count out the money onto count the money out. This rule we write as follows:

45) Particle Movement (left-right)

X-V+PRT-NP-Y

1 2 3 4 5 → 1-2-Ø-4-3-5

With respect to the predicational particle, we need say nothing: the only re-ordering possible will be carried out by the perhaps infelicitously named rule of Heavy-NP Shifts:[9]

46) Heavy-NP Shift

$X\text{-}NP\text{-}\begin{Bmatrix}PRED\\PP\end{Bmatrix}\text{-}Y$

1 2 3 4 --→ 1-Ø-3-4-2

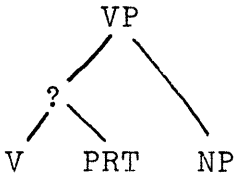
On independent grounds, this rule will also move (as noted in the above formulation) an NP to the right of an adjacent PP. Thus we predict two positions for the surrogate-PP particle.

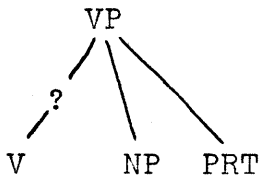
Summing up this discussion briefly, we have postulated

three separate sources for particles with respect to the cases with which we are concerned. Furthermore, we have postulated a left-right particle movement rule and have invoked the rule of Heavy-NP Shift to account for the surface distribution of particles. Schematically, then, we have the following options:

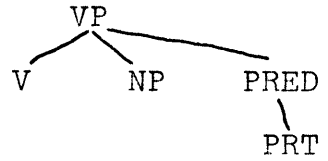
47) base positions possible derived structures

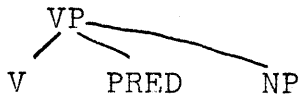
i) verbal particle



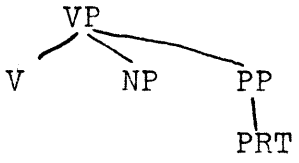


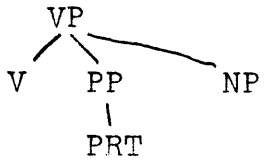
ii) predicational particle





iii) surrogate-PP particle





Note that we have as yet no rule to move the particle to the left. If this is correct, then we might expect that surrogate-PP particles could only appear to the right of the direct object, unless Heavy-NP Shift applies (in one of its two guises; cf. n. 9). In some cases, at least, this appears

to be the correct result, although it is difficult to make hard and fast discriminations between the predicational particle and the surrogate-PP particle. Consider the following case:

48) John helped the man out.

This sentence is ambiguous between a reading on which John aided the man and a reading on which John was of some assistance in manoeuvering the man outside some area or enclosure. Putting the particle to the left of the object disambiguates (48), as does placing heavier than normal stress on out:

49) John helped out the man (aided the man)
50) John helped the man out.

A similar case is

51) John got the horse back.

Either the custody or ownership of the horse was returned to John, or he brought the horse back (to some designated location). Placing the particle to the left of the object again disambiguates in favor of the former reading. Whether stress also disambiguates this case is not clear as in the former case.

52) John got back the horse. (=the horse is again John's)

53) John got the horse back.

3.3.6 We have seen that the positional properties of the particle are most significant in assigning it to one or the other of the various base positions. The accentual properties of the particle have also been relevant. It should be noted, however, that semantic criteria do not provide a very accurate way of telling what the underlying structure is. There is no reason to expect, for instance, that a verbal particle may not contribute a 'directional' aspect to the interpretation of the V+PRT constituent of which it is a part. For example, in the following cases, the particle away might loosely be classified (semantically) as 'directional' in both cases, but the syntactic properties of the two cases differ, suggesting that a distinction in underlying structure will be of use:

54) John drove the wolves away.
55) John drove away the wolves.

56) John drove the car away.
57) *John drove away the car.

In this case, the stressability criterion seems rather inconclusive. But stressability, fortunately, is not the sole criterion. There are other advantages to assigning these cases to distinct underlying structures: consider the placement of adverbs.

58) John drove the wolves away slowly.
59) *John drove the wolves slowly away.

60) John drove the car slowly away.
61) John drove the car away slowly.

A reasonable way to handle this difference is to claim that in the 'wolves' case, the particle away is a verbal particle, which can move to the right only over an adjacent NP: this blocks the generation of (59). Of course something more must still be said about (60), even under the hypothesis that it is predicational particle, but I shall not discuss the variety of alternatives which suggest themselves.

In any case, the postulation of (at least) two underlying positons for particles provides a basis for an account of this behavior. And in fact we should be able to observe the distinction in intransitive cases as well, the various ways of generating the particle being independent of the existence of one (or two) objects. Thus, consider examples like:

62) The parade passed by quickly.
63) The parade passed quickly by.

64) Max passed out quickly.
65) *Max passed quickly out.

Such differences lend support to the underlying distinction between inside and outside particles--verbal particles as against either predicational particle or surrogate-PP particle--, and provide further evidence against theories like

Emonds's in which there is only one base position available.

3.3.7 Complex cases.

3.3.7.1 In certain cases, the verb phrase contains both a particle and a prepositional phrase, or a particle and a predicate adjective or nominal. Such cases have important consequences. Consider first the following case:

66) John pushed away the place.
67) John pushed the plate away.
68) John pushed the plate away from him.
69) *John pushed away the plate from him.

Within the theory being developed here, we have a choice: we can maintain that in (66-67), away is a verbal particle; or we can allow the rule of Heavy-NP Shift, as formulated above in (46), to apply more readily in the case that PP dominates only P than is usual. On the first alternative, we must assume that the verbal compound push away is not subcategorized for directional prepositional phrases in order to block (69). On the second alternative, which seems preferable, we need only make the rather natural assumption that away from him forms a single prepositional phrase. Since we have at our disposal no rule which moves particles (or prepositions) to the left, (69) will not be generated. If Heavy-NP Shift applies, by the A-over-A principle we will only generate sentences like (70); sentences like (69) and (71) are ungenerable:

70) John pushed away from him all dishes containing meat.
71) *John pushed away all dishes containing meat from him.

In comparison with the case just discussed, it is instructive to consider cases like the following:

72) John handed off the ball to his fullback.
73) John handed the ball off to his bullback.

In this case, our theory forces us to assume that hand off is an instance of V+PRT. Whereas in (68) the sequence away from him forms a deep structure constituent PP, in (73) the sequence off to his fullback is a derived form, arising from the application of left-right particle movement, as formulated in (45).

We may test these consequences of our theory by examining the placement of adverbs: if our conjectures are correct, then we should not expect to find adverbs situated between away and from him in sentences corresponding to (68), whereas in the case of sentences corresponding to (73) we should expect that adverbs could occur between off and to his fullback. What justifies this expectation is first, that adverbs occur more or less freely between the direct object and prepositional phrases that follow it, as in (74).

74) Max poured the fat slowly into the fire.

Second, if we have base-generated complex PP's like from

under the porch or off the bridge,[10] it is impossible to place an adverb between from and under, or off and of. Thus,

75) The noise came, evidently, from under the porch.
76) *The noise came from, evidently, under the porch.

77) The soldiers ran quickly off of the bridge.
78) *The soldiers ran off quickly of the bridge.

In some cases, we find a particle interacting with a complex PP:

79) John drew out a knife from within his coat.
80) John drew out a knife swiftly from within his coat.
81) John drew a knife out swiftly from within his coat.
82) ?*John drew a knife swiftly out from within his coat.
83) From within his coat, John drew out a knife.
84) ??From within his coat, John drew a knife out.
85) *Out from within his coat, John drew a knife.

Apart from the questionable status of (84), this range of facts is precisely what we should expect if draw out is an instance of the verbal particle.

Returning to the examples given in (66-73), we find the following kind of interaction with adverbs:

86) John pushed the plate slowly away from him.
87) *John pushed the plate away slowly from him.

88) John had handed the ball off secretly to his fullback.
89) ?*John had handed the ball secretly off to his fullback.

These judgments, if they are correct, are roughly in line with our expectations, given the hypothesis that away from him is a base constituent, while hand off is a base

constituent.

3.3.7.2 Jackendoff (1974b) has pointed out that particles do not move to the right around predicate nominals.[11]

90) John grew up a Catholic.
91) *John grew a Catholic up.

We have already noted (cf. n.7) that there is in some cases a curious relationship between the presence of particles and the possibility of generating material under the node PRED. Thus, contrast the above examples with

92) *John grew a Catholic.

Equally striking is the fact that in many transitive cases, the particle is fixed between the object and the predicate nominal. Consider the following case:

93) Stanley brought Livingstone back a hero.

We are concerned here with the interpretation which is related to

94) Livingstone came back a hero.

This reading is not available if we move the particle to the left of the object (Livingstone).

95) Stanley brought back Livingstone a hero.

Compare:

96) Stanley brought Livingstone back exhausted.
97) Stanley brought back Livingstone exhausted.

98) Stanley brought Livingstone back a present.
99) Stanley brought back Livingstone a present.

In (96), exhausted may be predicated either of Livingstone or Stanley; in (97) exhausted is predicated only of Stanley. In (98-99) Livingstone is interpreted as a 'for-dative' (which is why (95), parallel to (99), is somewhat bizzare).

In other words, in some cases at least, the particle is fixed between the object and the predicate modifier. A set of similar cases:

100) They sent the missionary out rested.
*They sent out the missionary rested.

John put the book down flat.
*John put down the book flat.

Pull the wire out straight.
?*Pull out the wire straight.

There are cases, however, in which the object can separate the particle and the predicate modifier. Thus consider:

101) The clerk sent out the check unsigned.
The student handed in the paper late.

This distinction receives a natural formulation in terms of the system we have set up: the particles which can occur on

the inside will be generated as verbal particles; those which appear only on the outside will be generated as predicate particles. In accordance with the rules we have postulated, the predicate particle will be fixed, whereas we should expect (ceteris paribus) that the inside particle should be able to move. This latter expectation is borne out:

102) The clerk sent the check out unsigned.
The student handed the paper in late.

Thus, with respect to accentuation, the positioning of adverbs, the behavior of complex cases, the theory being developed here offers a greater promise of descriptive adequacy than does a theory in which there is only a single base position for particles. Furthermore, thus far we have not extended the base rules in any fundamental respect: we have merely tried to point out ways in which the existing base rules may be construed as generating particles in more than one position. Again, a theory based on a single base position must resort to ad hoc devices in order to account for such differences.

3.3.8 Analysis, productivity, and compositionality

Given the three possibilities of base generation which we have postulated, we might expect there to exist, at least in a gross way, a distinction between the verbal particle, on the one hand, and the other two types, on the other. The

basis for this expectation is that the surrogate-PP particle and the predicational particle should be subject to the same general mode of interpretation that full prepositional phrases and other predicate modifiers are respectively subject to. In other words, although the occurrence of the predicational particle in a given expression is no guarantee against idiomaticity (witness our initial example--count NP out), the lexical association of verb and verbal particle should be especially conducive to both semantic opaqueness of the root interpretation of both the verbal stem and the affixal particle and the possibility of rather radical changes in the selectional and subcategorizational properties of the stem verb.

Williams (1974) has pointed out a number of minimal pairs which may be distinguished according to the base position of the particle. For example, the particle together is often used (predicatively) where the contiguousness of two or more objects is in question; as a verbal particle, on the other hand, it occurs as a verbal particle where it is the construction of an object that is in question:

103) John nailed the boards (tightly) together.
104) John nailed the bookcase (*tightly) together.

In other cases, we find more radical changes. Consider the the various uses of turn down:

105) The proximity of water turns the dowsing rod down.
106) *The proximity of water turns down the dowsing rod.
107) John turned down the offer.
108) John turned the offer down.

In (105), down is presumably not a verbal particle, as it cannot occur to the left of the object. Here the selectional properties of turn (in at least one of its senses) are not affected; one may turn a dowsing rod. In 9107-108), down is a verbal particle, which combines with turn with the meaning 'refuse'. In this case, the combination has selectional properties quite distinct from those of turn.

Similarly, we find cases in which subcategorization is affected. For example, the particles off and out often combine with verbs in such a way as to yield new environments for 'for-datives'.

109) John bit a piece of licorice (*for himself).
110) John bit off a piece of licorice for himself.

Although I shall make no thoroughgoing attempt to analyze such cases, it seems plausible that the greater richness of the theory outlined in the above sections offers a more promising framework for the analysis of such cases than does a theory in which particles are treated structurally in a single way.

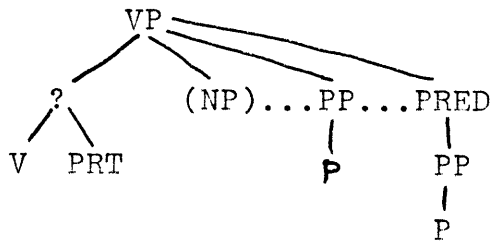
3.4.0 Preliminary recapitulation.

It is useful at this point to summarize briefly the

basic points of the theory of particles which I am attempting to set forth.

First, from general considerations about the distribution of particles, it has been suggested that particles can be generated in three different environments: as adjuncts to the major lexical categories N, V, A; as intransitive prepositional phrases; and, as a result of this latter feature, as (prepositional) expansions of the node PRED. A consequence of this distribution is that particles can originate in various places beneath the node VP. Schematically, the positional possibilities for the base-generation of particles are as follows:

111)



Second, it has been suggested that only those particles which originate beneath the phrase node PP can bear the nuclear accent if the verb is transitive.

Third, two rules have been invoked which change the relative order of the particle and the direct object: the first is a left-right particle movement rule which separates the verbal particle from the verb and moves it to the right of the direct object. The second is the rule usually referred to as Heavy-NP Shift.

Fourth, it has been suggested that this system of base positions and movement rules is able to account for at least some problems of adverb placement which are incapable of solution in a theory which, like that of Emonds, contains only one base position for particles.

Fifth, by postulating an inside position, we may also account for the distinction between complex prepositional phrases, complex predicate modifiers, and surface sequences of the form PRT-PP and PRT-PRED respectively. Again, adverb placement is relevant to this inquiry, as well as the possibility of multiple positions for the particle.

3.4.1 Although in comparison with a theory founded on a single base position, the theory just outlined, if successful in treating all of the above areas, appears better-equipped to achieve descriptive adequacy, it is certainly not without problems. In particular, it is difficult to account for the non-proliferation of cases in which more than one particle occurs, a fact which would appear to be a natural consequence of a theory based on a single base position.[12] Apparently, although one finds complex particles of the type back up, as in

112) Toss me back up that wrench, will you Mike?

it is difficult to find cases in which two particles occur discontinuously, i.e. a putative case analogous to

113) *John handed back his paper in.

On the account we are considering, we can deal with this lack of separation only if the particles are both generated to the right of the direct object. However, we have no principled way of accounting for the apparent lack of such base structures.

It should be pointed out, however, that it is not clear that Emonds's theory fares any better in this regard. Since it is necessary to generate in some fashion sentences of the form V-PRT-NP-PP, like (73) above for example, there seems to be no principled way to exclude the case in which the final PP contains only an intransitive preposition.

3.4.2 Condition on the particle movement rule.

If the particle movement rule we have postulated were always applicable, we should never come across cases in which the particle is fixed to the left of the direct object. As we have seen, however, such cases in fact exist.

114) The solution was giving off a terrible stink.
115) *The solution was giving a terrible stink off.

Here we might say that give off is simply marked as an exception to the particle movement rule. Such a solution is not terribly illuminating: it provides a way of classifying the data but is incapable or providing any insight. Furthermore, in this case, I believe that it can be shown that this

mechanism is inadequate in principle, for such a marking predicts that verb+particle combinations which exhibit a fixed position in some cases will exhibit the same fixed position in all cases. Such a claim is false.

3.4.2.1 The most famous restriction on particle position concerns the fact that unstressed definite pronouns may not follow the particles.[13] Other similar restrictions exist, however. Consider the fact that when backward pronominalization applies, the antecedent is de-stressed. (Underscoring indicates an anaphoric relation below.)

116) After <u>he</u> arrives, I'll have to meet John,
I suppose.

In (116), if <u>he</u> and <u>John</u> refer to the same person, the nuclear accent is placed on meet; concomitantly, if the nuclear accent falls on <u>John</u>, <u>he</u> refers to someone else. Now consider cases like the following:

117) Mary tossed in the suitcase.
118) Mary tossed the suitcase in.
119) After dragging <u>it</u> down to the lake, Mary tossed the <u>suitcase</u> in.
120)*After dragging <u>it</u> down to the lake, Mary tossed in <u>the suitcase</u>.

121) I'll call up John.
122) I'll call John up.
123) If you introduce <u>him</u> to me, I'll call <u>John</u> up.
124)*If you introduce <u>him</u> to me, I'll call up <u>John</u>.

In cases like (119) and (123), in which the direct object is

the antecedent of a pronoun to its left, it cannot receive the nuclear accent and occurs to the left of the particle only.[14]

This constraint is based primarily on the accentual properties of the sentence--not directly on the fact that the direct object is the antecedent of an NP to its left. That this is so can be seen by looking at questions corresponding to the sentences above:

125) After dragging it down to the lake, did Mary (actually)toss in the suitcase?
126) If I introduce him to you, will you call up John?

In these cases, the pitch rises on the particle and stays high until the sentence-final rise.

It seems rather implausible to attempt to incorporate such restrictions into the particle movement rule. An alternative is to place the onus of accounting for these sentences either on the rules which assign intonation to these sentences or on a surface filter which is able to take account of intonational properties. If this is correct, then, factors independent of the statement of the particle movement rule itself play an important role in determining the well-formedness of sentences in which the particle appears in one position rather than another.

3.4.2.2 In other cases, the particle is fixed on the inside. At times, this position is mandatory, as with

give off. There are some other verbs, however, which manifest more complex behavior. Consider the verb turn out in the sense in which it means roughly "produce".

127) West Point turns out generals.

If we shift the particle, this interpretation is lost:

128) West Point turns generals out.

The normal interpretation of (128) is that generals are denied admittance. Another example, in which this interpretation of turn out is not available, has already been mentioned.

129) The factory turns out lathes and dies.
130) ?*The factory turns lathes and dies out.

Note that with a few alterations, however, the particle can appear on the right:

131) The factory turns three lathes out per month.

If these judgments are correct, we shall have to formulate more general conditions which govern the positioning of the particle.

It is sometimes suggested that contexts like (127) and (129) are 'presentational', presumably meaning that like existential sentences such sentences introduce new material into the discourse in which they occur. Although such

nomenclature is too vague to be of much assistance, nevertheless it does seem that for certain verbs (apparently only some verbs are relevant) some distinction along these lines is appropriate. In support of this conjecture, I cite a few examples in which a distinction between definiteness and indefiniteness plays an important role:

132) The discovery of a new continent opened up unlimited opportunities.
?*The discovery of a new continent opened unlimited opportunities up.
133) The slaughter of the Indians really opened up the West.
The slaughter of the Indians really opened the West up.

134) This treaty will only bring about war.
*This treaty will only bring war about.
135) That's what brought the war about.
136) That's what brought about the war.

3.4.2.3 Summing up this section briefly, we have seen that the rules which we have proposed to account for the surface positioning of the particle are not, as they stand, completely adequate. Nor is it evident how to give a precise formulation of the conditions which seem to be necessary. The difficulties involved here are not, however, confined to the theoretical framework which I have tried to develop: they are problems for any theory of particles.

In a broader perspective, I have tried to show that although the theory developed in section 3.4.0 is not free of problems and fails to settle the question of the positioning

of the particle completely, it is possible to develop a theory of particles which has a good deal of empirical content nevertheless. In the next section we shall extend the domain of our inquiry to the dative constructions. And, as in the case of single object constructions, I shall try to show that although the theory developed here is not strong enough to account for all aspects of the behavior of particles, it is not weak enough to lack empirical content and be devoid of interest.

3.5.0 The particle in the double object construction

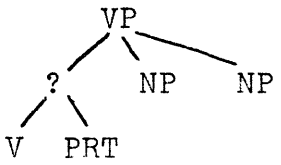
We now turn to the dative constructions, particularly the double object construction. There are two major problems here. The first concerns determining the conditions under which we find a given verb occurring with a given particle in both the prepositional dative construction and the double object construction. The second concerns the positioning of the particle.

3.5.1 Our investigation will be conducted on the premise that the double object construction is base generated in all cases, Although I shall argue on independent grounds that this is in fact the case below in Part Three, nothing crucial hinges on this assumption for this discussion. As far as I have been able to tell, a transformational account of the dative alternation which is formulated within the

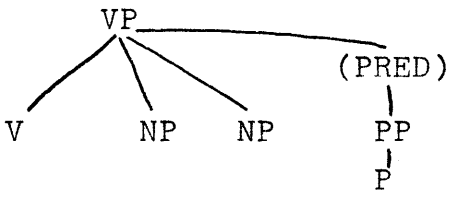
general framework for particles adopted here makes essentially equivalent claims.[15]

3.5.1.1 We start with the fact that we are given two obvious positions for the particle, one to the left of both NPs, one to the right of both NPs.[16] Schematically,

137)



138)



The rules we have already postulated will operate on both structures to produce the order V-NP-PRT-NP.

In most cases, this seems to be the preferred position for the particle. The theoretical status of this preference is far from clear, however. Judgments are notoriously weak in this area, not least because it is unclear that the preference for the medial position is based on grammatical factors or stylistic ones. Furthermore, we have already seen cases in which the positioning of the particle seems to depend in part on such factors as intonation, as well as factors tied in with 'presentational contexts'. It makes

no sense to construct a theory whose only purpose is to account for a range of facts whose status is unclear.

The rules already given suffice to generate the appropriate range of surface positions. If it is found that the conditions of applicability can be formulated in a way which turns out to be inconsistent with the rules as stated, a consequence of our theory is that new rules would have to be stated to deal with these cases. As we shall see below, however, our theory does not stand or fall solely on the basis of its treatment of the positioning of the particle.

3.5.2. It appears to be a fact of English that we never find directional phrases (full prepositional phrases) co-occurring with the double object construction. In other words, although sentences like (139) exist, there are no sentences of the form V-NP-NP-PP, as in (140), where the PP has a directional interpretation.

139) John threw the ball down the field to Max.
140) *John threw Max the ball down the field.

On a transformational theory, this fact can be handled in a number of ways. One is to write the dative movement rule, as Emonds does, in such a way as to allow the rule to operate only in case the dative NP is separated from the direct object by the preposition <u>to</u> (or <u>for</u>) and at most one or two particles: the presence of an intervening full PP blocks the

application of the rule.

There are two major drawbacks to this account. First, it has to see how this theory can block the generation of cases like the following:

141) ?*John kicked me in the soccer ball.

The source for (141) on a transformational theory of the dative alternation is the well-formed (142):

142) John kicked the soccer ball in to me.

The difficulty arises from the fact that neither kick nor in can be marked as exceptions to the dative transformation. Nor is it likely that kick in can be so marked, since by our criteria, kick in is not even a lexical item: in constitutes a surrogate-PP particle in this case as the following examples indicate.

143) ?*John kicked in the soccer ball to me.
144) John kicked the soccer ball slowly in to me.

The second drawback to the transformational account of the lack of directional PP's in the double object construction is its essentially ad hoc character: there is no reason why the restriction might have been completely different.

Consider the fact that directional phrases in combination normally have a canonical linear order, roughly corresponding to (iconic) order source-path-goal. Thus, although we find

sentences like

145) John threw the ball down the field past the 50-yard line to the tight end.

we cannot meddle with the order of the PP while maintaining the directional interpretation (as opposed to a reduced relative interpretation):

146) *John threw the ball past the 50-yard line down the field to the tight end.
147) John threw the ball down the field to the tight end past the 50-yard line. (relative interpretation only)
148) John threw the ball to the tight end down the field past the 50-yard line. (again, only relative interpretation)
149) *John threw the ball to the tight end past the 50-yard line down the field.
150) John threw the ball past the 50-yard line to the tight end down the field. (again, relative interpretation only)

If our conjecture above is correct, that the order source-path-goal is the only one possible, then a special case of this is the fact that in the double object construction, there can be no PP to the right of the indirect object which has a directional interpretation. A consequence of this theory is that there can be no surrogate-PP particle originating from a directional PP in the double object construction.

3.5.2.1 Recall the discussion above in section 3.3.7.1 of complex prepositional phrases, where we claimed that cases in which the particle could not appear next to the verb but could

appear as an (initial) element in a complex prepositional phrase were not to be generated as verbal particles. Thus, we found a contrast between cases like

151) John pushed the plate away from him.
152) *John pushed away the plate from him.

and cases like

153) John handed the ball off to the fullback.
154) John handed off the ball to the fullback.

We assigned the particle off in the second case to the verbal position, whereas away was generated as part of the directional phrase. And it was found that this decision had a favorable correlation with the placement of adverbs.

In line with the fact that directional surrogate-PP particles are banned from the double object construction, then, we ought not to find particles in the double object construction which in the corresponding prepositional construction have only the status of directional particles. There is some evidence, at least, that such a decision is correct. Consider:

155 a) The umpire threw the ball out to the pitcher.
b) ?*The umpire threw out the ball to the pitcher.
c) The umpire threw the ball swiftly out to the pitcher.
d) *The umpire threw the ball out swiftly to the pitcher.
e) *The umpire threw the pithcer out the ball.

Compare the following case:

156 a) The secretary sent a messenger over to me.
b) The secretary sent over a messenger to me.
c) ??The secretary sent a messenger quickly over to me.
d) ?The secretary sent a messenger over quickly to me.
e) The secretary sent me over a messenger.

Since out cannot occur next to throw, we have to say that it is a (directional) instance of the surrogate-PP particle. On the other hand, over, at least in accordance with the criteria we have at our disposal, is an instance of the verbal particle. Interestingly, only send over occurs in the double object construction, as evidenced by the contrast between (155e) and (156e).

3.5.2.2 A fairly representative group of particles is given in the following list:

157) about, across, along, around, aside, away, back, by, down, forth, in, off, on, out, over, through, up

Although a few of these do not seem to occur in the prepositional dative construction with to (e.g. about, aside, by, forth), among the remainder we find a set which occurs in the prepositional dative construction but not in the double object construction. For example, consider the following set of verbs--a representative cross-section of those verbs which occur in both dative constructions.

158) give, offer, pay, pass, read, rent, sell, send, show, take, throw, toss, write, yell

In the following table, we list these verbs which occur in the prepositional dative construction with to, along with the particles which appear with them. A (*) to the left of the particle indicates that there is no corresponding double object construction containing the particle.[17]

159)

give:	back, *up
offer:	*around, back, *up
pay:	back, *in, *off, *out, *over
pass:	*across, *along, *around, back, down, in, *off, out, *over, *through, up
read:	back, *down, *in, off, out, *through, *up
rent:	*back, *out
sell:	back, *off
send:	*across, along, *around, back, down, in, *off, out, over, *through, up
show:	*around, *off
take:	*across, along, back, down, in, *off, out, over, up
throw:	*across, back, down, ?in, *out, over, up
toss:	*across, *around, back, down, ?in, *out, over, *through, up
write:	back, *in, *off, out
yell:	*across, back, down, ?in, ?out, *over, *through, up

Our theory predicts, then, that in all cases in which we find particles occurring in both constructions, we should find the particle moveable in the prepositional construction. Concomitantly, if the particle is not moveable in the prepositional construction, then it should not be found in the double object construction.

The following data are relevant.

160) John gave back the money to Jake.
*John gave up the money to the police.

John offered some candy around to his friends.
*John offered around some candy to his friends.

John offered sacrifices up to the gods.
?John offered up sacrifices to the gods.

John paid back the loan to the bank.
*John paid in the money to the teller.
?John paid off the loan to the bank.
*John paid out the money to his creditors.

*John passed across the salt to Harry.
?*John passed along the news to his family.
??John passed around some candy to his friends.
John passed back the candy to me.
John passed down the hammer to me.
John passed in the hammer to me.
*John passed off the ball to Frazier.
John passed out the tickets to his friends.
*John passed over the salt to Arnold.
*John passed through the salt to Arnold.
John passed up the hammer to me.

John read back the figures to me.
*John read down the announcement to the crowd.
*John read in the figures to the secretary.
John read off the figures to the crowd.
John read out the figures to the audience.
*John read through the figures to the secretary.
*John read up the figures to the guest (on the second floor).

*John rented back the house to us.
?*John rented out the house to them.

?John sold back the house to the former owner.
?*John sold off the house to the government.

*John sent across the salt to Mary.
?John sent around tickets to his friends.
John sent back the tickets to the owner.
John sent down three books to me.
John sent in a manuscript to the magazine.
*John sent off the manuscript to the magazine.

*John showed around the goods to his financial backers.
*John showed off his diploma to his family.

*John took across the message to the enemy.
*John showed off his diploma to his family.

*John took across the message to the enemy.
?John took back the records to the COOP.
?John took down the hammer to Arnold.
John took in the measage to his boss.
*John took off the message to the enemy.
John took out a tip to the garbageman.
?John took over the book to Marcia.
John took up the news to the chief.
*John threw across the ball to Arnold.
?John threw back the ball to Max.
John threw down the leaflets to us.
?John threw in the leaflets to us.
John threw out the ball to the pitcher.
*John threw over a couple of sandwiches to us.
*John threw through a couple of sandwiches to us.
John threw up a hammer to me.

?*John wrote back a report to his superiors.
*John wrote in a letter of protest to the paper.
*John wrote off a letter to his parents.
John wrote out a check to us.
*John wrote out a letter to his fans.

*John yelled across the news to us.
John yelled back the score to those in the rear.
John yelled down the score to those below.
?John yelled in the score to those inside.
John yelled out the score to those outside.
?John yelled over the score to those on the other side.
*John yelled through the score to those above.

The correlation here is not perfect. But in some interesting cases, it appears that our theory does make exactly the right predictions. For instance, the verb read seems to behave precisely along the lines that we would expect: namely, there is a perfect correlation between the possibility of the inside position and the occurrence of the double object

construction. Furthermore, the particles like around, across, through, away, etc., which never appear in the double object construction also never appear to the left of the direct object in the prepositional construction. Note that in this regard, our theory is clearly superior to that of Emonds, since his theory lacks the power to express this correlation except by brute force: in particular, these particles can occur as verbal particles in some cases:

161) John got across his point forcibly.
162) John got his point across forcibly.

163) The majority whip was able to push through the bill in a matter of weeks.
164) The majority whip was able to push the bill through in a matter of weeks.

In short, the banning of the particle which originates as a surrogate directional PP has interesting consequences in the framework developed here.

3.5.2.3 Another aspect of our theory which deserves attention is the fact that we are able in principle to make a distinction between the verbal particle and the predicative particle: a consequence of this is that our theory will not allow predicative particles to occur initially and will not allow verbal particles to occur finally, given the current formulation of the rules and base structures. As an illustration of the possible utility of this distinction, consider the following cases:

165) ?Pass over Mary the salt, would you please?
Pass Mary over the salt, would you please?
?*Pass Mary the salt over, would you please?

166) While you're at it, why don't you

*send over John some of those cigars?
send John over some of those cigars?
send John some of those cigars over?

Again, it is difficult to make confident judgments in this area. However, we might expect it to be the case that such distinctions exist. On the other hand, we may find that there are cases in which the particle can occur only medially, cases in which the particle can occur medially and (weakly) initially, cases in which the particle can occur medially and finally, and perhaps even a few cases in which the particle can occur only finally (take...along). In any case, insofar as such differentials can be found, they support a theory in which there are multiple base positions over one which treats all particles as originating in a structurally similar way.

4.0 Movement constraints on the indirect object

4.1.0 The problem.

Fillmore (1965) noticed that when wh-movement applied to the indirect object of a double object construction, the resulting sentence was ungrammatical.

1) *Who did Max tell a joke?

He proposed that the generation of sentences like (1) be avoided by placing a restriction on the rule of wh-attachment. Kuroda, however, in his 1968 review of Fillmore's book, showed that this solution was inadequate on two grounds. First, in circumstances which do not require the movement of the wh-word, such as echo questions, the attachment of wh to the indirect object is permissible. Thus, given the proper intonation, (2) is grammatical.

2) Max told who a joke?

Second, and more importantly, Kuroda demonstrated that the ungrammaticality of (1) follows from a more general constraint which prohibits the movement of the indirect object over material which is represented in the structural description of the rule by a variable. Thus, not only is (1) bad: so are (3-6) as well:

3) *Your upstairs neighbor, I told a joke yesterday.

4) *It was your upstairs neighbor that I told a joke.
5) *Your upstairs neighbor is hard to tell a joke.
6) *Your upstairs neighbor is the person who I told a joke yesterday.

That the constraint in question be formulated in such a way as to mention the variable which these rules involve is important: it is this property which separates these rules from the passive--which does not contain a variable and whose application does not in general produce the violation evidenced in (3-6).

4.2.0 The only way such factors would follow from a transformational account of the dative alternation is if the dative rule or rules were ordered after all of the rules which produce the sort of violation seen in (3-6). Such an ordering is clearly impossible, however, since it can be shown that the dative rule must precede the application of such rules as Wh-Movement, Clefting, and Relativization.[18]

The simplest way to show this is by considering the interaction of the above-mentioned rules with the passive. Obviously, if sentences like

7) Someone gave the diplomat the pouch of documents.

are derived by means of a dative transformation from sentences like

8) Someone gave the pouch of documents to the diplomat.

then the dative transformation must precede the passive in the derivation of

9) The diplomat was given the pouch of documents.

But rules containing a variable may apply to the derived subject of (9):

10) Who do they believe was given the pouch of documents?
11) It's the diplomat that they believe was given the pouch of documents.
12) The diplomat who they believe was given the pouch of documents turned up in Tangier.

Therefore, in such derivations, the dative movement rule would have to apply before the rules which move the diplomat in (10-12). Therefore, rule ordering cannot be invoked to block the generation of the ungrammatical (13-15):

13) *Who do they believe Max gave the pouch of documents.
14) *It's the diplomat that they believe Max gave the pouch of documents.
15) *The diplomat who they believe Max gave the pouch of documents turned up in Tangier.

The same point can be made with regard to deletion (or interpretation in infinitival complements of too and enough.

16) John is too much of a loud-mouth to tell our secrets to.
17) *John is too much of a loud-mouth to tell our secrets. (on the reading in which John is construed as the indirect object of tell)
18) John is too much of a loud-mouth to be told our secrets.

If the rule responsible for the deletion or interpretation in these cases is the same (or applies at the same point in derivations), it is clear that it must be able to apply after the passive has had a chance to apply in the embedded infinitival sentence. Thus the dative movement rule must also have had a chance to apply. Therefore, the ordering of the dative transformation cannot be a factor in the ungrammaticality of (17).

4.3.0 It is occasionally suggested that the type of violation exhibited in (3-6) could be blocked by a global derivational constraint. For instance, Langendoen, Kalish-London, and Dore (1973) suggest that such a constraint "would be formulated along the following lines. In a derivation, a noun phrase that has been moved by Dative may not be moved again by any unbounded rule" (footnote 6, pp. 454-455). Besides being theoretically undesirable, such a constraint is inadequate in two ways.

First, as we saw in the last section, unbounded movement rules may freely move an NP that has been moved by the putative dative transformation, but just in case the passive rule has moved the NP from the indirect object position to the subject position.

But even if we improve the descriptive adequacy of this derivational constraint by including this information, it is clear that this approach suffers from a further, fatal inadequacy. If the constraint is formulated along the lines

suggested by Langendoen et al., then the structural properties of the double object construction are irrelevant: what is relevant whether or not an NP has been affected by the dative movement rule. On the other hand, if it is the structural properties of the double object construction which are relevant, then a global condition is otiose, and a non-global constraint may replace it. Since, as we saw in Part One, there are principled reasons for generating at least some instances of the double object construction in the base, we can test whether it is derivational properties or structural properties which are relevant to the formulation of the constraint. If only structural properties are relevant, then the rules which produce the violations instanced in (3-6) will produce violations when applied in a similar way to base-generated instances of the double object construction; the global derivational constraint as formulated by Langendoen et al. is consistent with any array of judgments in such cases. Therefore, consider the sentences below, in which the application of a dative movement rule has played no role.

19) The last hand cost someone a steak dinner.
20) *Who did the last hand cost a steak dinner.
21) *It was John that the last hand cost a steak dinner.
22) *The man who the last hand cost a steak dinner will be hungry in no time.

Such examples show that the violations in question are based on the structure involved, not on the particular course of the derivation that gives rise to it.

4.4.0 It is sometimes suggested that what is at issue concerns structural ambiguity (cf. Hankamer, 1973). There are two good reasons why such proposals, as currently formulated, are inadequate to handle the facts in question.

First, there is a distinction in grammatical status between cases in which the first NP is moved or deleted and those involving the second NP (of the double object construction). For example, in contrast to (3-6) and (20-22), the following sentences are all good.

23) What did the dinner cost John?
24) The results aren't important enough to tell the President.
25) That isn't the method I taught them.
26) Look at the beautiful bouquet Mary brought your brother.
27) That's too frivolous a present to give your father on such an important occasion.

These cases are also structurally ambiguous; yet there remains a contrast in grammaticality between cases in which the second object is affected (which are good) and those in which the first object is affected (which are no good). Since the notion structural ambiguity is relevant to both cases, structural ambiguity alone cannot account for the ungrammaticality of (3-6).

Second, for many other cases, constraints based on structural ambiguity predict the wrong results. For example, the sentence below is structurally ambiguous--yet both readings are possible.

28) Who do you want to choose?

To this question, one may answer in two ways:

29) I want you to choose.
30) I want to choose Wilt.

Sentences of this kind also provide evidence against the perceptual strategy suggested in Jackendoff and Culicover (1971), which is based on the general perceptual problem of recovering the deep structure grammatical relations on the basis of surface structure evidence. Their account of the ungrammaticality of sentences like (3-6) would also rule out (28), and must thus be rejected.

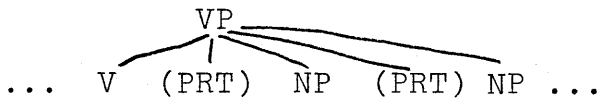
4.5.0 Langendoen et al. take the novel approach of claiming that sentences like (3-6) are in fact not ungrammatical at all; they are merely unacceptable. Furthermore, they claim to have established the existence of a group of English speakers living in the Greater New York area for whom such sentences are both grammatical and acceptable. They hypothesize that these speakers use a different set of perceptual strategies than do those who find (3-6) unacceptable. I'm not convinced that for this case at least there is any more at issue than a merely terminological question.[19] For our purposes, what is important is that the violations exhibited in (3-6) be given a uniform treatment.

I shall formulate the constraint which blocks (3-6) as

a constraint on variables, thus providing a uniform mechanism which blocks the generation of sentences like (3-6). Although I imagine that this constraint can be formulated in terms of perceptual strategies, the formulation given by Langendoen et al. is presented only for the case which involves Wh-Movement, and a general reformulation raises questions which go beyond the scope of our inquiry here.[20]

I state the constraint below in (31):

31) Given a structure of the form[21]



if the string'V (PRT)' is represented by a variable in the structural description of a transformation, the string'V (PRT)NP (PRT)' must also be represented by that variable.

This formulation raises several issues. First, as it stands, the constraint is language-specific. If a formulation is to be given which is independent of any particular language, it will be probably have to be formulated with reference to certain typological properties of the languages for which it is found to hold (if any besides English exist), for it is unlikely that such a constraint would apply if e.g. the two NP's mentioned in (31) are marked morphologically for distinct cases. I don't see that an account based on perceptual strategies fares any better here, however.

Second, it may be that the constraint as formulated is too weak. In particular, there are difficulties with respect to extraction manifested by several of the (few) verbs which occur with the so-called 'naked infinitive' (modals aside). Thus, there seems to be a distinction in acceptability between:

32) Who did you see Liston fight?

and

33) ?*Who did you see fight Liston?

A problem here is that the difficulties involved in extraction do not seem to be uniform across the various cases of this structure. Whereas extraction of the NP to the right of watch (in the naked infinitive structure) seems totally impervious to movement rules, in the case of let, it is sometimes possible:

34) *Who did you watch cross the street.
35) The man you just let slip from your grasp, Watson, is the most diabolical criminal mind in all of England.

Nevertheless, it may be the case that a general formulation of the constraint given in (31) would cover both the double object construction and the relevant cases of the naked infinitive construction.

Finally, we note that a formulation of this constraint in terms of perceptual processing rather than as a constraint on movement might be preferable for the following reason:

some violations of the kind produced in (3-6) seem to be worse than others; furthermore, I have the feeling that there is a difference in the degree of ungrammaticality of sentences of this type and the degree of ungrammaticality involved in the violation of Ross's (1967) island constraints. A reformulation of (31) in terms of perceptual processing may provide a natural framework in which to account for this difference.[22]

4.6.0 Summary.

If an unbounded movement rule applies to the first of two NP objects, violations are produced. A transformational approach to the dative alternation cannot account for such violations. Nor is the postulation of global derivational constraints of any help, since the violations in question are related to a certain structure, independent of the origin of that structure. Accounts based on structural ambiguity also fail, for they are unable in principle to deal with the asymmetry between movement of the first NP of a double object structure and movement of the second.

I have proposed a constraint on the conventions for analyzing phrase-markers in terms of variables which will account for these violations. Whether this constraint can be given a language-independent formulation, and the exact relation of this constraint to perceptual strategies for sentence-processing are matters which I leave to future research.

5.0 Summary.

The phenomena investigated in this chapter provide no evidence in favor of a transformational theory of the dative alternation. In some cases, our results are not entirely unanticipated. Thus, the output condition on pronouns discussed in section 1 can be traced back to a proposal made by Ross (1967), and our discussion of the movement constraint on the indirect object is based in part on facts originally noted by Kuroda (1968). Insofar as I have made use of previous proposals, however, I have tried to strengthen existing arguments, and where I have been able to, I have constructed new ones.

Although the main burden of this chapter has been to demonstrate the lack of any non-semantic evidence in favor of a transformational theory of the dative alternation, the arguments I have given bear on wider issues in linguistic theory. We will consider two: the 'accessibility hierarchy' proposed by Keenan and Comrie (1972); and the theory of relational grammar proposed by Perlmutter and Postal in various lectures.

5.1 Keenan and Comrie (1972) claim that there is a universal hierarchy of NP positions as follows, where '$\geqslant$' is interpreted as 'greater than or equal to inaccessibility' to rules such as relative clause formation, WH-movement, clefting, and so on:

1) Subj $\geqslant$ DO $\geqslant$ IO $\geqslant$ OPrep $\geqslant$ Poss-NP $\geqslant$ O-Comp-Particle

Essentially, their claim is that if a given NP position is

accessible to extraction, then any NP position which is greater than or equal to the given NP position in accessibility is also accessible to extraction. For example, if the position they identify as 'OPrep' is accessible to extraction, then, according to their theory, the indirect object ('IO'), the direct object ('DO') and the subject ('Subj') must be as well.

But this claim is clearly falsified by the English facts concerning the accessibility of the indirect object: in English, objects of prepositions ('OPrep') are accessible to extraction although indirect objects are not. Thus, either the hierarchy must be revised in some way or the claim that it has universal application must be weakened.

5.2 Consider now the proposals of Perlmutter and Postal concerning what they call 'relational grammar'. One of the central claims of this theory is that cyclic rules are defined in terms of grammatical relations such as subject ('I'), direct object ('II'), and indirect object ('III'). (There is the possibility of terminological confusion here: throughout this work I have used the term 'indirect object' to refer to the first NP in the structure X-V-NP-NP-Y, whereas Perlmutter and Postal use this term to refer either to this NP position or to the objects of various prepositions where a 'dative' interpretation is involved.) Thus, the passive is formulated as the rule 'II-→I', and the dative movement rule is formulated as 'III-→II'. Furthermore, they propose that if an NP_i fulfilling

one of these grammatical relations is replaced in the course of a derivation by some NP_j, then NP_i ceases to bear any grammatical relation to the sentence. This analysis is inconsistent with the treatment of the passive proposed in section 2, and if my arguments for the formulation of the second passive are correct, they provide a serious counterexample to Perlmutter and Postal's theory.

To see this more clearly, consider two possible derivations within this theory of sentences like (1):

1) A book was given him.

On a relational theory, this sentence will have an underlying structure roughly corresponding to 'PRO gave a book to him', in which the grammatical relations are as follows: I='PRO'; II='a book'; III='him'. If the dative rule applies before the passive rule, (1) is ungenerable, since the dative rule is stated as 'III-->II' and a consequence of this is that 'a book' ceases to be the direct object upon its replacement by 'him'. Thus if the dative rule applies first, the application of the passive rule can only produce the sentence

2) He was given a book.

Consider the alternative application of the rules, however. Applying the passive rule first, we get the right NP into the subject position. But what do we do about the preposition?

If we now allow the dative rule to apply, serious problems arise. First, the pronominal restriction that we noted in section 2 must be dealt with--i.e. it's not clear that the usual dative rule will suffice. Second, this theory offers no way to account for sentences like My sins were forgiven me, whose derivation does not involve the dative rule. Furthermore, it is not at all clear how to avoid generating sentences like (3b) from (3a) on this account, since presumably the same structural considerations apply:

3a) As far as the United Fund is concerned, I think everyone should give to them.

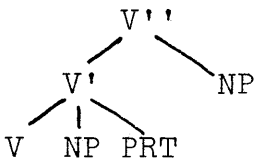
3b) *As far as the United Fund is concerned, I think everyone should give them.

In short, the problem of the second passive is not only not resolved by the theory of relational grammars; the existence of such a phenomenon poses a very serious problem for this theory.

Appendix to section 3: A speculation on some observed tendencies.

An alternative to the generation of the verbal particle in the double object construction is the following.

1)



There are several reasons for considering such a possibility.

An obvious advantage is that it generates immediately the preferred surface structure particle position, and the more marked order will arise through the application of a rule which shifts the left-most NP to the right of the particle (we still want to avoid the postulation of a right-left particle movement rule).

2) Whip me such honest knaves. (Othello)
3) Rob me a couple of banks, my boy, and I might consider your proposal.

In that discussion, we pointed out two peculiarities of this construction, or at least two tendencies to be peculiar. These were concerned with the fact that in such examples the dative NP is restricted to pronominal form and the fact that such constructions seem to occur with far greater ease in sentences with what we called a 'hortatory' illocutionary force (and reports of such speech acts) than in sentences with

different illocutionary forces. A sentence like the following, which violates both of these canons, sounds very strange to my ears:

4) ??If it had only occurred to Lefty to rob Capone a couple of banks, he might have succeeded in gaining the gang leaders confidence.

In standard literary English, this construction has a somewhat marginal character. Nevertheless, we suggested that a way to deal with it is to generate a pronominal position to the immediate right of the verb--effectively restricting this position to pronouns--and associating with this structure a rule which would ensure that this (benefactive) pronoun would receive an interpretation compatible with only the appropriate range of contexts. Since it is not our purpose here to present a theory of speech acts, we left the formulation of this rule open.

What I would like to suggest now is that many of the instances of the intersection of the verb+particle construction with the double object construction share some of the properties of this benefactive construction. There are several indications of this.

The first is that in many cases, the results of applying the passive transformation to structures of the form '...V-NP-PRT-NP' are surprisingly bad. Thus, compare the following cases:

5 a) I passed him the salt.

b) He was passed the salt.
c) I passed him down the salt.
d) ?*He was passed down the salt.

6 a) They handed me the wrench.
b) I was handed the wrench.
c) They handed me up the wrench.
d) ?*I was handed up the wrench.

7 a) They read me the figures (over the telephone).
b) I was read the figures (over the telephone).
c) They read me off the figures.
d) ?*I was read off the figures.

8 a) They sent me the wrong order.
b) I was sent the wrong order.
c) They sent me over the wrong order.
d) ?*I was sent over the wrong order.

It might be suggested that the governing factor in the ungrammaticality of such examples is the difficulty in real-time processing of determining the underlying grammatical relation of the surface subject. The fact that it could be either direct object or indirect object would, on this account, unbalance the perceptual processing mechanism. And presumably this possibility is strengthened by the possibility of analyzing the string '...P NP...' as a prepositional phrase. Although this might be plausible in certain cases, e.g. I was tossed over a barrel, such a theory predicts that there is a strong distinction between this case and a sentence like (7d), where there is no reason to suspect that the derived subject could be construed as the direct object. (In some cases, in fact, there is no difficulty whatsoever in the passive: e.g. I was given back the money. For reasons which I do not understand,

these sentences are distinct from the cases under discussion.)

If it could be shown that in the cases in which the passive does not apply easily, the indirect object in fact has a benefactive interpretation, the failure of the passive could be assimilated to the failure of the passive in other cases of the for-dative.

Although I am not able to show this definitively, we note first of all that in some cases a pronoun appears more easily as the indirect object than does a full NP. Furthermore, in many cases, these constructions seem much more idiomatic in imperative sentences than in declarative ones. Both of these tendencies--they are probably no more than that--lend some credence to the partial assimilation of these cases to the benefactive construction discussed above with respect to (2-3). Let me give a few examples, in which the violation of these criteria lead to a sharp decrease in idiomaticity.

9) Hand me over that gun, Capone.
10) ??If you hand Max over that gun, Capone, things will go easier for you.
11) John refused to toss anything up to me.
12) ??John refused to toss me up anything.

13) George was kind enough to toss me up a beer.
14) ??George was rude enough to toss me up a beer.

If there are differences of this kind, it is extremely difficult to control the applicability of a transformational relation between e.g. (13) and (14). Furthermore, an attempt to paraphrase (13) by means of a to-dative sentence fails if (13)

has the kind of benefactive force we are imputing to it. An attempt to paraphrase (13) by means of a for-dative sentence fails since it misses the point that the inside object is the motional goal:

15) George was kind enough to toss a beer up for me.
16) George was kind enough to toss a beer up to me.

It is partly for this reason that an assimilation of these cases to the benefactive dative construction is suggestive, since the interpretive principles which I proposed above in the case of sentences with rob offers a natural way to handle the constraints on occurrence of such constructions.

Suppose that this assimilation were attempted. Then sentences like (9), (11), and (13) would contain as a sub-tree, the structure presented in (1). There is an interesting side-effect of this hypothesis, which concerns the position of the particle. Given an underlying structure which contains (1), the particle movement rule given in the above chapter will apply to move the particle to the right. And since in this structure only pronouns will be generated under V', we should expect to find in some cases a distinction between surface structures of the form '...V-PRO-NP-PRT...' and surface structures of the form '...V-NP-NP-PRT...', where the first NP is not pronominal. And in fact it seems that such distinctions exist:

17) Can you send me some of those cigars over?
18) ??When are you going to send Reginald some of those cigars over?

19) Hey, toss me that wrench up, will you?
20) ??Hey, toss Marilyn that wrench up, will you?

Although judgments of the precise grammatical status of such sentences are not terribly reliable, nevertheless the relative difference exemplified in these pairs seems fairly clear. And it is this difference which our proposal offers the possibility of an account of.

FOOTNOTES TO CHAPTER II.

1. For example, we have nothing to say about the problems of reflexivization, primarily because the behavior of reflexives is not uniform over the range of the dative alternations. A variety of contrasts seem to exist, but it is difficult to see how a transformational account could even describe them in a uniform way. Consider the following contrasts, for instance:

i) Faust sold himself to the Devil.
ii) *Faust sold the Devil himself.

iii) *John gave a present to himself.
iv) John gave himself a present.

v) He's been telling stories to himself.
vi) He's been telling himself stories.

In particular, if (iii) and (iv) are related transformationally, and (v) and (vi) are related transformationally, any theory based on the dative alternation that rules out (iii) should rule out (v), while a theory that allows (v) should allow (iii). Thus, we shall not consider this problem, as it seems to have no bearing on the issue.

Similarly, we shall not take up the problem of the relation of the dative constructions to the possibility of a verb's occurring with an infinitival complement. Consider the fact that the verbs promise, offer, and owe occur in both the to-dative construction and the double object construction.

Furthermore, each of these verbs occurs with an infinitival complement. Yet in this latter case, these verbs betray striking syntactic differences:

vii) John promised Albert to leave.
viii) *John promised to Albert to leave.
ix) *John promised it to Albert to leave.
x) John promised to leave.

xi) *John owes Albert to leave.
xii) *John owes to Albert to leave.
xiii) John owes it to Albert to leave.
xiv) *John owes (it) to leave.

xv) *John offered Albert to leave.
xvi) *John offered to Albert to leave.
xvii) *John offered it to Albert to leave.
xviii) John offered to leave.

I know of no theory which accounts for these distinctions, nor do I see how they bear on the alternatives that face us. Therefore I shall ignore them: Wovon man nicht sprechen kann, darüber kann man schweigen.

2. Almost every case, that is. A counterexample may be found by consulting the first sentence of the third paragraph of the acknowledgment printed on the back of the title page of Aspects of the Theory of Syntax (Chomsky, 1965, p. iv). I quote the relevant portion of this sentence below:

> xix) ??The research reported in this document was made possible in part by support extended the Massachusetts Institute of Technology, Research Laboratory of Electronics, by the...

Because of its questionable grammatical status, however, I take the effect of this example on our generalization to be minimal.

3. Although I agree with Williams in principle, I think that his examples might have been better chosen. His first example (*The children were sung a song) is plausibly related more closely to a sentence with a for-dative than to one with a to-dative. His second case (John was thrown a pillow) seems to me better than he indicates. Because of this, I have chosen different examples.

Williams has also suggested that the distinction in the passive construction between the to-dative and the for-dative might be related to the obligatoriness vs. optionality of the dative NP with respect to any given verb. Although this idea is interesting, I do not think that it is right. For instance a dative NP is optional with bring, yet the passive is possible: The King was brought his pipe and slippers.

4. A relaxation of the condition that only a single particle may intervene between the direct object and the to- or for- phrase is needed independently to account for such sentences as Toss me back up the hammer please.

5. Note that the formulation of the surface condition is no simple matter, since there exist cases in which the direct object occurs to the right of right+PRT, presumably because of the operation of Heavy-NP Shift: I'll send right over the stuff you ordered, Mr. Jones.

6. Cf. also Jackendoff (1973).

7. I say "under certain conditions" because of pairs like:

xx) John came { back / in / out } exhausted.

xxi) *John came exhausted.

Evidently, the addition of the particle is crucial here. I am unable to explain why.

8. Note that whatever account is chosen will have to deal with the fact that in simple intransitive cases, the particle does bear the nuclear accent: John fell down[1].

9. Infelicitously named because no characterization in terms of 'heaviness' has ever been given--or is likely to be given--which accounts for the application of this rule. Consider

examples like

xxii) We found in the barn, a stick.

The phrase a stick is unlikely to count as 'heavy' under anybody's definition.

In part the difficulty here may be due to the fact that more than one rule is in effect, although if that is the case, it would appear that both rules perform the same operations. Nevertheless they may be distinguished by intonational effects. Thus, I have inserted a comma in the above example to indicate the fact that when the sentence is pronounced, barn is prominently stressed and there is an intonation break between barn and a stick. In the case in which the shifted NP is significantly 'heavy', 'complex', 'long', etc., such intonational effects are not necessary:

xxiii) We found in the barn several pieces of evidence which indicate that the defendent was actually at the scene when the crime occurred.

It's not clear that this distinction is indicative of the existence of two rules. Alternatively, there may be only one rule in operation and the intonational patterns may be generated by independent aspects of English prosody.

10. Cf. Jackendoff (1973) for futher evidence that such phrases form single constitutents.

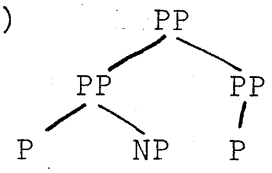
11. Jackendoff credits this insight to Emonds.

12. The situation is actually somewhat more complex. Consider Jackendoff's base rules for prepositions, which include the following cases:

xxiv) PP --→ P
PP --→ P PP
PP --→ PP PP
PP --→ P NP

These rules should generate phrases of the form

xxv)



but as far as I can tell, there are no such expressions in English. Compare:

xxvi) Max pushed Harold off the board into the water.
*Max pushed Harold off the board in.
Max pushed Harold in.

One way to handle this problem is to write the base rule as follows:

xxvii) PP --→ P*(NP)

A consequence of this formulation, however, is that we cannot generate as a constituent complex phrases of the type <u>from here to there</u>.

13. The restriction to unstressed pronouns is important. Bolinger (1971) has presented cases in which pronouns may

plausibly follow the particle, but only if the pronoun bears a contrastive accent. Some of Bolinger's examples:

xxviii) The lady bade her take away the fool; therefore, I say again, take her away. --Sir, I bade them take away you.
If you want to ease your mind by blowing up somebody, come out into the court and blow up me.
He's just lucky I ain't sewin' up him.

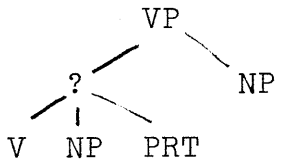
14. The situation here is actually more complicated, and may involve a distinction between the verbal particle and the other two types. Since my point is only to show that the intonational properties of the sentence play a role in determining the position of the particle, I shall not attempt a fuller analysis of this phenomenon.

15. In the discussion of Emonds's proposal, we have gone over the various accounts possible on a transformational account of the dative alternative of the placement of the particle. With respect to alternatives in which the particle is not generated solely to the right of the direct object, the general situation is as follows: in order to maintain the syntactic distinctions discussed earlier, we shall want to avoid a right-left particle movement rule: in order to generate all three particle positions, then, the verbal particle will have to remain in the left-most position until after the dative movement rule has applied; thus, no special advantage with respect to the positioning of the particle is available unless the to-dative rule is formulated separately from the

for-dative rule, in which case a distinction may be maintained. But we may just as freely suggest a different base structure for the for-dative cases. Cf. footnote 16 below:

16. An alternative to (137) is discussed in an appendix to this chapter. This alternative is based on the following structure:

xxix)



17. In some cases, the double object construction with the particle does not maintain the same range of interpretations as the prepositional dative construction. For instance, the sentence

xxx) John offered me back the red rose.

can only be construed as a reciprocal offer, i.e. back has the same interpretation it has in sentences like John hit Harry back. In contrast, the sentence John offered the red rose back to me is true of a situation in which I had given John the rose and he offered to give it back to me. (Note incidentally, that back is not a verbal particle: *John offered back the red rose to me.)

Similarly, in some cases, we find a particle occurring in the double object construction which does not occur at all in

the prepositional construction, e.g. ?Send me by some of those delicious tomatoes of yours vs. *Send some of those delicious tomatoes by to me.

The particle along has somewhat idiosyncratic properties. When it occurs in the double object construction, it seems to be the case that it is always construed as an elliptical form of the complex prepositional phrase along with x,

xxxi) While you're at it, why don't you send me a couple of those Cuban cigars along.
xxxii) Take John a couple of these cigars along.

In the first case, the cigars are to be sent along with whatever else the addressee is sending; in the second, the addressee is asked to take some cigars along with him.

18. Whether Wh-Movement and Relativization are to be distinguished or not is of no importance here.

19. Langendoen et al. argue that it would be desirable to account for the violations exhibited in (3-6) on the basis of perceptual strategies in part because they believe that the only alternative is the postulation of a global derivational constraint. In section 3, I have shown such a constraint to be inadequate. Furthermore, the constraint on performance that they formulate is, if properly emended, equivalent to the movement constraint formulated below in (31). In particular. it is hard to see whether any conceptual advantages are achieved by casting their constraint in terms of a theory of

performance rather than competence: they certainly provide no evidence for this, except the undesirability of language-particular constraints on transformations. I fail to see how language-particular perceptual constraints constitute a great leap forward, however.

The argument that some speakers find sentences like (3-6) both grammatical and acceptable is also far from compelling. The authors note (p. 452) that "Judgments that expressions are acceptable do not guarantee that they are grammatical....there are many expressions for which speakers do not give consistent acceptability judgments; such inconsistency has misled many linguists into postulating the existence of 'dialects' for which there is often no geographic, socioeconomic or other language-independent basis....". The authors then constructed an experiment to test the hypothesis that double object constructions to which an unbounded movement rule has applied to the first object are in fact grammatical. One would think that in order to avoid the problems noted in the above cited passage, the authors would have constructed the experiment in such a way that the subjects of the experiment would not be asked to perform a linguistic task, but rather in the course of carrying out some other task, linguistic data of relevance to the hypothesis would be generated. Labov has carried out experiments of this kind dealing with such topics as scope order and the differences between the '<u>get</u>-passive' and the '<u>be</u>-passive' (reported in a lecture at MIT, spring 1974).

However, the various tests the authors constructed all revolve around the performance of linguistic tasks. Furthermore, there is no control on intonation, no control on the impact of using definite as opposed to indefinite NP's, no examples involving pronouns. Furthermore, the crucial sentences are all of a rather marginal character. Finally, the argument that dative questions ('DQs') are acceptable is based on the following crucial step: "If...the S's response indicates that he or she construes the postverbal noun phrase in an ambiguous DQ as a direct object, there is no non-DQ model that he or she could possibly be using as a basis for that response; hence the acceptability of DQs for that S." (Footnote 16, p. 462.) But the authors have included precisely such a model: namely, the ungrammatical sentence Who(m) did you direct the person?

In view of these defects, one can hardly consider the conclusions drawn from this study compelling.

20. In their formulation of the perceptual rules, Langendoen et al. make crucial reference to the fact that the noun phrase whose grammatical relation is at issue is marked as interrogative. This marking is irrelevant for cases in which the NP has been moved by Topicalization or been affected by Tough-Movement (or Tough-Deletion, as the case may be). A more general formulation, then, would have to subsume under a single case the notions 'having been moved over a variable'

and 'controlling an NP over a variable'. A general theory of perceptual strategies would thus need the means to identify all such cases. The construction of such a general theory being a rather large undertaking, we shll rest content with our formulation of a movement constraint, which covers precisely the same range of facts.

21. It is noteworthy that this constraint cannot be formulated, as far as I can tell, simply by reference to string-conditions (without hierarchical information). One reason for this is that the constraint does not apply to sentences which contain predicate nominals:

xxxiii) The man who everyone had considered a genius was a spy.

If the constraint is formulated in terms of the string '...V-NP-NP...', such sentences would be ruled out since they satisfy this structural description.

One might, however, attempt to formulate (31) in terms of an output condition. This is only possible in a theory which incorporates the trace theory of movement (cf. Fiengo, 1974, and the references cited there). In order to maintain the distinction between the passive and unbounded movement rules, the output condition must include mention of the subject of the sentence. This can be done as follows, ignoring for expository purposes the point made above with reference to string conditions:

xxiv) Rule out any structure of the form

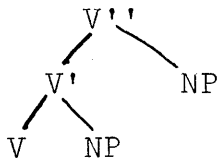
$X\text{-}NP_1\text{-}(Adv)(Aux)V\text{-}t\text{-}NP_2\text{-}Y$

unless NP_1 binds t.

I will not attempt to choose between (31) and (ii).

22. If the double object constructions have the structure

xxxv)



it may be possible that what Chomsky (1973) refers to as the 'subjacency condition' may be capable of formulation in such a way as to make (31) or its equivalent unnecessary. The crucial distinction would then be that the passive moves the (first) NP a lesser distance up the tree than do the rules which induce violations.

III. The Status of the English Dative Alternation

0. The purpose of this chapter is to attempt to determine the proper way in which the dative alternation should be integrated into a grammar of English. In order to carry out this investigation, we shall formulate two general hypotheses, review the information at our disposal, and raise the question of which hypothesis more adequately accounts for our knowledge of the dative alternation.

1. The possibility of choice concerning the treatment of the dative alternation arises in the following way. Given a conception of grammar which includes a syntactic level of deep structure and a syntactic level of surface structure, there should be a distinction between the properties of deep structure phrase-markers and surface structure phrase-markers. Consider now Anderson's (1971) discussion of the so-called 'spray paint' cases. These involve alternations of the type illustrated below:

1) The man sprayed paint on the wall.
2) The man sprayed the wall with paint.
3) John emptied some gas from the tank.
4) John emptied the tank of gas.

On the basis of certain aspects of the interpretation of these sentences, Anderson concluded that both manifestations of this alternation were generated in the base. The argument is essentially of the following form: there exists a distinction

in truth-conditions concerning the members of such pairs; this distinction cannot be stated at surface structure, since a variety of rules can obliterate the relevant structure; therefore, deep structure is the appropriate level at which to state this distinction. Anderson also offered a variety of other evidence to support this conclusion, including facts concerning subcategorization.[1]

The acceptance of Anderson's conclusion does not force us to ignore the alternation altogether. In particular, there remains a syntactic question: given a structure NP_1-V_i-NP_2-P-NP_3, under what conditions does there exist a corresponding structure NP_1-V_i-NP_3-P-NP_2? I will assume that such a question deserves consideration. Regardless of the precise details of this rule, however, Anderson's conclusion forces us to state the alternation as part of the lexicon. (Cf. Jackendoff, 1974a, for further discussion.)

If this is correct, then evidently the rule in question will specify an operation on subcategorization frames. I will assume that this rule is to be construed as a redundancy rule which lessens the cost of lexical information, along the lines of Jackendoff's proposals concerning morphology. Thus, the rule will have roughly the following form:

> 5) If a verb is subcategorized for the structure NP_1 ___ NP_2 LocP NP_3, an additional subcategorization of the form NP_1 ___ NP_3 <u>with</u> NP_2 may exist without adding to the information content of the lexicon.

Insofar as idiosyncratic information must be added, it will

add a proportional cost.

Such a rule has several attractive aspects. First, rules of this kind are (ipso facto) restricted to operations on material specified in subcategorization frames. Thus no rule of this kind could take a noun phrase out of a purpose clause, for instance, and make it the subject of the sentence. Second, such rules are designed to account for cases of syntactic alternations in which semantic equivalence is not necessarily preserved. Thus, they are concerned with cases in which not all properties are invariant. In view of the way such rules are to be construed, we have an immediate way to build markedness considerations into the rule itself. Finally, note that all such rules will of necessity be structure-preserving, since in every case the structures related by the rules must meet the conditions specified by one phrase structure rule expansion in order to be generated. We return below to the question of whether all structure-preserving rules can be formulated as lexical redundancy rules.

2.0 The existence of lexical rules of the type just discussed raises the question of whether the dative alternation should be stated as a lexical rule of this kind or as a transformation which maps one (full) phrase-marker onto another. Given the plethora of technical devices available, it is not immediately clear how to resolve this question. The decision as to whether the dative alternation should be considered a

phrase-marker transformation or a lexical redundancy rule hinges then not so much on questions of feasibility as on questions of appropriateness.

Furthermore, from a general methodological point of view, if both types of rules exist, we should like to place enough restrictions on rules of each type so that for any given alternation, we would be forced to consign it to the domain of one type of rule or the other without the possibility of choice on our part. In line with this principle, questions such as the richness of information necessary to the statement of the rule arise.

3.0 At this point, it is useful to recapitulate the general characteristics of the dative alternation, such as we have been able to determine them.

First, on the basis of several considerations, both the double object construction and the prepositional construction are base structures of English. I.e. there are phrase structure rules of the form

6) VP -→ V NP PP...

VP -→ V NP NP...

Obviously, part of our investigation is concerned with the question of what set of surface sentences is generated in each

of these base structures.

Second, if assuming for the moment that there is a transformation which maps phrase-markers of the form X-V-NP_1-P-NP_2-Y into phrase markers of the form X-V-NP_2-NP_1-Y (or vice versa), is there a set of significant properties which distinguish base structures of the form V NP NP from derived structures of the form V NP NP? The major conclusion of Part Two is that no such distinctions exist.

Third, there is the question of what sort of conditions are necessary to the statement of the dative alternation. If our formulation of the domain of the dative alternation at the end of Part One is correct (insofar as it goes) there are several noteworthy characteristics to be considered. One concerns the morphological condition that seems necessary to distinguish e.g. get from obtain and procure, buy from purchase, give back from return, etc. Another, of a more speculative nature, concerns the possibility of excluding verbs like float and drift from the domain of the dative alternation on the basis of insufficient control of the path of the direct object.

Fourth, there is the troublesome question of the semantic equivalence of the members of pairs of sentences related by the dative alternation. If such distinctions can be defended, obviously the dative alternation (for these cases at least) cannot be stated as a (phrasemarker) transformation in a grammar in which all semantic interpretation

is to be carried out at the deep structure level. The possibility of surface interpretation, however, complicates the question.

4.0 In view of this evidence, there are a variety of considerations which favor the treatment of the dative alternation by means of a lexical redundancy rule over a treatment by means of a transformational operation on phrase-markers. No single one of these considerations is in and of itself compelling. Yet they are each worth considering, in that they are each concerned with ways in which lexical redundancy rules can be distinguished from transformations, and, as I pointed out above, it is of interest to articulate and distinguish these two types of rules.

Nevertheless, in certain respects, the two alternative hypotheses formulated here are equivalent. For example, we have not succeeded in specifying exactly the domain of the dative alternation -- although certain ways in which the domain of the alternation can be restricted have been suggested (cf. Part One, Sections 6-7). But neither theory developed here provides immediate insight into how certain problematic cases are to be treated, e.g. the distinction between raise and lift, on the one hand and lower on the other. Thus, certain difficulties are common to both hypotheses. On the other hand, given that the operation performed on either hypothesis is essentially

identical, it is evident that each theory will be able to deal with a wide variety of facts in the same fashion, e.g. selectional similarity. It is for this reason that I emphasized that the choice between the two theories hinges on matters of appropriateness rather than feasibility.

4.1 Consider first the fact that there appears to be no syntactic advantage gained by postulating a phrase-marker transformation. In other words, with respect to syntactic properties, double object base structures seem to be indistinguishable from those double object structures which are putatively derived by a phrase-marker transformation. On methodological grounds, this fact, if true,[2] provides an argument in favor of the lexical redundancy rule hypothesis. The argument is simply that the lexical treatment entails this state of affairs,since on this account all manifestations of the dative alternation are present in deep structure. Whereas the transformational hypothesis -- though consistent with this state of affairs[3] -- is consistent with other possible states of affairs. For this reason, the lexical theory has consequences that the transformational theory does not entail. The lexical theory is thus stronger -- i.e. more falsifiable -- and therefore preferable.

4.2 A second consideration which bears on this question concerns the status of the morphological constraint discussed in Part One, Section 6. There is of course a certain amount of leeway in how this restriction is to be incorporated into the statement of alternation. On a transformational account, the appropriate way to incorporate this constraint is by means of rule features and a redundancy rule, since the internal structure of words is not information that in general transformations need have access to. In particular, we would like to rule out the possibility of rules like topicalization or wh-movement being subject to morphological conditions. No such consideration applies in the case of the lexical treatment, since it is a property of the lexical entry that it brings together a variety of morphological, syntactic, and semantic information concerning words. Thus, on the lexical account, the morphological condition can be written into the rule itself without invoking redundancy rules. It should be noted that the construction of verb and particle combinations is subject to a similar condition, i.e. whereas we find combinations like buy up, purchase up does not exist. Although we are not able to express these two conditions as a single generalization, it is preferable to treat rules with similar properties at similar places in the grammar. By assigning the dative alternation to the lexicon, this goal is partially

achieved. This provides another indication that the lexical treatment is to be preferred.

4.3 We have seen thus far that certain methodological considerations suggest that the lexical hypothesis is to be preferred. Let us now take up the question of whether semantic considerations play a role in this decision.

4.3.1 I argued above in Part One § 6 that there exist cases in which the truth conditions of certain pairs of sentences related by the dative alternation are distinct, particularly in the case of the _for_-dative alternation, though marginally in the case of _to_-dative alternation as well. On a transformational account, such distinctions of necessity will have to be handled by rules of surface[4] interpretation, and it is worthwhile to inquire into the nature of such rules.

If we consider the general question of what semantic properties are affected by transformations, there are a variety of answers. In the general case, the functional contribution of various constituents to the truth of the sentence of which they are parts is not affected. It is this fact which lies behind intuitions concerning 'logical subject' and 'logical object' with respect to the passive transformation, for example. On the other hand, the property of coreferentiality is obviously affected by transformational movement rules, as are, apparently, certain facts concerning

quantifier order. (cf. Wasow, 1972; Kroch, 1974).

Let us assume that the appropriate level for the interpretation of anaphoric relations and quantifier order is surface structure (or shallow structure). Ideally, if we are to maintain a split between aspects of interpretation which are relevant at deep structure and those which are relevant at surface structure, we would like the split between those two aspects of interpretation to be correlated with the distinction between deep structure properties and surface structure properties. For example, we might impose the following restrictions: rules of surface interpretation are sensitive only to such properties as (relative) order; derived structure cannot take into account such things as the disparate effect of two lexical items which occur in isomorphic structural environments. I'm not sure that such a distinction could be maintained, but it is desirable to impose such restrictions.

Consider now the semantic distinctions discussed in Part One. Note first of all that if there are distinctions to be drawn both with respect to the _for_-dative alternation and the _to_-dative alternation, and if the derived structures of the double object-reflexes of the two prepositional constructions is the same (which I see no obvious reason to doubt), then any rule or rules of surface (or cyclic) interpretation will have to be sensitive to more than merely

derived structures, for there is no clear way of generalizing the differences in truth conditions associated with the for-dative cases and the to-dative cases: in the one case, the distinction resides in how we interpret the intention operator, whereas in the other, we were faced with a problem concerning the 'success condition.' If all of these assumptions are correct, then, treating these semantic differences in terms of surface interpretive rules necessitates that the rules in question have access to either derivational history or lexical information. Either consequence is undesirable.

Second, there is the problem of whether the semantic distinctions in question are general or idiosyncratic. If they are idiosyncratic, they will have to be stated as part of the lexical information concerning the various verbs in question. In other words, if the distinctions we are concerned with are to be handled by surface interpretive rules, the rules will not only have to have access to the lexicon -- the lexicon itself will have to specify that if such and such a verb occurs in such and such a derived structure, a certain interpretation is assigned. But this is equivalent in information content to the lexical theory, except that a transformation is postulated in addition to the specification of double lexical entries. In fact, then, if the semantic distinctions are idiosyncratic, the transformational

hypothesis seems to have to duplicate the essential aspects of the lexical approach. But then the transformation itself is superfluous. Since the distinction concerning the to-dative alternation does seem to be idiosyncratic, it appears again that there is a slight reason to opt for the lexical approach.

4.3.2 It is to be noted that given the undertain status of semantic interpretation, as well as the subtle nature of the semantic distinctions at issue, arguments based on the amount of semantic information that must be stated are not terribly strong. For example, they depend in part on the assumption that surfact interpretive rules should be restricted from referring to lexical information -- an assumption which at the moment is at most programmatic.

There are other indications, however, -- related to questions of interpretation -- which also indicate that the lexical solution is to be preferred. Consider the fact that many verbs which occur in both the double object structure and the prepositional structure develop extended senses which are available only in the double object construction. The most obvious indication of this is the ability of these verbs to occur with abstract subjects.

7a) The victory got Ali a shot at the title.
 b)*The victory got a shot at the title for Ali.
8a) The victory guaranteed Ali a shot at the title.
 b)*The victory guaranteed a shot at the title to Ali.
9a) The development of new ocean-mining techniques

offers the world a new source of raw material.
b)*The development of new ocean-mining techniques offers a new source of raw materials to the world.

One can argue that the new senses involved here illustrate an extension from the first two types of reading discussed in Part One to the third type of reading. (Note that a shot at the title contains an instance of a 'predicative noun'.) Such extensions do not seem to be available to verbs which do not occur in the double object construction:

10) The victory procurred a shot at the title for Ali.
11) The victory obtained a shot at the title for Ali.

Evidently, whatever process is responsible for such extensions is in part a lexical process, in that new conditions on insertion are involved (i.e. the possibility of abstract subjects). Furthermore, one would like to relate new extensions to the fact that the double object construction is subject to similar splits of interpretation elsewhere. On the lexical approach, there is a natural way to do this -- namely, such an extension is possible if a verb is subcategorized for the double object construction. On a transformational account, however, if the process that is responsible for this extension is itself a lexical process, the only way it can distinguish between verbs like get and verbs like obtain and procure is by rule feature, since none of these verbs will be subcategorized for the double object construciton. But this seems to miss the point,

since the crucial fact is not whether or not a verb undergoes the rule or not, but the structural configuration in question. Again, this involves the problem of appropriateness, rather than feasibility, but I think we can construe data of this sort as providing another slender piece of evidence in favor of the lexical nature of the dative alternation.

5.0 All of the considerations discussed above suggest that the lexical approach is to be preferred to the transformational approach. The evidence in favor of this decision is not overwhelming. But this conclusion suggests that we attempt to articulate further the distinctions between the two types of rules considered. Although we shall not be able to pursue this investigation further here, the questions that arise offer promising lines of future research which may not only bear directly on the problems considered in this work but be of some intrinsic interest as well.

5.1 There are several interrelated questions that are of immediate interest.

1) the domain of lexical rules of the kind suggested here is smaller than the domain of transformations, since the domain of lexical rules is only material contained in a lexical entry. Is it possible to exclude transformations from operating in this domain?
2) all operations performed by lexical rules must be structure preserving (due to the definition of this term). Is it possible to treat all structure-preserving rules

can be treated as lexical rules?

3) Is there any connection between the notion lexical rule and the distinction between rules that have lexical exceptions and those that do not?

To some extent, the resolution of these and similar problems is contingent on the treatment of the passive, and a formidable obstacle stands in the way of considering the passive a lexical rule of the kind envisioned--namely, its interaction with there-insertion. Other questions of interest arise in the course of pursuing these matters further. For example, the problem of characterizing the possible structural relations amenable to treatment by lexical redundancy rule revives the problem of the depth and width of subcategorization frames.

It is to be hoped that in pursuing answers to these questions, our insight into the nature of linguistic structure will be increased.

FOOTNOTES

1. It is not impossible, given the trace theory of movement, that the semantic distinctions could be stated at the level of surface structure. There are at least two reasons to retain Anderson's conclusion, however. One is that it's not clear whether traces would be recoverable at surfact structure, rather than being obliterated. Note that the two manifestations of the alternation are structurally equivalent. Given current formulations of the trace theory -- i.e. Fiengo (1974) - the traces would be covered up by the transposed lexical material and therefore not available. A second consideration concerns the evidence from subcategorization that Anderson presents, which is not statable in terms of surface structure.

2. We are of course not claiming that pairs of sentences related by the dative alternation are identical in syntactic properties. This is obviously not the case. For instance, there are distinctions concerning reflexivization, as in the following:

i) Faust sold himself to the Devil.
ii) Faust sold the Devil himself.

Although I have no adequate account of such facts, I would like to point out that it's difficult to see what insight

into this problem is provided by the postulation of a phrase-marker transformation, in a way that distinguished this treatment from a lexical treatment.

3. I.e. if the dative alternation is ordered before other rules that affect the relevant structures. Note that Williams's (1974) ordering hypothesis does not affect our point, since more than one rule is operative in the relevant domain (as he defines domains).

4. Or cyclic - the distinction is irrelevant to the point.

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