Richard K. Larson

On the Double Object Construction

Barss and Lasnik (1986) discuss certain asymmetries in double object constructions, such as (1a,b):

(1) a. John sent Mary a letter.
b. I promised Felix a new set of golf clubs.

They observe facts suggesting that the second NP (*a letter, a new set of golf clubs*) is in each case in the domain of the first, but not vice versa. These results conflict with standard views about the syntax of double object sentences and appear to raise problems for the view that "α is in the domain of β" should be explicated in terms of the structural notion of c-command.

In this article I present an analysis of the double object construction that implements a proposal about dative structure first suggested by Chomsky (1955/1975). According to this view, a simple dative like *John sent a letter to Mary* derives from an underlying form in which the verb and its indirect object make up a constituent that excludes the direct object. The specific proposal adopted here is that dative complement constructions like *John sent a letter to Mary* involve an underlying clauselike VP whose "subject" is *a letter* and whose "object" is *(to) Mary* (2a); this inner constituent is obscured at S-Structure by an operation of V Raising (2b):

(2) a. John [$_{VP}$ a letter [$_{V'}$ send to Mary]]
b. John send [$_{VP}$ a letter [$_{V'}$ t to Mary]]

With this view of dative complementation, double objects can be syntactically derived by a modern form of Dative Shift. In particular, they can be produced by applying the familiar operations responsible for passive sentences within VP. The former indirect object (*Mary*) becomes a derived VP "subject," and the former direct object (*a letter*)

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assumes adjunct status within V'. As I show, the resulting structure accounts for Barss and Lasnik's facts straightforwardly in terms of c-command and provides insight into various other properties of the double object structure as well.

After briefly reviewing Barss and Lasnik's observations in section 1, I introduce the account of dative complementation adopted here in section 2. In section 3 I present a derivational account of double objects that identifies Dative Shift as Passive, and I show that apparent surface differences between the two operations (morphological marking, Case assignment, and so on) are independently explainable. In section 4 I argue for the connection between Passive and Dative Shift with data from indirect passives and psych-verb constructions, and in sections 5 and 6 I examine English-internal and cross-linguistic constraints on Dative Shift. Finally, I conclude, in section 7, with a discussion of the VP complementation structures that play a central role in this account.

1. Asymmetries of Syntactic Domain

Barss and Lasnik (1986) point out a number of important asymmetries in the behavior of the two objects in double object constructions. All involve phenomena in which constituent structure relations—specifically, c-command—have been assumed to play a central role. Thus, reflexives and reciprocals (anaphors) must be c-commanded by their antecedents. Double object structures show an asymmetry with respect to the licensing of anaphors:[1]

(3) a. I showed Mary herself.
*I showed herself Mary.

A quantifier must c-command a pronoun at S-Structure if it is to bind it. Double objects show asymmetries regarding quantifier-pronoun binding possibilities:

(3) b. I gave every worker$_i$ his$_i$ paycheck.
*I gave its$_i$ owner every paycheck$_i$.

A *wh*-phrase c-commanded at D-Structure by an NP containing a pronoun cannot be moved over that NP if *wh*- and the pronoun are coreferential. This is the so-called weak crossover effect. Double objects show weak crossover asymmetries:

(3) c. Which man$_i$ did you send his$_i$ paycheck?
*Whose$_i$ pay did you send his$_i$ mother?

A *wh*-phrase cannot in general be moved over another *wh*-phrase that c-commands it (in other words, is "superior" to it) in underlying representation. Double objects show an asymmetry in superiority effects:

[1] The judgments here are Barss and Lasnik's. Not all of the unacceptable sentences in (3) merit a full star in my idiolect; however, in each case the contrast observed by Barss and Lasnik is notable.

(3) d. Who did you give which paycheck?
*Which paycheck did you give who?

Constructions of the form *each . . . the other*, as in *Each man saw the other* or *Each man saw the other's friend*, may have a reciprocal reading when and only when the *each*-phrase c-commands the *other*-phrase. Double objects show asymmetries with respect to the *each . . . the other* construction on its reciprocal reading:

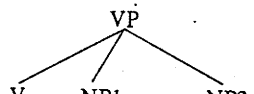
(3) e. I showed each man the other's socks.
*I showed the other's friend each man.

Finally, negative polarity items must occur in the c-command domain of an "affective element" such as negation or a negative quantifier. Double objects show asymmetries with respect to a negative polarity item such as *any* and a licensing affective element:

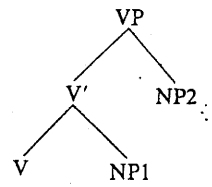
(3) f. I showed no one anything.
*I showed anyone nothing.

If it is assumed that these phenomena do indeed involve c-command, then (3a–f) all point to the same conclusion: in constructions involving a verb phrase of the form V–NP–NP, the first NP c-commands the second, but not vice versa. As Barss and Lasnik observe, this immediately casts doubt upon the two most frequently assumed structures for double objects:

(4) a.



b.



(4a) is the structure for double objects proposed by Oehrle (1976); (4b) is the one proposed by Chomsky (1981). Under a definition of c-command based on first branching nodes (Reinhart (1979)), NP1 and NP2 mutually c-command each other in (4a); hence, this structure predicts no asymmetries in relations based solely on hierarchical structure. In (4b) NP2 asymmetrically c-commands NP1, predicting that the latter is in the domain of the former but not conversely. Both sets of predictions are strongly contradicted by the facts in (3). Under a definition of c-command based on containment in maximal projections (Aoun and Sportiche (1983)), NP1 and NP2 will mutually c-command each other in both (4a) and (4b), predicting no asymmetries of syntactic domain. Again, this

prediction is falsified by the data in (3).[2] Evidently one of two conclusions is possible: (a) the syntactic data noted above are not in fact to be explicated by c-command alone; some other notions (such as linear precedence) must be invoked; or (b) these facts are indeed structural and some configuration other than (4a) or (4b) is involved.

The situation with double objects contrasts with that of standard oblique dative structures. The asymmetries observed with V–NP–NP structures occur with V–NP–PP structures as well:

(5) a. I presented/showed Mary to herself. (anaphor binding)
*I presented/showed herself to Mary.

b. I gave/sent every check$_i$ to its$_i$ owner. (quantifier binding)
??I gave/sent his$_i$ paycheck to every worker$_i$.

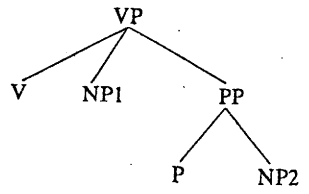
c. Which check$_i$ did you send to its$_i$ owner? (weak crossover)
*Which worker$_i$ did you send his$_i$ check to?

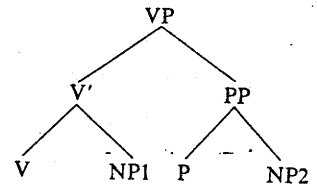
d. Which check did you send to who? (superiority)
*Whom did you send which check to?
(*To whom did you send which check?)

e. I sent each boy to the other's parents. (*each . . . the other*)
*I sent the other's check to each boy.

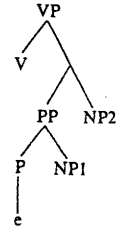
f. I sent no presents to any of the children. (negative polarity items)
*I sent any of the packages to none of the children.

In the case of oblique datives, however, these results do not appear to raise any special problems for c-command. The facts are accommodated smoothly, it seems, by appealing to the structure introduced by PP. Suppose the VPs in (5) are as in (6a) or (6b):

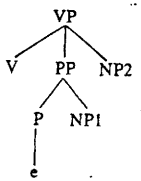
(6) a.


b.


[2] Kayne (1983a) and Czepluch (1982) argue that double objects involve empty PP structure:

(i) a.


(Kayne)

b.


(Czepluch)

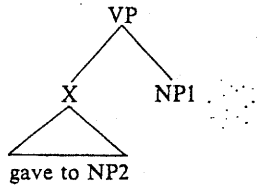
Then in (6a) NP1 asymmetrically c-commands NP2 under the definition of c-command proposed by Reinhart (1979): NP2 is dominated by a branching node (PP) not dominating NP1. Similarly, in (6b) NP1 asymmetrically c-commands NP2 under the definition of c-command given by Aoun and Sportiche (1983): NP2 is contained in a maximal projection (PP) that fails to contain NP1. This illustrates quite clearly why double objects present such a puzzle for syntactic analysis: if complement asymmetry in standard datives is simply a matter of the structure introduced by PP, then why, in double object constructions, where such structure is absent, do we not find symmetric behavior? This is what we expect, but it is not what we see.

2. The Structure of Datives Revisited

Chomsky (1955/1975) proposes an interesting alternative analysis of dative structures, one that attributes asymmetry among complements to a source other than PP structure. According to Chomsky, a sentence like (7a) is actually derived from a structure of the form (7b) (by extraposition of the PP *to him*):[3]

(7) a. The teacher gave several books to him.
b. The teacher [gave to him] several books.

In (7b) the indirect object is in fact an "inner object" forming a constituent with the verb that excludes the surface direct object. Here, as in (6a,b), there is an underlying asymmetry between dative verb complements. The indirect object (NP2) is in the structural domain of the direct object (NP1), but not conversely:

(8)


However, in (8) this asymmetry is *not* a matter of PP structure. Rather, it is introduced by the branching node labeled X, presumably some projection of V.

The structure in (8) departs quite sharply from those in (6) under plausible assumptions about the relation between thematic and hierarchical structure. In (6a) the two complements are structurally on a par: both are sister to V. We may take this to

Whatever their other virtues, these proposals are clearly no improvement on (4a,b) with respect to the facts observed by Barss and Lasnik; (ia,b) predict that NP2 should asymmetrically c-command NP1, which is incorrect.

The structure (ia) assumed by Kayne (1983a) does contain one very important element that is incorporated in the account developed here: in double object structures the complement of V is clauselike, with NP1 having an "inner subject" status.

[3] This analysis is developed more extensively in Fillmore (1965).

correspond to the view that theme and goal are both assigned by V (the latter perhaps with some contribution by the preposition). In (6b) the direct object alone is sister to V, whereas the indirect object phrase is sister to the small verbal constituent V′. This we can take to correspond to the view that the direct object alone receives a θ-role directly from V, whereas the indirect object receives its role "compositionally" from V′. Structure (8) asserts what is in effect the inverse of (6b): here it is the indirect object that is the direct argument of the verb, the object NP1 receiving a θ-role from the "phrasal verb" *give to him*.

The position taken in Chomsky (1955/1975) can be supported, I believe, by arguments parallel to those given in Marantz (1984) for the claim that it is VP that assigns a θ-role to the matrix subject, and not simply V. Marantz observes that the predicate expressed by a transitive verb + object regularly depends on the contribution of the object, as shown by VPs like *throw a baseball, throw support behind a candidate, throw a boxing match*. A similar phenomenon can be observed with datives. For example, consider the pair (9a,b):

(9) a. Beethoven gave the Fifth Symphony to the world.
b. Beethoven gave the Fifth Symphony to his patron.

Giving an object to the world (to posterity, mankind, etc.) has a rather different character from giving an object to an individual. In the first case we understand the given object to be the Fifth Symphony qua composition; the transfer of possession is metaphorical, so that (9a) is roughly synonymous with 'Beethoven created the Fifth Symphony'. In the second case we understand a physical object to be transferred—perhaps a sheaf of papers on which the composition is transcribed. The exact semantic role assigned to the direct object thus depends on the nature of the recipient appearing in the goal phrase.

The idea that a verb and its outer complements can form a single thematic complex is also supported by the existence of "discontinuous idioms" of the following kind (noted in Emonds (1972)):

(10) a. Lasorda *sent* his starting pitcher *to the showers*.
b. Mary *took* Felix { *to the cleaners* / *to task* / *into consideration* }.
c. Felix *threw* Oscar *to the wolves*.
d. Max *carries* such behavior *to extremes*.

Evidently in (10a) the dative verb *send* assigns a thematic role to the object *his starting pitcher* in concert with the complement phrase *to the showers*; similarly for (10b–d). The possibility of such idioms is straightforward under the structure in (8), where the indicated elements form an underlying constituent. It is quite unexpected under the structures in (6), however, where V and the outer complement form no thematic complex.

The argument from idiom data appears at first to be compromised by examples like (11a–d) (pointed out to me by D. Pesetsky), which seem to involve verb + object idioms

(*give x's all, give hell, give the boot, give the creeps, show x's cards*) that assign a compositional role to the indirect object:

(11) a. Max gave his all to linguistics.
b. Alice gives hell to anyone who uses her training wheels.
c. Oscar will give the boot to any employee that shows up late.
d. The Count gives the creeps to anyone he's around long enough.
e. Phyllis should show her cards to other group participants.

However, on closer inspection it is not clear that such examples really raise a problem. Note that the standard entailment *X-give-Y-to-Z* ⇒ *Z-get-Y* is preserved with the examples (11a–d), and note further that under this entailment the original idiomatic force is preserved:

(12) a. Linguistics gets [my all].
b. I caught/got [hell] from Alice.
c. Peter got [the boot].
d. Geez, you get [the creeps] just looking at him.

Similarly for (11e); alongside this example we find (12e), where again the idiomatic force is preserved:

(12) e. Unwittingly, Alice tipped [her cards].

These results are unexpected on the view that verb + object is an idiomatic complex; for example, if V were being understood idiomatically in (11a–d), there would surely be no expectation that the entailment *X-give-Y-to-Z* ⇒ *Z-get-Y* would hold, as it clearly does. What these facts suggest, then, is that contrary to initial impressions, the idiomaticity in (11a–e) lies not in the verb + object combination but rather in the object alone. That is, (11) and (12) suggest that *one's all, hell, the boot*, and so on, are being treated by the grammar as rather strange sorts of objects that, because they can be given, can be gotten as well. On this view, *give* and *show* do not in fact form idiom complexes in (11) or (12); rather, they simply interact compositionally with a semantically opaque NP.[4]

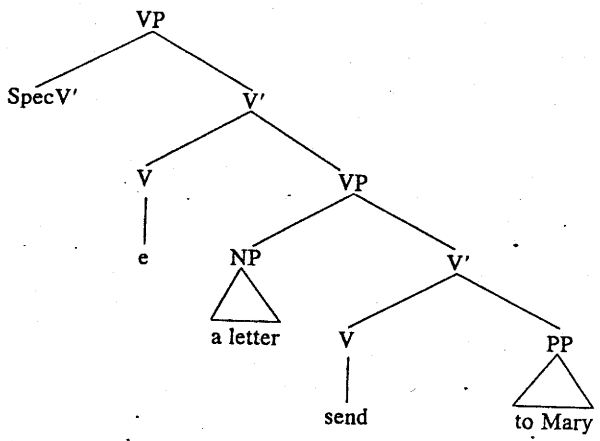
[4] These observations also bear on other, nondative multiple complement constructions:
(i) a. Mary *sent* John *packing*.
b. Mary *took* John { *for granted* / *in marriage* (archaic) }.
c. Mary *put* John { *through the wringer/his paces* / *to work/sleep* }.
The idiomatic status of the indicated elements argues that they too form an underlying constituent.
A very few dative structures of the form V + NP − PP do seem to involve genuine V + NP idioms. For example:
(ii) a. Our ignorance [gave way] to enlightenment.
b. Mary [gave birth] to a bouncing baby boy.
c. This event [gave rise] to a lot of trouble.

2.1. V Raising

In analyzing the structure of double objects, I will adopt a version of Chomsky's (1955/1975) proposal, one deriving from work by Bach (1979), Dowty (1979), and Jacobson (1983; 1987). The basic assumption is that the VP in a dative is as illustrated in (13):[5]

(13) a. John sent a letter to Mary.

b.



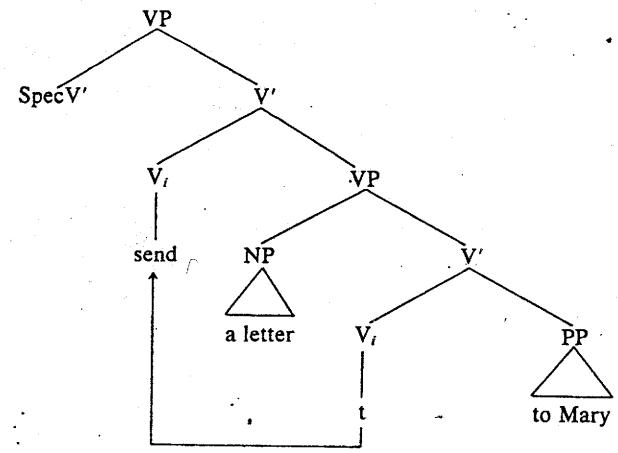
According to (13b), the verb phrase underlying *send a letter to Mary* is a strictly binary branching structure. The VP consists of an empty V taking a VP complement whose specifier is *a letter*, whose head is *send*, and whose sole complement is the PP *to Mary*. This structure may be understood intuitively as follows: *send* takes the complement *to Mary*, forming a small predicate send-to-Mary as in Chomsky (1955/1975). The latter is predicated of an "inner subject" *a letter*, forming a VP with clauselike structure: *a letter send to Mary*. This VP is then in turn predicated of a subject like *John* to yield the full sentence (13a).

However, although these are unexpected thematically from the point of view of (8), they are easily accommodated syntactically in a way that preserves the constituent status of the relevant idiomatic portion. Under the analysis of Chomsky (1955/1975), idioms like those in (iia–c) can be listed as basic Vs (*give way*, for example, would be comparable to the simplex verb *yield*). On the other hand, idioms like those in (10a–d) (*send to the showers, throw to the wolves, take into consideration*, and so on can be listed as basic V's. Under (6a,b) only the former can be accommodated in a way that preserves the constituent status of the idiom.

[5] The basic analysis of Chomsky (1955/1975) and Fillmore (1965), in which dative complements are analyzed as more intimate arguments than direct objects, is adopted in the "Right Wrap" Categorial Grammar analyses of Dowty (1978) and Bach (1979) (the latter explicitly acknowledges the connection to Chomsky (1955/1975)). In these analyses the surface form of *give a book to Mary* arises, not by extraposing the prepositional phrase rightward, but by wrapping the phrase *give to Mary* around its object *a book* so that the verb ends up first. Jacobson (1983; 1987) gives a Generalized Phrase Structure Grammar translation of the Right Wrap accounts using a V Raising structure similar to what is assumed here. (Jacobson does not, however, assume the subject-predicate form for VP adopted here, nor any of the proposals about phrase structure that underlie it.)

Of course, *John a letter send to Mary* is not a well-formed sentence of English: the verb must appear to the left of *a letter*. The central assumption here is that the correct surface form arises by movement of the verb *send* to the empty V position—that is, head-to-head movement along lines discussed by Baker (1985) and Chomsky (1986b). This movement leaves a trace in the original site and creates a sequence of coindexed V positions:

(14)



V Raising may be taken to follow from certain Case and agreement requirements holding of Infl, V, and NP.[6] Suppose, following the general proposals of Roberts (1985), that V must ultimately head a projection governed by Infl in order to receive tense and agreement information.[7] Furthermore, suppose (following Stowell (1981), Travis (1985), and Koopman (1985)) that Case is assigned under government, where the direction of government is rightward in English. In (13b) V is not the head of a projection governed by I. Moreover, the NP *a letter* in the lower SpecV' is not governed by the verb and so cannot receive Case.[8] V may be seen as raising in (14) to meet these joint requirements. In the resulting configuration the VP headed by *send* is governed by Infl. Furthermore, V may be plausibly analyzed as governing *a letter*: V is to the left of NP and NP is the specifier of a maximal projection sister to it; hence, *send* can assign Objective Case to *a letter* in (14), as required.[9]

[6] See footnote 49 for a somewhat different motivation for V Raising.

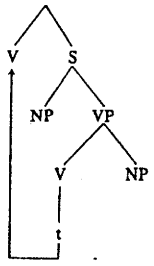
[7] Roberts (1985) articulates this notion under a theory of "V-visibility," whereby tense and agreement information have much the same status for V-projections that Case has for nominal projections. Both fall under an extended "inflectional filter" that requires them to be marked in an appropriate way.

[8] I assume a definition of government involving c-command in the sense of Reinhart (1979).

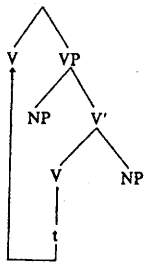
[9] This derivation is also sanctioned under proposals in Chomsky (1986b). Once V raises to [$_V$ e], the lower VP will be L-marked and no barrier to movement or Case assignment.

The situation posited here for VP in English is analogous to the situation widely assumed for S in VSO languages.[10] Under many proposals, the surface order of matrix constituents in languages like Welsh, Irish, and Berber is derived by V Raising; this permits the subject NP to receive Case from V and permits the verb to obtain tense and agreement, which, in VSO languages, appear to be located in Comp (Sproat (1985)); raising also obscures the presence of an underlying VP (15a):

(15) a.



b.

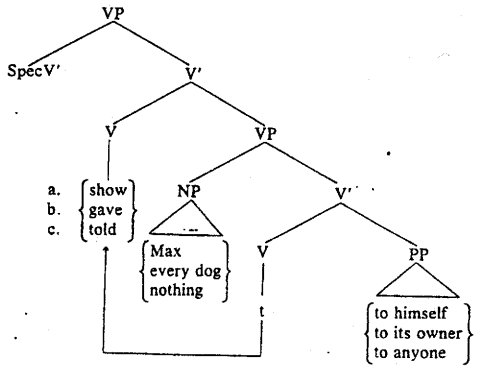


In a similar way, the VP-internal raising assumed here allows Case, tense, and agreement information to be assigned properly, while obscuring an underlying V' (15b). The domain of application is evidently different, but the motivation and effects are the same.

2.2. *Consequences*

The raising analysis preserves the crucial feature of Chomsky's (1955/1975) account noted earlier, namely, that the direct object will c-command the oblique object quite independently of the structure introduced by PP:

(16)



[10] This general analogy is noted by Dowty (1982) and Jacobson (1987).

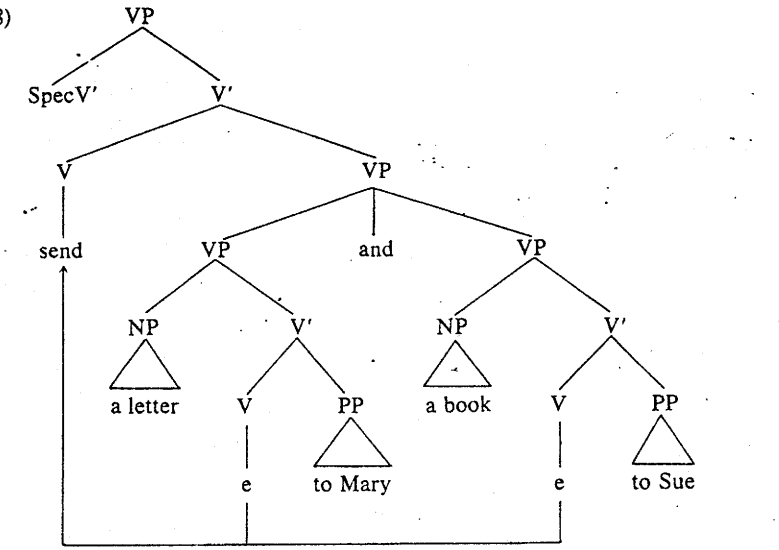
In (16a) *Max* c-commands *himself*, but not conversely, hence the binding asymmetries in (3a). Again, in (16b) the quantified object c-commands the indirect object, but not conversely, hence the quantifier-pronoun asymmetries in (3b). Finally, in (16c) the negative polarity item is in the scope of the affective element *nothing*, but not vice versa, hence the facts in (3f). The remaining cases, (3c–e), are analogous.

This analysis also provides a direct account of certain familiar but rather puzzling facts about conjunction in datives. Note the acceptability of examples like (17a,b) where a conjunction appears between the two sets of dative complements:

(17) a. John sent a letter to Mary and a book to Sue.
b. I gave five dollars to Maxwell and three dollars to Chris.

Given the usual assumption that conjunction unites constituents, such examples are problematic for the structures in (6a,b) (see Sag et al. (1985) for discussion): *a letter to Mary* and *a book to Sue* are not constituents. However, under the analysis suggested here, datives like (17a) are understood straightforwardly:

(18)



What we have in (17a,b) is a form of across-the-board movement—in particular, across-the-board V Raising. Here conjunction does indeed join constituents.[11]

[11] An LI reviewer points out that this account of (18), when extended to examples like (i), entails that *a letter to Mary in the morning* and *a note to Max during the afternoon* must be constituents:

(i) I wrote a letter to Mary in the morning and a note to Max during the afternoon.

This reasoning is correct. Under the semantic analysis of adverbs assumed here (essentially that of McConnell-

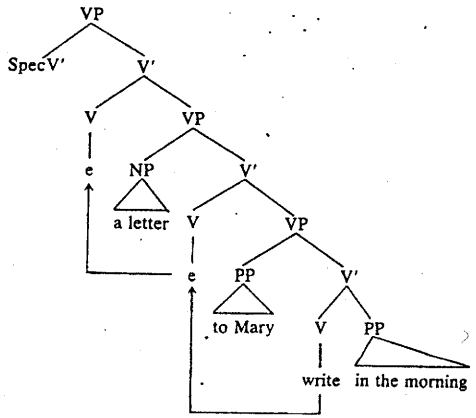
The status of direct objects as "VP subjects" in this account may appear to raise problems with respect to the binding theory. Under the usual definitions, anaphors like *himself* must be bound in their minimal governing category, where the latter is defined as the smallest maximal projection containing a subject and a lexical governor (Chomsky (1981)). This would seem to exclude a sentence like (19), where *herself* takes as its antecedent, not the close VP subject (*the task*), but instead the distant IP subject (*Mary*):

(19) Mary entrusted [$_{VP}$ the task [t to herself]]

In fact, such examples can be accommodated without jeopardizing the VP subject status of direct objects. Chomsky (1986a) suggests an alternative definition of governing category—one involving not the notion "subject" but rather the notion "complete functional complex" (CFC). Under this view, an anaphor α must be bound in its minimal CFC—in the minimal domain containing α in which "all grammatical relations compatible with its head are realized" (p. 169). In general the two notions of governing category—domain-of-a-subject and CFC—define identical domains; however, precisely in the case at hand they diverge. Although *herself* is not bound in the domain of its closest subject in (19), it is bound in the minimal CFC containing it, namely, in IP. The latter is the domain in which all grammatical relations compatible with *give* are realized. Hence, under the suggested reformulation of governing category in terms of CFC, the anaphor does satisfy the binding theory. In view of this I will henceforth simply assume the definition of governing category in Chomsky (1986a).[12,13]

Ginet (1982)), adverbs are not the outermost adjuncts of V but rather its innermost complements. The underlying structure of the first conjunct of (i) is thus (ii), where *write* combines with the adverb before either the direct or the indirect object phrase, and where the correct surface form arises by iterated V Raising:

(ii)



[12] Johnson (1987) and Giorgi (1987) argue independently for a definition of governing category in terms of CFC.

[13] The subject status of complements illustrates an interesting feature of the present analysis regarding "anaphor orientation." As is well known, English differs from a number of other languages (for example,

2.3. *V' Reanalysis and "Heavy NP Shift"*

The account of datives proposed above allows a novel approach to certain "movement phenomena," which I introduce here for later use. Consider sentences of the following kind:

(20) a. I gave to John everything that he demanded.
b. Max sent to me the longest letter anyone had ever seen.

Such examples have standardly been analyzed as deriving from more basic dative configurations by a rule of "Heavy NP Shift," which moves the object NP rightward:

(20) a′. I gave t to John [everything that he demanded]

b′. Max sent t to me [the longest letter anyone had ever seen]

This rule appears to be conditioned (in an obscure way) by the relative phonological "weights" of the object NP and the verbal complements that it moves over, hence the name.

Once this analysis of datives is accepted, a very different account of these phenomena becomes possible. Given the underlying structures of the datives in (20), we can take these examples to arise, not by rightward movement of NP, but rather by *leftward movement of a predicate phrase*—that is, not as in (20a′,b′), but as in (20a″,b″):

(20) a″. I [gave to John] everything that he demanded t

b″. Max [sent to me] the longest letter anyone had ever seen t

Under this view, "Heavy NP Shift" is in reality a case of "Light Predicate Raising."[14]

Danish and Icelandic) in permitting either an IP subject or an object to serve as antecedent for an anaphor in oblique position (Danish example (ib) from Pica (1986)):

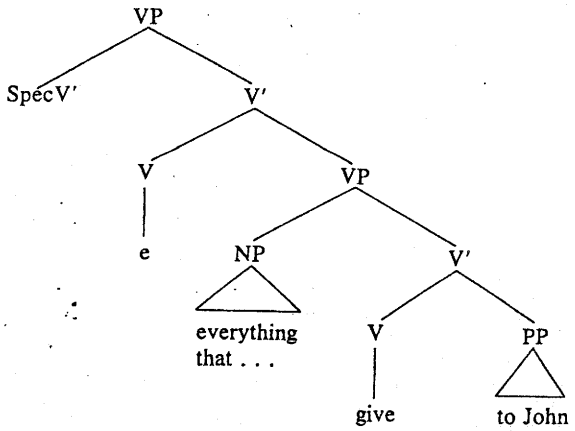
(i) a. John showed Mary to himself/herself.
b. *Jeg fortæller Jorgen$_i$ om sig$_i$.
I told Jorgen about himself

This fact is often described by saying that although other languages have "strict subject orientation" in their anaphors, English does not.

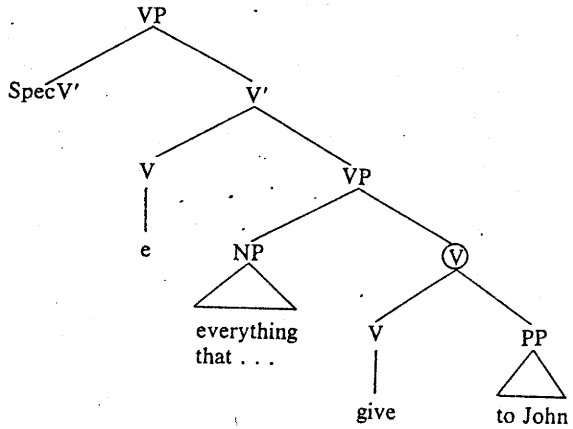
On the account sketched above, the term "strict subject orientation" becomes somewhat misleading since under a V Raising analysis, certain objects—that is, NPs governed by V at some stage in the derivation—are also subjects, specifiers of the maximal phrase VP. The analysis is thus compatible with the view that "subject orientation" is not a property of anaphors in particular languages but rather a universal property, and that cross-linguistic variation is not located in the grammatical function of potential antecedents but follows from some other difference. This result appears compatible with work by Pica (1986), who suggests that "strict subject orientation" arises from the full versus defective phrasal status of the anaphoric elements in question. Under Pica's analysis, for example, the defective phrasal status of *sig* in Danish (versus *himself* in English) forces it to move to Infl (at LF), where it can take only the IP subject as antecedent, resulting in reduced binding possibilities.

[14] The analyses proposed by Chomsky (1955/1975) and Fillmore (1965) make available a nonmovement analysis of Heavy NP Shift similar to that given here. In particular, Heavy NP Shift can be viewed as arising

(21) a.



(21) b.



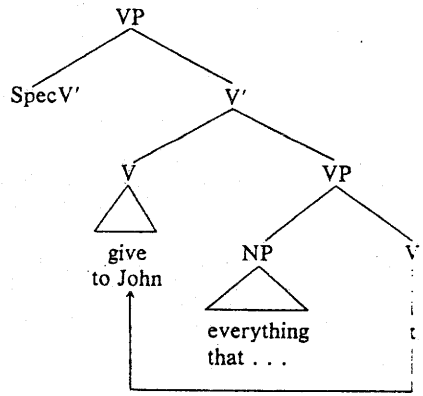
To make this idea precise, I introduce the following optional rule of V′ Reanalysis:

V′ Reanalysis

Let α be a phrase [$_{V'}$ . . .] whose θ-grid contains one undischarged internal θ-role. Then α may be reanalyzed as [$_{V}$ . . .].

just when Extraposition (or "Separation") of the inner verbal complement does not occur. Similarly, under Categorial Grammar analyses involving Right Wrap (Dowty (1979), Bach (1979)), Heavy NP Shift can be taken to arise when a transitive verb phrase (TVP) is analyzed as a basic lexical unit; Right Wrap then applies vacuously to yield a concatenation of the latter to its object. Jacobson's (1983; 1987) Generalized Phrase Structure Grammar analysis also makes use of complex predicate raising similar to that assumed here (although she appeals to a syntactic category TVP, which has no status in the present account). Finally, Haegeman and Van Riemsdijk (1986) argue for reanalysis of verbal projections and verb projection raising in a number of Germanic languages.

(21) c.



This reanalysis rule allows any predicate with (exactly) one unsaturated internal θ-role to be syntactically reconstrued as a complex lexical category—in effect, a complex transitive verb. Thus, consider the underlying VP of (20a), where the θ-grid for [$_{V'}$ give to John] contains one unsaturated internal argument (21a). If V′ Reanalysis does not apply, then head-to-head movement of V will occur as above, raising *give* to the [$_{V}$ e] position and yielding *give everything that he demanded to John*. On the other hand, if Reanalysis does apply, then the result is (21b). Raising now applies to the entire complex constituent *give to John*, yielding (20a), as shown in (21c). I will assume that, as a consequence of reanalysis, the Case-assigning properties of the verb are inherited by the complex predicate; hence, Case marking of the object proceeds as before.

It is natural to inquire about the rationale of a rule like V′ Reanalysis in the grammar. I consider this issue in section 7.4, where I suggest that reanalysis follows from a certain kind of "mismatch" between the ways in which θ-theory and X-bar theory encode the notion "transitive predicate." Here I will simply note that this analysis of "NP Shift" phenomena, when carried through in a perfectly general way, has some very strong consequences. Consider, for example, the implications of (22a–c) (the last example due to Engdahl (1983)):

(22) a. I would consider foolish [anyone who leaves his doors unlocked].
b. I saw at the conference yesterday [everyone who believes in UFOs].
c. I offended by not recognizing immediately [my favorite uncle from Cleveland].

If "NP Shift" is in fact complex predicate raising, then (22a) entails that small clause constructions like *I consider John foolish* must (contrary to recent proposals) have an underlying VP in which the AP is sister to V, namely, [$_{VP}$ John [$_{V'}$ consider foolish]].[15]

[15] Such an analysis of examples like (22a) is in fact proposed explicitly in Chomsky (1955/1975).

Example (22b) requires that the complex predicate see-at-the-conference-yesterday be available for raising. Accordingly, on this account modifiers like *at the conference* and *yesterday* cannot be outermost adjuncts (as is standardly assumed) but rather must be innermost complements. Finally, (22c) implies (contrary to Chomsky (1982; 1986b) and much other recent work) that the licensing of parasitic gaps does not (or need not) involve variables left by matrix Ā-movement. Under a predicate raising analysis of "NP Shift," the object NP remains in situ at all times; since no variable is generated, some process other than chain composition must be involved.[16]

3. The Structure of Double Object Constructions

With the account of dative constructions developed above we now return to double object structures. I will argue that domain asymmetries and various other properties of this construction can be explained under a derivational approach to double object structures.

Work in the Extended Standard Theory over the last ten years has generally not assumed a transformational relation between dative and double object constructions (Baker (1985) is an exception). This is no doubt due in part to the unclear status of "Dative Shift" in theories embracing very general operations like Move NP (or Move α) (Chomsky (1981; 1986a)).[17] And in part too, well-known restrictions and lack of full productivity in the dative–double object relation have led many to conclude that this relation must be lexical rather than transformational in character (see Allerton (1978), Dowty (1978), Green (1974), Hawkins (1981), Oehrle (1976) for discussion).

Nonetheless, despite these problems, there remain clear reasons why one might want to relate oblique dative and double object structures transformationally. First, although the relation between the two shows irregularities in English, in other languages the relationship is quite systematic. In particular, in languages with so-called applicative constructions (see Marantz (1984), Baker (1985) for discussion) oblique and double object structures show a highly productive relation strongly suggestive of derivational relatedness. This argues that transformational operations similar to "Dative Shift" must be available in principle. Second, a derivational approach to the dative–double object relation is clearly desirable under any strong theses about the relation between structure and assignment of thematic roles. For example, Baker (1985) advances the following hypothesis:

> *Uniformity of θ-Assignment Hypothesis*
>
> Identical thematic relationships are represented by identical structural relations between the items at the level of D-Structure.

This proposal is attractive on conceptual grounds since it narrows considerably the class of initial D-Structure realizations of a given set of thematic roles. Notice that it also

[16] This analysis of "NP Shift" and its consequences for parasitic gap phenomena are explored in Larson (in preparation).

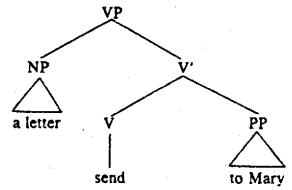
[17] See Herslund (1986) for remarks to this effect.

virtually forces a derivational account of the dative–double object relation, since the thematic roles assigned in these constructions are identical.[18]

3.1. "Dative Shift" as Passive

These considerations establish a prima facie case for attempting to construe the dative–double object relation transformationally. The challenge, then, is to bring this derivation within the scope of established theoretical principles and to constrain it in appropriate ways. Recall the underlying VP of a typical dative like *John sent a letter to Mary*:

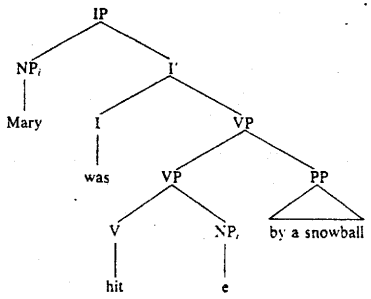
(23)



The deep VP is clauselike, with the NPs *a letter* and *Mary* standing roughly in the relation of subject and object. Suppose we strengthen this parallel by assuming that the governed preposition *to* appearing in (23) has the status of (dative) Case marking, analogous to that appearing on indirect objects in more highly inflected languages.[19]

Consider now the possibility of extending operations generally held to apply between subjects and objects to structures like (23). In particular, consider the possibility of passive formation in the inner VP. Under familiar proposals, the derivation of passives involves two central effects: withdrawal of Case from an object position, and suppression of thematic role assignment to a subject position (see Burzio (1986), Chomsky (1981)). This triggers NP Movement to subject position. The suppressed subject θ-role is (optionally) realized by an adjunct phrase:

(24)



[18] These remarks only imply, of course, that one of the two dative constructions—oblique or double object—should be derived from the other. See Johns (1984) for an argument that in certain Eskimoan languages the double object form is basic and the oblique structure derived. Dryer (1987) attempts (unconvincingly in my view) to argue a similar position for English.

[19] See sections 5.1 and 6 for more on the Case-marking status of *to*.

Suppose we amend this account slightly in the following way: rather than assuming that a subject θ-role is suppressed in passives, we will assume that it is assigned in a special way—specifically, in an adjunct configuration:

Argument Demotion

If α is a θ-role assigned by X^i, then α may be assigned (up to optionality) to an adjunct of X^i.

This modification leaves the analysis of (24) unchanged. The IP subject receives its thematic role compositionally from VP; hence, when the subject θ-role is demoted in a passive and is assigned to the *by*-phrase, the latter appears adjoined to VP.

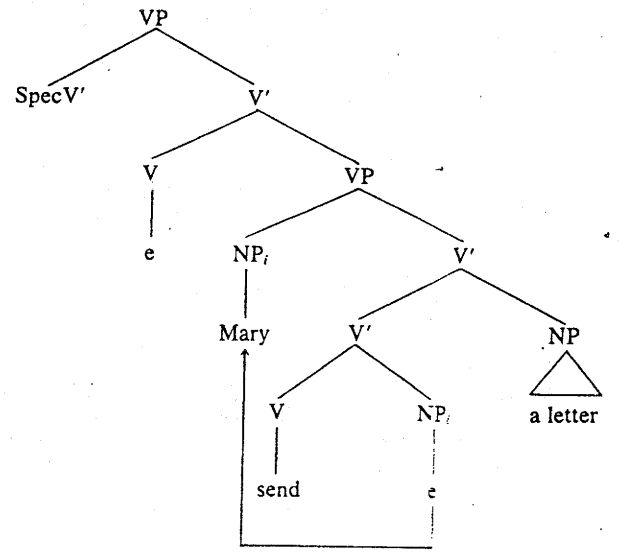
Let us apply this amended view of Passive to *send* as it occurs in the inner VP in (23). First, Passive absorbs the Case assigned to the indirect object. Assuming that we can regard the preposition *to* governed by *send* as pure Case marking, this amounts to saying that *to* is absorbed. Second, the θ-role assigned to the subject of VP (the direct object role) undergoes demotion, reducing this position to nonthematic status. Since the direct object receives its θ-role from V′, under Argument Demotion this θ-role must be assigned to a V′ adjunct. Accordingly, the direct object is realized as a V′ adjunct. The situation is thus as follows: the indirect object is Caseless in its deep position, and the VP subject position is nonthematic (and hence empty). In the usual way, then, the indirect object undergoes NP Movement to the VP subject position (25). Finally, *send* raises into V-head position, assigning Case rightward to the VP subject (26). This yields the S-Structure form for the VP in *John sent Mary a letter*.

The inner VP in (25) is analogous to the passive in (24). In both instances an object has been moved to subject position, with the former subject assuming adjunct status. For convenience, let us give the name "Passive" to NP Movement like (24), which promotes an argument to IP subject position, and the name "Dative Shift" to NP Movement like (25), which promotes an argument to VP subject position. We will refer to the suite of operations embracing both as "PASSIVE."

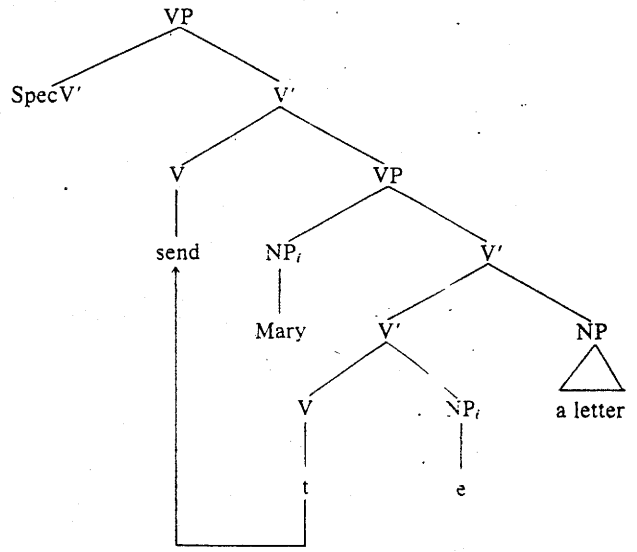
It is important to note that although the proposed derivation of Dative Shift sentences makes crucial appeal to internal argument positions that are empty at D-Structure, such positions are in no sense freely admitted under this account. Empty subcategorized positions are licensed strictly by dethematicization of a thematic position. The fundamental logic of the Projection Principle discussed in Chomsky (1981) thus continues to apply, and analyses ruled out by this principle (such as Raising to Object, which involves an athematic, empty internal argument position that is not produced by demotion) continue to be excluded.

It should also be observed that the connection drawn here between Passive and Dative Shift is quite similar to that made within the framework of Relational Grammar (see Perlmutter (1983) and Perlmutter and Rosen (1984)). In Relational Grammar both Passive and Dative Shift are standardly viewed as instances of a single operation of *advancement*, which promotes argument phrases with respect to their grammatical re-

(25)



(26)



lations. Thus, Passive is viewed as "2 → 1 advancement" and Dative Shift as "3 → 2 advancement," where "1," "2," and "3" designate the subject, direct object, and indirect object relations, respectively. Arguments that are supplanted in their grammatical relation—the deep subject of a passive, the deep direct object in a double object structure—assume the special status of *chômeurs* and become unavailable for subsequent relation-changing operations. In effect, what we have given here is a structural interpretation of the standard Relational Grammar analysis, recasting the notion "advancement" uniformly in terms of Move NP and understanding chômeur status as θ-role assignment in an adjunct configuration.[20]

3.2. *Some Consequences*

The structural relations that arise here from Dative Shift directly account for Barss and Lasnik's (1986) facts. As a result of NP Movement, the inner object in (25), which is a V′ specifier, asymmetrically c-commands the outer object, which is a V′ adjunct. Hence, the asymmetries observed in (3) are straightforwardly assimilated to those in (27):

(27) a. Every boy$_i$ was recommended by his$_i$ mother.
*?Her$_i$ son was recommended by every mother$_i$.
b. Which boy$_i$ was recommended by his$_i$ mother?
*Whose mother$_i$ was her$_i$ son recommended by?
c. Who was recommended by who?
*Who was who recommended by?
d. Each boy was recommended by the other's mother.
*The other boy was recommended by each mother.
e. No one was recommended by anyone.
*Anyone was recommended by no one.

This analysis also neatly predicts a certain "classic" fact regarding the interaction of double objects with "Heavy NP Shift." It is well known that a heavy inner object in a double object construction cannot be "shifted" to the right periphery of S:[21]

(28) a. *John sent a letter [every musician in the orchestra].
b. *Max gave a book about roses [the tall man in the garden].
c. *Mary promised to win [some spectator in the grandstands].

Recall now that on the proposals outlined above, "Heavy NP Shift" results from a form of reanalysis. Specifically, when a V′ constituent has one unsaturated internal argument (in other words, has the thematic properties of a transitive verb), then that V′ may be

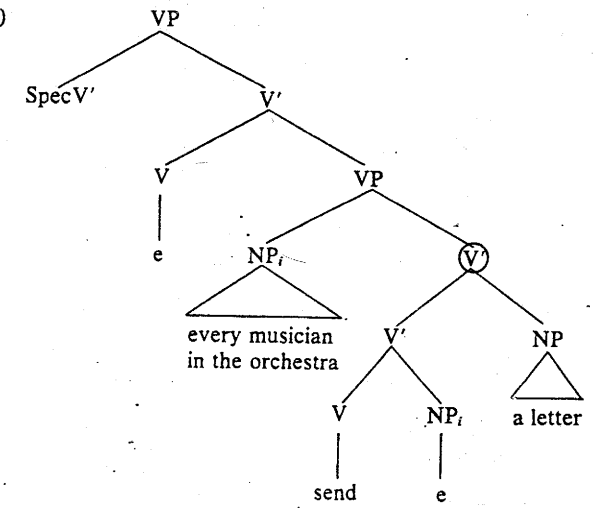
[20] The proposal of Argument Demotion is closely analogous to Keenan's (1975) formulation of relational advancement. According to Keenan, rather than being ousted in its grammatical relation by an advancing phrase, an argument undergoes spontaneous demotion in its grammatical relation and so permits the latter to advance.

[21] *Promise* is treated here as a double object verb, with the infinitive corresponding to the underlying direct object. The relevance of this analysis for control properties of *promise* is explored in Larson (1987).

reconstrued as V and undergo V Raising. It is the raising of a complex verbal constituent that results in (the appearance of) "Heavy NP Shift."

On this view, in order to derive an example like (28a), we would have to be able to reanalyze the V′ indicated in (29):

(29)



But this is not possible. The circled V′ simply does not have the required thematic structure for reanalysis. *Send* has, as we have assumed, two internal arguments. NP-trace [$_{NP_i}$ e] saturates one of these, and the adjoined NP *a letter* saturates the other. As a result, the indicated V′ will have no unsaturated internal arguments. Since *send e a letter* cannot be reanalyzed as V, it cannot be raised as a unit, and so (28a) cannot be derived.

Under other approaches to double objects, the ungrammaticality of (28a) has typically been assimilated to the general ungrammaticality of Ā-movement from the inner object position in English (Kayne (1983a), Whitney (1983), Ziv and Scheintuch (1979)):

(30) a. *?John, Mary said that she gave a present.
b. *?Who did Mary say that she gave a present?
c. *John is tough to give a present.

Under the analysis of "Heavy NP Shift" adopted here, however, such an assimilation cannot be made. Since no movement of NP is assumed and since the availability of Ā-movement is independent of V′ Reanalysis, (28) and (30) must be given separate explanations.

There is evidence from Norwegian indicating that this separation is in fact correct.

Like English, Norwegian allows "heavy" NPs to appear at the right periphery of S (data from Christensen (1987)):

(31) a. Vi har lånt [den interessante boken du nevnte] til Petter.
we have lent the interesting book you mentioned to Peter
b. Vi har lånt til Petter [den interessante boken du nevnte].

(32) a. Vi skal lese [den interessante boken du nevnte] i morgen.
we shall read the interesting book you mentioned tomorrow
b. Vi skal lese i morgen [den interessante boken du nevnte].

Norwegian departs from English, however, in more freely allowing Ā-movement of inner objects in the double object construction ((33a) from Christensen (1987), (33b–d) from A. Hestvik (personal communication)):

(33) a. Ingen studenter har vi lånt romaner.
no students have we lent books
b. Jon sa Marit at hun ga en presang.
John said Mary that she gave a present
'John, Mary said that she gave a present.'
c. Hvem sa Marit at hun ga en presang?
who said Mary that she gave a present
'Who did Mary say that she gave a present?'
d. ?Jon er vanskelig a gi en presang.
John is difficult to give a present
'John is difficult to give a present.'

Now, significantly, despite this greater latitude in Ā-movement, the equivalents of (28a–c) remain ill-formed in Norwegian:

(34) a. Vi har lånt [den hyggelige gutten du kjenner] en bok.
we have lent the nice boy you know a book
b. *Vi har lånt en bok [den hyggelige gutten du kjenner].

Ā-extraction and "Heavy NP Shift" of the inner object thus pattern differently in Norwegian, supporting the idea that the constraints applying to them in English also have different sources.[22]

[22] Further arguments that "Heavy NP Shift" does not involve A-movement of NP are given in Larson (in preparation). In addition to its relevance for "Heavy NP Shift," Norwegian also provides a clue about why inner object extraction is unavailable in English. Note that just as Norwegian differs from English in the Ā-moveability of the inner object, it also differs in the A-moveability of the outer object (examples from Christensen (1982)):

(i) a. Barna$_i$ ble overrakt t_i blomstene.
the children$_i$ were handed t_i the flowers
b. Blomstene$_i$ ble overrakt barna t_i.
*the flowers$_i$ were handed the children t_i

In section 4 English examples like **The flowers were handed the children* are analyzed as involving a Case

3.3. Apparent Differences between Passive and Dative Shift

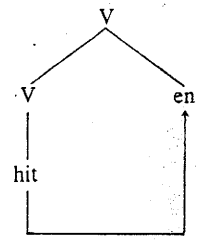
If we are to maintain that double object structures and passives are fundamentally the same construction—that they arise by the same process operating in different domains (IP and VP, respectively)—then certain obvious differences between the two must be accounted for. For example, in passives the verb is marked with overt participial morphology, *-en*, whereas in double object constructions the verb appears in its usual active form. In passives the demoted adjunct phrase (the logical subject) may be suppressed (35a); however, in double object structures the demoted adjunct phrase (the logical direct object) cannot be suppressed (35b),

(35) a. Mary was hit (by a snowball).
b. John sent Mary *(a letter).

(where *Mary* is understood as goal in the latter). In passives the adjunct phrase must appear with a Case-assigning preposition (*by*), whereas in double object structures both NPs at issue show up as "bare accusatives." Finally, the active-passive relation and the oblique–double object relation differ greatly in productivity, with the latter being much more restricted. I will postpone discussion of productivity until section 5; let us take the other points in turn.

3.3.1. Morphology and Subject Suppression. The absence of participial morphology and the nonsuppressibility of the "VP subject" in double object structures can, I believe, be explained under proposals by Jaeggli (1986). Recall that on the usual view of passive, the subject θ-role is held to be "absorbed" by passive morphology. Jaeggli proposes that this absorption be understood in the following way: in a passive the subject θ-role is assigned to the (adjoined) passive morpheme *-en*:

(36)



Adapting ideas by Zubizarreta (1985), Jaeggli suggests that this θ-assignment possibility

theory violation. Essentially, when the outer object moves to subject position, the structural Case assigned to the inner object is suppressed, leaving *the children* Caseless. The well-formedness of (ib) in Norwegian indicates that the latter has some stronger means for Case-assigning the inner object—for example, that both the inner and the outer object receive an inherent Case in Norwegian double object structures. This in turn suggests that the well-formedness of extraction of inner objects in Norwegian versus its ill-formedness in English may be traced to the stronger Case identification of the inner object in the former. I hope to develop this analysis in detail elsewhere.

arises from the special status of the subject θ-role in lexical representation. Briefly, since IP subject position is not a subcategorized one, a θ-role assigned to this position cannot be linked in lexical representation to any particular set of categorial features. As a result, the IP subject θ-role is free to be assigned to various phrases, including full nominal phrases, and also to morphological elements like *-en*. Other thematic roles (such as those assigned to objects) do not have this categorially "unlinked" character and so must be assigned to full nominal arguments.

Under these proposals, differences of morphology and subject suppression in datives versus passives now follow directly from the linked versus unlinked status of the relevant subject position. Datives involve a demoted VP subject. Since the VP subject position is subcategorized for, an object θ-role cannot be assigned to a bound morpheme equivalent to *-en*. Rather, it must be assigned to a full NP. Accordingly, in double object constructions a "passive morpheme" cannot appear, and so an NP theme argument must appear. Passives involve a demoted IP subject. Since the IP subject position is not subcategorized for, the subject θ-role can be assigned to *-en*, and hence a full nominal subject argument need not be present.[23,24]

Note that since *-en* receives the subject θ-role in a passive, *by*-phrases have a purely adjunct status on the above view. When a *by*-phrase appears, as in (24), this expression is assumed to receive its thematic role through the *-en* morpheme—essentially, the *by*-phrase "doubles" the subject θ-role. Although Jaeggli makes no commitment on this point, I will assume that the position of the *by*-phrase follows the generalization stated

[23] These remarks do not imply, of course, that Dative Shift or its equivalents cannot be morphologically marked. Such verbal inflection does indeed show up in languages with so-called applicative constructions (see examples in (61)). This inflection is not parallel to the *-en* marking of passive, however; rather than being associated with the demoted argument, it records the thematic role that the promoted argument bears. I propose in section 5.2 that this function is precisely what allows for the greater productivity of these constructions as compared with English Dative Shift.

[24] As an anonymous *LI* reviewer points out, the nonoptionality of the theme in double object constructions must be understood modulo the lexical properties of specific verbs. For example, the verb *write* has the specific property of allowing its theme to remain implicit:

(i) a. Bill wrote a long letter to his mother.
b. Bill wrote his mother a long letter.
c. Bill wrote to his mother.

Accordingly, we expect, and find, a corresponding double object form in which the theme is absent:

(i) d. Bill wrote his mother.

As the reviewer also points out, *write* differs in this respect from verbs like *pay* and *serve*, which allow the theme to be implicit only when the latter has been demoted to adjunct status:

(ii) a. Fred paid the ransom to the agent.
b. Fred paid the agent the ransom.
c. *Fred paid to the agent.
d. Fred paid the agent.
(iii) a. Patty served two desserts to the fat man.
b. Patty served the fat man two desserts.
c. *Patty served to the fat man.
d. Patty served the fat man.

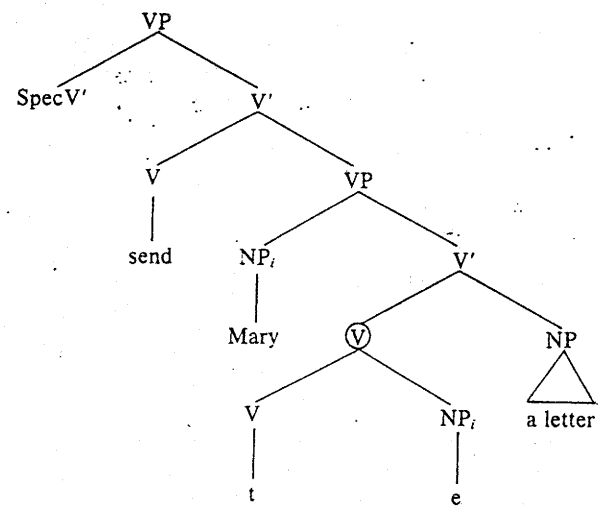
For more on the interaction of Dative Shift and "Object Deletion," see Dowty (1979).

earlier: that is, since the *by*-phrase receives the subject θ-role (through *-en*), it is adjoined to VP, the constituent that assigns the subject θ-role in the unpassivized case. The basic structural parallelism between the outer object in a double object structure and the *by*-phrase object in a passive is thus preserved, even though the latter is not the primary "target" of the subject θ-role.[25]

3.3.2. Case Assignment to Double Objects. As in other accounts of double objects, this analysis must assume Case marking of the outer NP in its adjoined site. The central questions to be answered are these: (a) How precisely is this Case assigned? and (b) How is it that two "measures" of Objective Case come to be assigned in a single configuration?

The answer that I suggest to (a) is that Case assignment to the outer NP is licensed by V′ Reanalysis as introduced earlier. Consider the lowest V′ in (25). This phrase has the structure [$_{V'}$ t e], where *t* is the trace of V Raising, and *e* is the trace of NP Movement. Under familiar assumptions the moved NP receives its thematic role through *e*; hence, θ-role assignment to the goal argument in (25) must occur through *t*. This in turn means that *e* discharges one of the two internal arguments of the dative verb; hence, the lowest V′ has exactly one unsaturated θ-role, that corresponding to the direct object (theme). By earlier assumptions, V′ Reanalysis may now optionally recategorize this V′ as a V:

(37)



In this configuration the outer NP complement *a letter* is the sister of a complex predicate

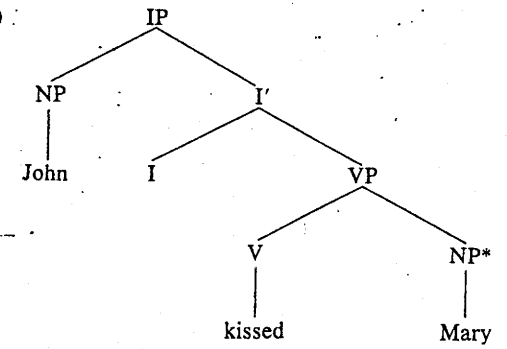
[25] An alternative view of θ-role assignment to *-en* versus to the *by*-phrase would be to take the former as θ-role assignment in the lexicon (parallel to Rizzi's (1986) account of small pro) and the latter as θ-role assignment in the syntax. Our principle would then require demoted θ-roles to be assigned to an adjoined element at whatever level assignment takes place.

whose category is V—a complex transitive verb. It is, in fact, in the canonical configuration of direct objects: [$_{V'}$ V NP]. It is this relation, I propose, that allows *a letter* to receive Case.[26]

At this point question (b) becomes relevant: Why is it Objective Case that is assigned, and what allows this Case to be assigned twice? To answer this, I will make a somewhat controversial proposal: namely, that Objective Case is assigned twice in the double object construction because in fact this is the typical situation for Objective Case assignment. That is, I want to suggest that quite generally in transitive structures two Objective Cases are involved—one structural and one inherent—and that the double object construction is simply an instance where the two Cases are "pulled apart" and assigned to different arguments.[27]

To make this precise, I introduce the following assumption about structural Objective Case: *V assigns Objective Case in the configuration* [$_{Infl}$ *Infl* [$_{VP}$ *V* . . .]]. Thus, when governed by Infl, V assigns Objective Case. One way to think of this is that Infl has its own Objective Case that must be assigned through a "host" V. The conditions on this host are the usual ones: V must govern and be adjacent to the Case recipient, and so on. I also assume that a verb may assign an inherent Objective Case to its highest internal argument as a purely lexical property. The conditions for inherent Case assignment are again that V govern and be adjacent to NP. According to these proposals, then, in a simple transitive structure like (38) *kiss* is governed by I and therefore assigns structural Objective Case to NP*:

(38)



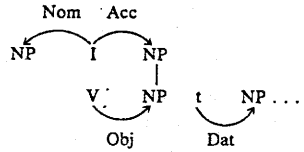
Assuming then that *kiss* also determines Objective Case for its internal argument as a lexical property, two Cases are assigned to *Mary*: one structural, and one inherent.[28]

[26] Technical details aside, this view of Case assignment to the outer object is essentially identical to that suggested in Marantz (1984).

[27] Jaeggli (1986) makes a related proposal about Objective Case assignment, appealing to two structural Cases rather than a structural and an inherent Case.

[28] This proposal suggests an appealing general view of Case systems: we might picture the structural or grammatical Cases (Nominative, Accusative) as determined uniformly by Infl, and the inherent or semantic Cases (Objective, Dative, Benefactive, and so on) as determined strictly by V:

(i)



Under this idea, the direct object would be, in effect, a position where the two Case systems intersect—a position where two Cases, Accusative and Objective, are "superimposed" upon a single argument.

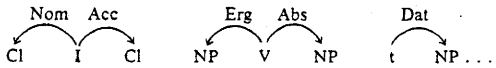
This may clarify a number of empirical issues. Belletti and Levin (1985) have argued that verbs taking an external argument always have a "direct Case" to assign, even when they appear to determine an oblique complement as a matter of lexical properties. They argue that with verbs like *talk*, which determine a dative complement (*John talks to Mary*), the preposition obligatorily reanalyzes (or incorporates) as part of V to permit Objective Case assignment:

(i) John [Infl [$_{VP}$ talk-to Mary]]

Given the above remarks, we might understand the obligatory direct Case detected by Belletti and Levin as the structural, Accusative Case determined by Infl. The situation in (ii) is then as follows: the verb *talk* determines an inherent Oblique Case for its object; however, Infl determines a structural Objective Case that also must be assigned to the object. These two competing demands are reconciled by reanalysis/incorporation of P: the inherent Oblique Case component determined by *talk* is expressed; however, the reanalyzed complex assigns Objective Case under government by Infl.

The scheme in (i) may also shed light on the phenomenon of "ergative splits," where the clitic (or agreement) morphemes associated with Infl exhibit a Nominative-Accusative organization, whereas the independent nominal arguments show an Ergative-Absolutive paradigm. (The Australian aboriginal language Warlpiri is an example (Hale (1972), Jelinek (1984)).) We might view such systems as resulting from a strict separation of the structural and inherent Case systems by means of clitics:

(iii)



The Nominative-Accusative organization of the clitic morphemes would then reflect the (universal) demands of the structural Case, whereas the Ergative-Absolutive-Dative organization of the overt arguments would reflect the inherent, semantic Case assignments determined by V.

Next consider (37). In this structure the outer NP complement *a letter* is governed by the complex V (just as *Mary* is governed by *kiss* in (38)). By assumptions, [$_{V}$ t e] inherits the Case-assigning properties of its head. Hence, [$_{V}$ t e] can assign to *a letter* the inherent Objective Case associated with *send*. Correlatively, the inner NP complement is governed by the raised V, which is in turn governed by I. Again by earlier assumptions, V assigns (structural) Objective Case to *Mary*. Thus, both NPs in the double object construction receive Objective Case, satisfying the Case Filter: the inner NP receives structural Case through Infl, and the outer NP receives inherent Case through V.

Under the present account Passive and Dative Shift must have the properties shown in table 1. Since we are assuming that two Objective Cases are assigned in a transitive structure—one structural and one inherent—we must assume that Passive actually suppresses two Cases to maintain the familiar Government-Binding account of NP movement. On the other hand, only inherent Case is affected by Dative Shift: *to* is absorbed, but no structural Case is withdrawn.

Table 1
Properties of Passive and Dative Shift

	Case	Thematic Role
Passive	Suppress inherent Suppress structural	Demote subject θ-role
Dative Shift	Suppress inherent	Demote subject θ-role

This constellation of effects can be obtained by assuming that whenever our generalized NP Movement operation applies, an inherent Case is suppressed, and that whenever V is affixed by participial morphology (*-en*), it can no longer "host" the assignment of structural Case from Infl.[29] The effect of this, descriptively, is that PASSIVE suppresses or suspends a Case in whatever *domain* it applies, where by the *domain* of NP Movement I mean the set of distinct projections α1, α2, . . . , α*n* intervening between the head and tail of the A-chain produced by movement. Thus, the domain of Dative Shift is VP, and PASSIVE suppresses one inherent Case, the Case assigned within VP. On the other hand, the domain of Passive includes both V and I projections (an NP is moved out of VP into IP specifier position). Correspondingly, Case is suppressed in both domains—a structural Case and an inherent Case.

4. "Indirect" Passives

The connection between Passive and Dative Shift proposed here has implications for the analysis of "indirect" or dative passives. (39a) is a typical example of this construction:

(39) a. Mary was sent a letter.

Under the Standard Theory (and other frameworks), such sentences are analyzed as arising by a two-step process: Dative Shift applies to a simple dative (39b), yielding a double object structure (39c); Passive then applies to the latter, yielding (39a):

(39) b. (Someone) sent a letter to Mary.
c. (Someone) sent Mary a letter.

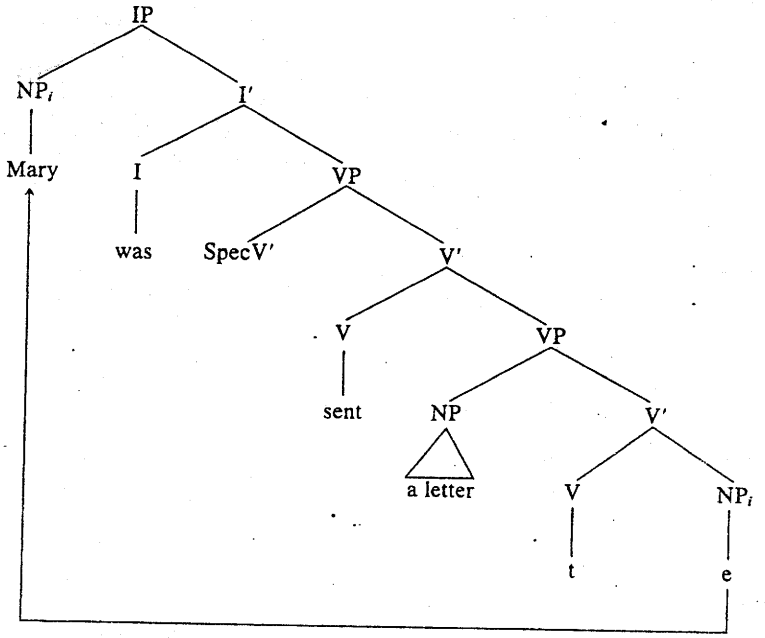
On this view it is always a (derived) direct object that is promoted in dative passives.

Under the present account, an alternative derivation becomes possible. Suppose we apply PASSIVE to the simple dative in (39b), withdrawing the Case (the preposition *to*) from the indirect object just as with Dative Shift. But instead of demoting the θ-role

[29] This view is compatible with the proposal of Rouveret and Vergnaud (1980) that a passive participle loses its Case-assigning possibilities by virtue of its derived adjectival status. We might say that because adjectives are Case-receiving categories, any Case transmitted to them is absorbed and not passed along.

of the direct object, we demote the role assigned to the subject. Such a move observes the basic correlation of Case and θ-role suppression ("Burzio's Generalization"). The inner object now moves directly to the subject position in order to receive Case, and the verb raises as usual, yielding (39a):[30]

(40)



Note that although the indirect object is promoted directly to subject position in (40), with no intermediate double object structure involved, the direct object will have essentially the same Case status as it would under a two-step derivation, where it would appear as a V' adjunct. Application of PASSIVE in (40) not only suppresses the (Dative) Case of the moved NP but also blocks assignment of structural Objective Case to *a letter*. As a result, the direct object will receive only the inherent Objective Case assigned by *send*. It follows then that although *a letter* occupies its D-Structure position in (40), it behaves exactly like the outer object in a double object structure with respect to Case.

Passive of dative structures like (39a) contrast with examples like (41) in which a direct object has been passivized. The latter are generally quite marginal:

(41) ?*A letter was sent Mary.

[30] Stowell (1981) and Czepluch (1982) also propose analyses in which dative passives receive a direct derivation. However, the relations among passives, double objects, and dative passives that result under their accounts differ sharply from those determined here.

This result is predicted by our analysis. (41) cannot be derived directly from (39b) by NP Movement: Case assignment to the indirect object has been suppressed (*to* is absent), but it is the direct object that appears in subject position. The only source for (41) is through an application of NP Movement to the outer object in a double object structure, leaving *Mary* behind in direct object position (irrelevant details suppressed):

(42) [A letter] was sent Mary t

Recall now that in a double object structure the (derived) direct object receives only structural Case. But observe that since this passive involves *-en* morphology, structural Case assignment is suppressed (*sent* will not "host" the assignment of Case from Infl). Accordingly, *Mary* is Caseless in (41) and the sentence is ruled out.

Passivization of the outer object is often judged to improve somewhat when the inner object is pronominal:

(43) ??A letter was given me by Mary.

Oehrle (1976) suggests that this difference derives from the familiar fact that pronouns, unlike full NPs, are able to undergo cliticization. Note that constructions like (43) are well-formed only if the pronoun bears weak stress:

(44) a.. A letter was given { 'im / *HIM } by Mary.

b. I didn't say that a letter was given to Fred by Mary,
*I said that a letter was given ME.

Suppose then that English pronouns like *me* have, as a marginal option, the possibility of cliticizing onto an adjacent verb. Suppose further (following standard views) that clitics occupy an Ā-position, where they are not subject to the Case Filter. Then in (41) *Mary* will be stranded without Case, yielding a violation. On the other hand, in (43) *me* will have the option of cliticizing onto *given*, escaping the Case Filter. Finally, in (44a,b) the presence of contrastive stress can be taken to block cliticization, again producing a Case Filter violation.[31]

[31] Cliticization may also be responsible for another familiar fact about pronouns in double object contexts, namely, that if the outer object is pronominal, then the inner object must be pronominal (and unstressed) as well:

(i) a. i. *?I sent my father it yesterday.
ii. ?I sent'im it yesterday.
b. i. *?Give Felix it!
ii. ?Gimme it!

Suppose that English (non-*wh*) objective pronouns must occur adjacent to a lexical Case assigner, regardless of whether the Case they bear is structural or inherent. This condition is not met in (iai) and (ibi) since *my father* and *Felix* intervene. In (iaii) and (ibii), however, if *it* and *me* are analyzed as having undergone cliticization, as their reduced form suggests, then *it* will be adjacent to the V + Cl complex, satisfying the adjacency condition.

If the cliticization strategy discussed above does indeed exist, it evidently must be available only as a "last resort." Cliticization cannot be allowed to save potential Case Filter violations in examples like (ii) where an alternative, licit derivation exists:

(ii) *It was killed'im.
(compare *He was killed.*)

4.1. "3 → 1" Advancement?

A "direct" analysis for dative passives is clearly possible only if we concede to Passive one of the central properties of Dative Shift, namely, the ability to suppress or absorb the preposition *to*. Hence, dative passives are a potential strong source of evidence for the claim that passives and double objects arise by the same operation. If it could be shown that direct derivations do occur, this claim would be considerably strengthened. Let us consider some empirical evidence.

4.1.1. Japanese and Ancient Greek. In English a direct derivation for dative passives is hard to establish, since every case where we might claim a "one-step" analysis will also have a "two-step" account in which the indirect object first moves to direct object position by Dative Shift. However, in other languages—those cited in the Relational Grammar literature as showing "3 → 1" advancement—the situation appears somewhat clearer. Consider the following paradigm from Shimizu (1975) for Japanese:

(45) a. Taroo ga Hanako o tataku.
Taro Subj Hanako Obj hit
'Taro hits Hanako.'
b. Hanako ga Taroo ni tatakareru.
Hanako Subj Taro by hit-Pass
'Hanako is hit by Taro.'
c. Taroo ga Hanako ni kotzutsumi o okuru.
Taro Subj Hanako to package Obj send
'Taro sends a package to Hanako.'
d. Hanako ga Taroo ni kotzutsumi o okurareru.
Hanako Subj Taro by package Obj send-Pass
'Hanako is sent a package by Taro.'
e. *Taroo ga Hanako o kotzutsumi o okuru.
Taro Subj Hanako Obj package Obj send

(45a–c) are simple examples of active, passive, and dative constructions, respectively. As (45d) shows, it is possible to construct a dative passive corresponding to (45c); however, Japanese forbids the intermediate double object structure (45e) required on a two-step derivation of the dative passive. On the basis of this, Shimizu suggests that the derivation of (45d) involves an advancement of *Taroo* directly from indirect object to subject status, with no intervening direct object stage.

Similar facts are observed by Feldman (1978) for Ancient Greek. Feldman notes that dative constructions like (46a) may be passivized as in (46b), with the indirect object

promoted to subject status. However, a double accusative structure like (46c) never occurs in Ancient Greek:

(46) a. epitáksousi állo ti méîdzon hyymîn
lay upon-3pl-Fut other some greater-Acc you-pl-Dat
'They will lay some other, greater [command] upon you.'
b. állo ti méîdzon epitakhtheésthe
lay upon-2pl-Fut-Pass
'You will have some other, greater [command] laid upon you.'
c. *epitáksousi állo ti méîdzon hyymáàs
you-pl-Acc

Accordingly, Feldman suggests an analysis of (46c) in which *állo* is promoted directly from indirect object to subject status. Languages like these appear to support the thesis of "3 → 1" advancement in a direct way.[32]

4.1.2. Psych Verbs. A "3 → 1" analysis of dative passives also appears to be supported indirectly by the analysis of other movement constructions. Under the proposals of Perlmutter (1978; 1983) and Burzio (1986), passives and unaccusatives bear an intimate relation to each other and involve parallel forms of NP Movement:

(47) a. The boat was sunk t.
b. The boat sank t.

Thus, passive morphology induces *sink* to assign no Case to its internal object and no θ-role to its subject. Unaccusative *sink* manifests essentially the same behavior as a matter of its basic lexical properties.

Suppose now that the derivation of dative passives proceeds as we have suggested, where *given* may involve suppression of Case assignment to the indirect object and suppression of θ-role assignment to the subject. Then we expect a parallel set of unaccusatives. That is, we predict verbs X that, as a matter of lexical properties, suppress Case to an innermost object, inducing it to move to subject position:

(48) a. NP1 was give-en NP1 t
b. NP1 X NP1 t

Interestingly, there do seem to be predicates with the relevant properties. These

[32] Other languages for which "3 → 1" advancement has been proposed include Cebuano (Bell (1983)) and Kinyarwanda (Gary and Keenan (1977)). For discussion of this issue within the framework of Relational Grammar, see Perlmutter and Postal (1983).

are so-called psych verbs—predicates like *annoy, excite, frighten, worry, please* as they occur in the following sentences:

(49) a. The exam worried Max.
b. Flies frequently annoy Sam.
c. Cleanliness pleases Felix greatly.

Belletti and Rizzi (1986) discuss the syntax of psych verbs. They cite various facts from English and Italian suggesting that the underlying relations among the arguments in such sentences are very different from what is implied by the surface arrangement NP1–V–NP2. To summarize their results briefly:

(I) Surface subjects (NP1) of psych verbs behave like derived subjects on a variety of tests in Italian. In contrast with subjects of normal transitive verbs (*know, like, admire*, and so on), psych-verb subjects do not license anaphoric clitics, do not have an "arb" interpretation (meaning 'people' or 'one'), and cannot be embedded under causative constructions sensitive to derived versus underived subject status. Furthermore, NP1 behaves as if it has attained subjecthood from a position lower than the surface object (NP2). This is suggested by binding facts. As is well known, the subject of a psych verb can contain a reflexive bound to the object NP (50a,b), something that is not possible with genuine transitives (51a,b):

(50) a. [Nude pictures of herself] don't offend Mary.
b. [Stories about himself] excite John.
(51) a. *[Nude pictures of herself] absolved Mary of the crime.
b. *[Stories about himself] don't describe John very well.

Assuming the usual c-command condition on binding of anaphors, these facts suggest that the surface subject in (50) is actually c-commanded by the object at some level.

(II) The surface object (NP2) behaves like a genuine object with respect to Case marking. Pronominal objects of psych verbs in English and pronominal object clitics in Italian show up in their accusative form. On the other hand, NP2 behaves like a subject with respect to certain anaphoric phenomena. As discussed by Giorgi (1984), the Italian anaphoric possessive *proprio* may function as a long-distance anaphor, and it shows the "subject orientation" typical of such elements. Correlatively, the surface object of a psych verb can bind a long-distance *proprio* embedded within the surface subject:

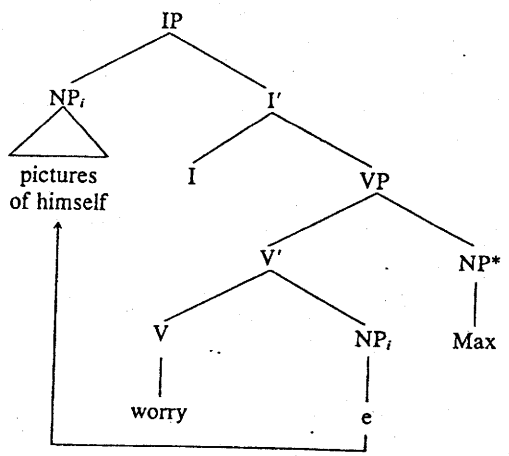
(52) Chiunque dubita della propria$_i$ buona fede preoccupa Gianni$_i$.
'Whoever doubts his own good faith worries Gianni.'
(Belletti and Rizzi (1986, (69b)))

This suggests that at some level the psych-verb object is also a subject.[33]

[33] Belletti and Rizzi (1986) do not actually draw this conclusion, although it is compatible with the structure they assign to psych verbs of the *preoccupare* class.

Belletti and Rizzi (1986) account for these facts with the following structure:

(53)



The basic idea here is that psych verbs are, in effect, unaccusatives with two internal arguments.[34] *Worry* fails to assign Case to one of these (the innermost, *pictures of himself*) and also fails to assign an external thematic role. This forces movement to subject position, as shown. In the resulting structure the surface subject is a derived subject. Furthermore, it attains its position from a site lower than the surface object. If we accept the "anywhere" version of Principle A of the binding theory that Belletti and Rizzi advance, this accounts for the facts in (I).[35] Turning to the surface object, we find that it is in fact a structural (VP) subject—indeed, the "most prominent" (that is, highest) θ-marked subject in (53). This accounts for the long-distance anaphor facts in (52). Finally, the surface object *Max* is also an object for purposes of Case assignment. Belletti and Rizzi suggest that NP* receives an inherent Objective Case assigned by V′.[36]

Notice now that modulo the presence of V Raising, the structural relations holding among complements in (53) are identical to those holding in (40): the surface subject is derived, and it attains subjecthood from a position c-commanded by the surface object.

[34] David Pesetsky has pointed out to me that Belletti and Rizzi's analysis parallels certain Relational Grammar accounts of psych verbs, where the latter have only 2 and 3 arcs, and where "3 → 1" advancement takes place. Given the preceding discussion, this parallelism is not surprising.

[35] See Belletti and Rizzi (1986) for discussion.

[36] Belletti and Rizzi's account of verbs like *worry* and *frighten* can be carried over almost without modification into the analysis proposed here. As it turns out, psych verbs do not (or, at any rate, need not) involve V Raising (see section 7.3). Nonetheless, they satisfy all principles that normally force V Raising. Thus, in the structure in (53) *worry* heads a VP governed by Infl, as required. Furthermore, inherent Objective Case assignment to NP* proceeds in a way fully analogous to what occurs with the outer object in a double object construction: NP* is sister to a V′ whose θ-grid contains a single unsaturated internal argument. The latter is thus subject to V′ Reanalysis and able to Case-mark NP* (see the discussion of (37)).

Moreover, the surface object is both an object and a structural (VP) subject. Such an analysis fills the "gap" in the paradigm of passive-unaccusative pairs in (47) and (48): psych verbs become the unaccusative counterparts of dative passives under a "3 → 1" analysis of the latter. We have both dative passives and "dative unaccusatives."

5. Constraints on Dative Movement in English

As noted earlier, the oblique–double object alternation is not fully productive in English. There are well-known verbs like *donate* and *distribute* that appear in the oblique dative construction but have no double object counterpart (54a); and there are verbs like *envy* and *spare* that occur in double object constructions with no well-formed oblique "source" (54b) (the latter pair is from Dowty (1978)):

(54) a. John donated the money to charity.
*John donated charity the money.
b. The judge spared John the ordeal.
*The judge spared the ordeal to John.

Data like these have led a number of researchers to doubt the derivational connection between oblique and double object forms (Allerton (1978), Dowty (1978), Oehrle (1976; 1983)) and to analyze the relation as a lexical one holding between distinct verb entries. On this view, verbs like *give* are assigned two lexical entries with identical semantic content but distinct subcategorization frames: one that specifies a direct object and PP complement, and a second that specifies two NP objects.

If we are to maintain a derivational analysis of double object structures, then clearly we must give some account of the limitations on Dative Shift. We must find some way of understanding why the latter cannot apply in certain instances (55a) but must apply in others (55b):

(55) a. Oblique → *Double object
b. *Oblique → Double object

Furthermore, this account should obviously be of a general nature: constraints on Dative Shift should be ones applying to other instances of Move α. To motivate an approach to this issue, let us begin by considering the preposition *to* more closely.

5.1. To *as "Case Marking"*

The analysis of Dative Shift presented above makes crucial appeal to the idea that in a VP like *send a letter to Mary*, *to* represents Case marking. It is this assumption that permits us to assimilate Passive and Dative Shift by allowing us to view suppression of *to* as suppression of Case. However, although a Case-marking view of *to* is reasonable in examples like *John sent a letter to Mary*, it is not plausible in other instances:

(56) a. Klaus flew his dirigible to Helgoland.
b. The spoon fell to the floor.
c. Oscar bowed to the queen.
d. The meeting ran from two o'clock to five.

In (56a–d) the goal phrases are all unselected adverbials, and the preposition appears to make a genuine semantic contribution, specifying (roughly) goal of "motion" along some trajectory or path. There is evident notional relatedness between these and the dative instances of *to*; however, *to* does not appear as mere Case marking in (56). These facts thus raise a simple question: how can we maintain our analysis of Dative Shift and still preserve the intuitive identity of *to* across its various uses?

In answer to this question I want to propose that *to* is in fact always contentful—that it is never mere Case marking, strictly speaking—but that in certain contexts (namely, in V's headed by Dative-Shifting verbs) its grammatical contribution effectively "reduces" to Case marking and therefore can be suppressed under Passive. To make this precise, assume that *to* is uniformly an independent preposition in English with its own role to assign. Assume also that although verbs may select an indirect object argument, they cannot assign this argument Case. From the second assumption it follows (under the Case Filter) that a V′ containing a dative verb and an indirect object α can be well-formed only if an independent Case-assigning element like *to* appears: [$_{V'}$ V [$_{PP}$ to α]]. Furthermore, from the first assumption it follows that both V and P must independently assign thematic roles to α. Suppose that *give* and *to* assign the following roles to the indirect object argument:

give: Beneficiary
Goal of motion along some path
to: Goal of motion along some path

Then the suite of θ-roles assigned by V subsumes the role assigned by *to*; hence, the semantic contribution of the latter is redundant. This in turn means that in a V′ like [$_{V'}$ give to Mary] the grammatical contribution of *to* effectively reduces to the Case marking it provides for *Mary*.

It is this sense, I suggest, in which *to* constitutes pure Case marking in dative constructions involving *give*, *send*, and so on. Although the preposition is not, strictly speaking, without semantic content, this content is fully "recoverable" from local syntactic context—specifically, from the verb with which it cooccurs. We may now take it that in such circumstances PASSIVE may absorb *tō* as a Case marker, triggering Dative Shift in the by now familiar way.

5.2. *Oblique → *Double Object: Recoverability*

Given this view of Case and θ-role assignment in V′, a simple approach now opens up for the analysis of verbs like *donate*, *contribute*, and *distribute*—verbs that appear in oblique dative constructions but resist Dative Shift:

(57) a. I donated money to charity.
*I donated charity money.
b. I distributed apples to the children.
*I distributed the children apples.
c. I contributed my time to the auction.
*I contributed the auction my time.

We can view the second member of each pair as violating (the equivalent of) "recoverability of deletion."[37]

Suppose that unlike *give*, *send*, *promise*, and so forth, the verbs in (57) do not specify their third argument as a goal—that is, suppose that *donate* assigns only the Beneficiary role to its indirect object. Consider a V′ like *donate to charity*. Here V and P are semantically compatible under the stated assignments; however, *to* is not redundant—its grammatical contribution does not "reduce" to Case marking. In this situation suppression of *to* would result in an unrecoverable loss of thematic information associated with the preposition. Such suppression will thus be blocked by familiar principles excluding nonrecoverable deletions. Dative Shift will be forbidden from applying.

This analysis of why verbs forbid Dative Shift—namely, because they do not specify the content of *to* in their thematic array—appears to be supported by evidence from the behavior of certain verb-particle constructions. Consider the expressions *give away* and *give out* noted in Green (1974). These compounds contain the Dative-Shifting verb *give* together with a directional adverb particle indicating (roughly) centrifugal motion. Superimposing the latter component upon the meaning of *give* results in phrasal verbs that preserve the notion of "beneficiary" from their stem but intuitively connote only transfer of possession from a source, and not transfer of possession to a goal. Under our account, we expect such verb-particle combinations, like simplex *donate* and *distribute*, to be merely compatible with *to* and hence to resist Dative Shift. This expectation is correct:[38]

(58) a. I gave away money to charity.
*I gave away charity money./*I gave charity away money.
b. I gave out apples to the children.
*I gave out the children apples./*I gave the children out apples.

[37] A related proposal is made by Givón (1984). See also the argument of Culicover (1982) that the availability of Dative Shift depends on the particular semantic contribution made by *to*.

[38] Green (1974) points out that resistance to Dative Shift is not a fact about verb-particle constructions per se. Other such combinations do permit Dative Shift:

(i) a. I will send off a letter to them in the morning.
I will send them off a letter in the morning.
b. Pick out a coat for me.
Pick me out a coat.
(Green (1974, 82))

The latter is a *for*-dative alternation; the former involves *send* and a directional adverbial. (ia) is particularly interesting because of its contrast with (58a,b). *Off* does not appear to affect the goal status of the indirect object, with the result that *send off* is largely synonymous with *send*. The same is not true, of course, with *give* versus *give away*.

The behavior of verb-particle compounds like *give away* and *give out* thus appears to confirm the idea that ability to undergo Dative Shift depends crucially on the directional content of the role assigned to the indirect object. When this content does not include that specified by *to*, or when it is "overwritten" by an added directional adverbial element, Dative Shift fails.

The general proposal that Dative Shift applies freely up to recoverability is consistent with the observation of Marantz (1984) that although the dative alternation does not occur with every verb form taking an oblique indirect object in English, there is nonetheless a relativized sense in which it is fully productive: namely, so long as one remains within certain limits imposed by semantics, the alternation applies quite freely to any predicate taking an indirect object. Marantz draws attention to this relativized productivity in connection with the introduction of new verb forms. Consider a hypothetical verb *shin* meaning 'to kick with the shin', as applied in a sentence like (59a) (Marantz (1984, 177)):

(59) a. Elmer shinned the ball to me during soccer practice.

As Marantz points out, for such verbs, which involve directing an object with a body part, any speaker accepting (59a) will also immediately accept its Dative-Shifted variant (59b) despite the novelty of the form:

(59) b. Elmer shinned me the ball during soccer practice.

This result is expected on the current view: any verb falling within the appropriate semantic class (one that assigns a role to its third argument that subsumes the role assigned by *to*) will allow a recoverable suppression of *to*; hence, Dative Shift will apply freely.[39]

The recoverability hypothesis also suggests a simple approach to double object productivity in other languages. In English dative-type alternations are not available with oblique instrumental or locative phrases, presumably because the relevant prepositional content is not recoverable from V:

(60) a. I cut the salami with a knife.
*I cut a knife the salami.
b. John left his books on the sofa.
*John left the sofa his books.

However, in languages with so-called applicative constructions, alternations parallel to (60a,b) do in fact occur. Consider the following data:

[39] In a similar vein, Pinker (1984) discusses data from the acquisition of dative constructions by children and suggests that the dative alternation is internalized by children as a productive process "whose domain of application is partially constrained" (p. 322). He further proposes that "successful avoidance of ungrammatical forms is a consequence of eventually acquiring appropriate constraints on these rules" (p. 322), where, for Pinker, these constraints are both phonological and semantic-thematic in character.

(61) a. i. Saja mem-bawa surat itu kepada Ali.
I Trans-bring letter the to Ali
'I brought the letter to Ali.'
ii. Saja mem-bawa-kan Ali surat itu.
I Trans-bring-App Ali letter the
'I brought Ali the letter.'
(Bahasa Indonesia; Chung (1976))
b. i. Mereka men-dapat suatu pekerdjaan untuk anak-ku.
they Trans-find a job for child-my
'They found a job for my daughter.'
ii. Mereka men-dapat-kan anak-ku suatu pekerdjaan.
they Trans-find-App child-my a job
'They found my daughter a job.'
(Bahasa Indonesia; Chung (1976))
c. i. Fisi a-na-dul-a chigwe ndi mpeni.
hyena Sp-Past-cut-Asp rope with knife
'The hyena cut the rope with the knife.'
ii. Fisi a-na-dul-ir-a mpeni chigwe.
hyena Sp-Past-cut-App-Asp knife rope
'The hyena cut the rope with the knife.'
(Chichewa; Baker (1985))
d. i. Abaana b-iica-ye ku meeza.
children Sp-sit-Asp on table
'The children are sitting on the table.'
ii. Abaana b-iica-ye-ho meeza.
children Sp-sit-Asp-App table
'The children are sitting on the table.'
(Kinyarwanda; Kimenyi (1980), cited in Baker (1985))

(61c,d) are parallel to the excluded English examples. Note especially the morphological marking in the form of an "applied affix" (App) that appears on the verb.[40]

On our account, we can attribute the broadened scope for double object formation in applicative languages directly to the presence of morphological marking on the verb. Suppose applied constructions are derived via NP Movement analogously to English double object forms, and that the applied affixes in languages like Bahasa Indonesia, Chichewa, and Kinyarwanda are essentially "registration markers" for some particular role like instrument or spatial location. When affixed to V, they specify its manner or location role in such a way as to make the contribution of an overt preposition redundant.

[40] See also Givón (1984). It is interesting to note that Bantuists commonly refer to applicative forms as "voices" of the verb; thus, one speaks of the dative, instrumental, and locative "voice," and so on. This suggests an at least implicit recognition of the connection between passives and double object constructions pursued explicitly here.

This permits P to be absorbed as Case under "Dative" Shift without violating recoverability. Productivity and morphological marking are thus directly linked.[41]

5.3. **Oblique → Double Object: Unaccusativity*

Let us now turn to the second case in which the oblique–double object alternation may fail: the case of verbs like *spare* that allow double objects but have no corresponding oblique forms. Recall the general situation of a V′ containing a three-argument verb and an indirect object argument α: [$_{V'}$ V α]. We have noted that since V cannot itself assign Case to α, some semantically compatible preposition must occur. Suppose now that the grammar simply contains no preposition compatible with the role(s) assigned by V to α. That is, suppose that as a matter of the "semantic fields" carved out by the prepositional system of the language, there is no appropriate P. Then, as a matter of the lexical properties of V (specifically, its meaning), the relevant NP argument must always fail to receive Case.

It is plausible to think that this situation might fall under a version of Burzio's Generalization (Burzio (1986)), which correlates Case and θ-role assignment possibilities. In particular, we might take Burzio's Generalization as implying in this instance that if a verb does not permit Case assignment to the V′ object by virtue of its semantics ruling out any potential prepositional Case assigner, then that verb cannot assign a θ-role to a subject. Such situations would represent a rather special case of "unaccusativity" (Perlmutter (1978; 1983)).[42]

[41] This view does not require applicative morphemes to be analyzed as independent θ-role assigners—prepositions that have been "merged with" or "incorporated into" V—as in Marantz (1984) and Baker (1985). Thus, there is no necessary expectation that applicative affixes will show synchronic or diachronic relations with prepositions, nor even that applicative affixes will be forbidden from appearing in oblique constructions. These results appear to be empirically correct: applied affixes and their prepositional counterparts often show no morphological relatedness (see (61a–d)); applied affixes often derive historically from nonprepositional sources (such as reduced verbs; K. Hale (personal communication)); and applicative morphology can in fact occur redundantly in the oblique construction in languages with applicatives. Chung (1976) points out examples like (ia,b), in which the applied affix *kan* and the benefactive preposition *kepada* cooccur:

(i) a. Laki2 itu meng-irim(-kan) surat kepada wanita itu.
man the Trans-send-Ben letter to woman the
'The man sent a letter to the woman.'

b. Anak laki2 itu mem-bajar(-kan) lima dolar kepada polisi itu.
child male the Trans-pay-Ben five dollar to police the
'The boy paid five dollars to the policeman.'

[42] In the literature Burzio's Generalization is generally stated as requiring that a verb assign Case to its object iff it assigns a thematic role to its subject:

(i) V assigns Case ↔ V assigns θ

However, this formulation is problematic, if, as argued by Marantz (1984), verbs do not assign thematic roles to subjects, but rather *verb phrases* do. Given Marantz's claim, a more accurate formulation would appear to be (ii):

(ii) V assigns Case ↔ V′ assigns θ

This revision allows for an interesting view of the intuitive content of Burzio's Generalization. As stated in (ii), Burzio's Generalization can be seen as establishing a correlation between two distinct notions of "predicate"—in particular, between the notion "syntactically well-formed predicate" (one that integrates an object phrase in the grammatically licensed way) and the notion "semantically well-formed predicate" (one that assigns a θ-role).

I want to propose that obligatory double object formation represents a case of unaccusativity in this sense—that the relevant verbs are thematically incompatible with any potential Case assigner and hence force their third argument to undergo movement. I illustrate this proposal with the example of *spare*. The verb *spare* has the interesting semantic property that its notional indirect object argument, although a beneficiary, is not, and cannot be, a goal. In *The judge spared John the ordeal* John benefits by the action of judge; however, benefit accrues precisely because the ordeal in question does *not* go to John. Thus, *to* is semantically incompatible with the role *spare* assigns to its third argument:

(62) a. *The judge spared the ordeal to John.

Other potential prepositions are unavailable as well. Note that although the indirect object of *spare* is notionally not a goal, neither is it a source. In *The judge spared John the ordeal* the ordeal in no way originates with John. Accordingly, *spare* rejects the preposition *from*, and it contrasts with verbs like *rob*, whose notional indirect object (when it occurs) is a source:

(62) b. The judge robbed money from John.
c. *The judge spared heartache from John.

Note also that in constructions employing the preposition *of* to mark loss or nonpossession (such as *I deprived John of his livelihood, Max relieved Oscar of his duties*), the preposition uniformly marks the theme (*his livelihood, his duties*) and not the beneficiary/maleficiary (*John*). So *of* cannot "rescue" an oblique construction with *spare*:

(62) d. *The judge spared the ordeal of John.

Other cases are analogous. Thus, since *spare* effectively forbids Case assignment to its indirect object, under Burzio's Generalization it assigns no thematic role to a subject. Hence, the third argument of *spare* obligatorily undergoes NP Movement, as required.[43]

[43] Nothing in this proposal hinges on whether the absence of the relevant preposition for *spare* reflects historical accident or deeper facts about the "space" of human prepositional concepts.

An anonymous LI reviewer suggests that the explanation for why *spare* does not permit NP–PP complementation may be weakened by the existence of the verb *deny*. *Deny* takes a dative argument that superficially does not seem to be a goal:

(i) This law denies to felons the right to vote.

In fact, however, the nongoal status of the *to*-object is not clear. Dictionaries standardly define *deny* in the sense intended in (i) in terms of a dative—that is, to 'deny' is to 'refuse to grant or give':

(ii) The law refuses to grant to felons the right to vote.

This close relation between *give* and *deny* also underlies the intended contrast in (iii):

(iii) You give her everything and deny her nothing.

It thus seems plausible to conjecture that the *to*-object of *deny* actually does bear the goal role by virtue of the implicit dative relation "contained within" or entailed by the meaning of *deny*.

Certain cases of obligatory double objects appear to involve factors beyond unaccusativity in the sense discussed here. Consider additional examples of the following kind drawn from Green (1974):

(63) a. Mary gave John a cold.
*Mary gave a cold to John.
b. Mary gave John a broken arm.
*Mary gave a broken arm to John.
c. Mary gave John a black eye.
*Mary gave a black eye to John.

(64) a. Mary gave John a bath.
*Mary gave a bath to John.
b. Mary gave John a kiss.
*Mary gave a kiss to John.
c. Mary gave John a punch in the nose.
*Mary gave a punch in the nose to John.

Intuitively, the oddness in the second example of each pair does seem to derive in part from the difficulty of understanding the direct object as undergoing "motion" along some path. A black eye, a broken arm, a bath, or a kiss in no sense travels from Mary to John, which is to say that the compositional semantics of the VP is not fully compatible with the direction/path component of meaning contributed by *to*.

Nonetheless, there appears to be an extra dimension of "affectedness" at work in (63) and (64) that favors the double object versus the oblique construction. In all of (63) and (64) there is a strong sense in which the deep indirect object (*John*) names the individual affected by the action described in the clause, and in which the deep direct object (*a cold, a bath*, and so on) does not. This is particularly clear in the second set of cases, where the examples can be paraphrased by a simplex verb with an affected object:

(65) a. Mary bathed John.
b. Mary kissed John.
c. Mary punched John in the nose.

Now as discussed in Tenny (1987), the surface direct object position is the canonical site of affected objects. Hence, in addition to the effects of unaccusativity, the preferred status of the Dative-Shifted form in (63) and (64) may well reflect the strong preference for having the notional affected argument in the appropriate structural position.[44]

[44] Affectedness appears to play a role in a variety of cases involving dative alternations. As pointed out to me by K. Johnson, Oehrle (1976) notes that in pairs of examples like the following the second more strongly carries the implication that the students have actually learned the subject matter:

(i) a. Max taught French to the students.
b. Max taught the students French.

We might understand this as reflecting the affected object status of *the students* in (ia) versus (ib). Canonically, one is affected by teaching insofar as one learns. Consider also *for*-dative alternations of the following kind noted by Kayne (1975):

(ii) a. I knitted this sweater for our baby.
b. I knitted our baby this sweater.

Although (iia) is perfectly acceptable as an utterance by a pregnant wife to her husband, the second is decidedly odd in this context because it appears to require the baby's present existence. Again, we can understand this judgment as resulting from the fact that *our baby* occupies the position of affected arguments in (iib), and only extant individuals can be affected.

In closing this discussion of constraints on Dative Shift, it is worth pointing out that our proposals will extend correctly to dative passive constructions. In particular, we can maintain the "3 → 1" analysis of such constructions and still explain why, when a verb fails to allow Dative Shift, it also fails to allow a dative passive (66a–d) (from Dowty (1978)) and why, when a verb has only a Dative-Shifted form and no simple dative, it permits only a dative passive (67a–d) (also from Dowty (1978)):

(66) a. John donated the money to the foundation.
b. *John donated the foundation the money.
c. The money was donated to the foundation (by John).
d. *The foundation was donated the money (by John).

(67) a. *The judge kindly spared the ordeal to John.
b. The judge kindly spared John the ordeal.
c. *The ordeal was kindly spared John (by the judge).
d. John was kindly spared the ordeal (by the judge).

On the present account, dative passive and double object derivations differ solely in which θ-role is demoted—IP subject or VP subject, respectively. Since both involve the same transformational operation, we expect the same constraints to apply. Thus, if the preposition *to* is not recoverable from *donate* under the derivation responsible for (66b), then it will not be recoverable under the derivation responsible for (66d). Likewise, if *spare* cannot assign Case to *John* in conjunction with a preposition (67a), then *John* will have to undergo movement whether it ends up in VP subject position (67b) or in IP subject position (67d); in no case will some other argument be allowed to be moved (67c).

6. Two Cross-linguistic Questions

The analysis of double objects proposed above raises certain natural questions when facts from languages other than English are considered.[45]

I have suggested that the *to* appearing in datives like *John gave a book to Mary* amounts to Case marking and that its disappearance in double object structures is equivalent to the absorption of Case marking in passives. However, it is well known that, quite generally, "true" Dative Case marking cannot be suppressed under Passive. For

[45] I am grateful to both anonymous LI reviewers for directing me to these issues, and to one in particular for discussion of the facts in (68).

example, in German the verb *helfen* imposes Dative Case upon its object (68a). However, this case cannot be absorbed under Passive (68b); rather, the dative argument must remain internal and the passive surface as an impersonal construction (68c):

(68) a. Hans hilft ihm.
Hans helps him(Dat)
b. *Er(Nom) wurde geholfen.
he was helped
c. i. Es wurde ihm geholfen.
it was him(Dat) helped
ii. Ihm wurde geholfen.
him(Dat) was helped
'He was helped.'

Similar facts obtain in Russian, as discussed by Freidin and Babby (1984). Although Russian permits passive of accusative objects (69), passive of predicates that impose dative (or other oblique cases) upon their objects is not permitted (70):

(69) a. Ivan čitaet knigu.
Ivan(Nom) reads book(Acc)
'Ivan is reading the book.'
b. Kniga čitaetsja (Ivanom).
book(Nom) is-being-read (Ivan(Inst))
'The book is being read by Ivan.'

(70) a. Rabotnik podražaet inostrannym metodam.
worker(Nom) copies foreign(Dat) methods(Dat)
'The worker is copying foreign methods.'
b. *Inostrannye metody podražajutsja rabotnikom.
foreign(Nom) methods(Nom) are-copied worker(Inst)
'Foreign methods are being copied by the worker.'

Freidin and Babby (1984) suggest that this result follows from the rather natural principle that lexical properties must be expressed. (70b) violates this principle since the lexical Case-marking property of *podražaet* 'copies'—the fact that it assigns dative—fails to be expressed. The first question is thus the following: How does our analysis of Dative Shift square with the observation that cross-linguistically, dative and other oblique cases cannot be suppressed under Passive?

A second question concerns the fact that although Dative Shift is possible in English and various Germanic languages (for instance, Dutch and Danish (71a,b)), this alternation is not universally available. For example, French and various other Romance languages forbid it (72a,b):

(71) *Dutch*
a. i. Zij gaf het boek an de man.
she gave the book to the man

ii. Zij gaf de man het boek.
she gave the man the book
Danish (Herslund (1986))
b. i. Han sendte blomster til sin sekretær.
he sent flowers to his secretary
ii. Han sendte sin sekretær blomster.
he sent his secretary flowers

(72) *French* (Kayne (1983a))
a. i. Jean a donné un livre à Marie.
John has given a book to Mary
ii. *Jean a donné Marie un livre.
John has given Mary a book
Spanish
b. i. Juan dio un libro a Maria.
John gave a book to Mary
ii. *Juan dio Maria un libro.
John gave Mary a book

Since double object constructions are analogous to passives on the present account, and since the Romance languages possess passive formations (*Ces lettres ont été écrites par mon frère* 'These letters were written by my brother'), we would like to know why Dative Shift is unavailable in Romance.

To answer these questions, I will appeal to a proposal by Kayne (1981) regarding why preposition stranding is possible in English but forbidden in many other languages, including Romance languages like French and Spanish. Kayne suggests that the basic property of English that permits preposition stranding is that its prepositions assign Objective Case. This allows prepositions in English to be thematically reanalyzed with the verb when a prepositional object is extracted, which in turn permits the trace of the latter to be licensed under the Empty Category Principle (ECP). In languages like French and Spanish, where prepositions assign Oblique Case, reanalysis is blocked owing to Case conflict between V (an Objective Case assigner) and P (an Oblique Case assigner); this results in an ECP violation whenever a prepositional object is extracted.

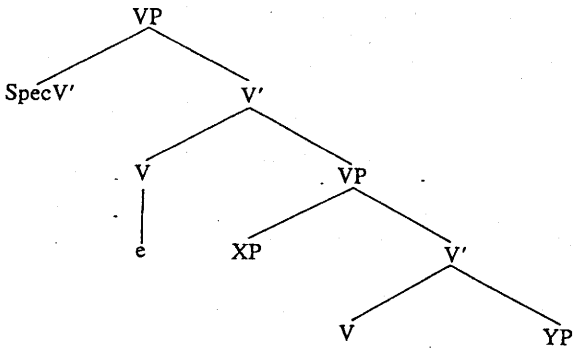
If we adopt Kayne's (1981) proposal, then our two questions are directly answered. First, English double object formation (and its analogues in Dutch and Danish) will *not* in fact involve suppression of Oblique (Dative) Case, as in the ill-formed German and Russian examples in (68b) and (70b). The Case assigned by *to* will be Objective; hence, its absorption is fully parallel to absorption of the Objective Case assigned by verbs. Likewise, the cross-linguistic differences in the availability of Dative Shift will follow. Assuming that Oblique Case cannot be suppressed (perhaps for the reasons suggested by Freidin and Babby (1984)), it will be possible to have Dative Shift only when *to* (or its equivalent) is an Objective Case assigner. Dative Shift will thus be impossible in

French, Italian, and Spanish, where Oblique Case is assigned by P, but possible in the preposition-stranding languages like English, Dutch, and Danish.[46]

7. The Projection of Raising Structures

In analyzing dative and double object constructions, D-Structure forms like the following have played a central role:

(73)



The obvious question arises: Where do such structures come from? How are they projected? In this section I will briefly suggest an answer, involving a restricted version of X-bar theory operating together with principles for mapping thematic relations onto syntactic structure.

7.1. The Single Complement Hypothesis

Chomsky (1970) proposes that phrasal configurations in natural language subscribe to a universal schematism known as *X-bar structure*. This schematism is now widely held to be given by the two rules in (74) (from Stowell (1981)),

(74) a. $XP \rightarrow SpecX'\ X'$
b. $X' \rightarrow X\ \ YP^*$

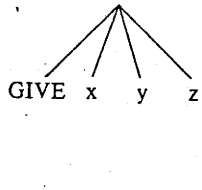
where X ranges over any category (N, V, and so on), where SpecX′ is the position of specifiers for XP, including determiners and subjects, and where YP* is a finite string of complements (possibly null) of the head X.

The X-bar scheme in (74) accepts a view of long standing within the grammatical tradition, namely, that there is a fundamental, twofold asymmetry between subjects and complements. First, there is a basic structural asymmetry. The head together with its

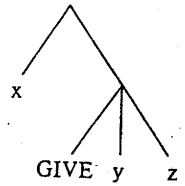
[46] Kayne (1981; 1983a) also takes the contrast in prepositional Case assignment in French and English to explain the absence of double objects in the former. However, the use he makes of this idea is quite different from what is assumed here.

complements jointly constitute a predicate phrase (X′) that excludes the subject. As a result, complements have a subordinate hierarchical status vis-à-vis subjects. Second, there is a basic numerical asymmetry. As the presence of the (Kleene) star "*" indicates, although X can have arbitrarily many complements, XP can have at most one subject. These two properties constitute an empirical hypothesis about how natural language realizes the relations between a predicate and its arguments; neither is required from a purely formal point of view. In artificial languages a three-place relation like GIVE(x,y,z) can equally well be represented as taking all of its arguments jointly, with no hierarchical differences among them (75a), as taking the last two and predicting the result of the first (75b), or as taking the last and predicating the result of the first two (75c):

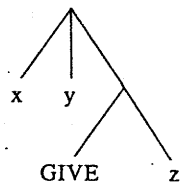
(75) a.



b.



c.



Choice among these is purely a matter of formal convenience.

Consider now eliminating one of the two subject-complement asymmetries just mentioned. In particular, consider amending the rules for X-bar structure as follows:[47]

(76) a. $XP \rightarrow SpecX'\ X'$
b. $X' \rightarrow X\ \ YP$

Like the rules in (74), (76a,b) impose a fundamental structural asymmetry between subjects and complements. The latter remain subordinate to the former. Unlike the rules in (74), however, (76a,b) eliminate the numerical asymmetry between subjects and complements. According to (76b), just as there can be at most one subject per maximal projection, so there can be at most one complement. In intuitive terms, one might understand this revision as making the following claim: natural language distinguishes one kind of relation as fundamental, namely, the transitive one. This involves a relation between two arguments, a subject and an object. We will say that (76a,b) embody a *Single Complement Hypothesis* about X-bar structure.

7.2. Principles of Argument Realization and Projection

In addition to the Single Complement Hypothesis, I will assume two principles governing the projection of arguments vis-à-vis their predicates. The first concerns the domain in which arguments of a predicate are realized:

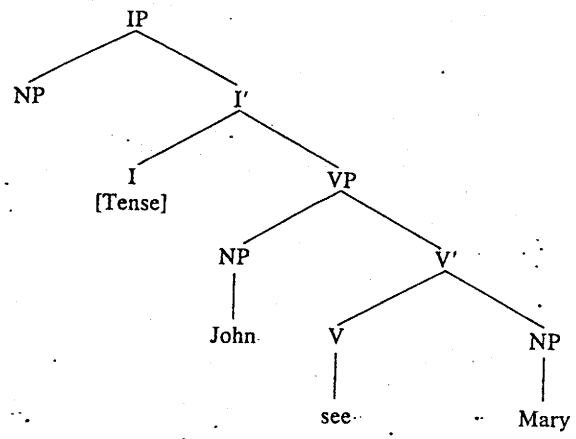
[47] The version of X-bar theory in (76) is closely related to Montague's (1974) use of curried functions and effectively embodies Kayne's (1983b) binary branching requirement. See also Kuroda's (forthcoming) discussion of "completed X-bar theory."

P1

If α is a predicate and β is an argument of α, then β must be realized within a projection headed by α.

This principle imposes a very tight relation between thematic and categorial structure. For example, it virtually forces the analysis of clauses argued for by Kitagawa (1986), Kuroda (forthcoming), Speas and Fukui (1986), and Sportiche (1988), where the subject of IP is located underlyingly within VP. According to these authors, a sentence like *John saw Mary* begins with a structure like that in (77),

(77)



where *John* is an underlying VP subject and hence realized within a projection of the predicate from which it receives a θ-role (*see*). On these views, *John* raises to IP subject position at S-Structure in order to receive Case (see above references for discussion and supporting arguments).

The second principle governs the relative subordination of arguments in D-Structure. Assume the following hierarchy of thematic relations due essentially to Carrier-Duncan (1985):

Thematic Hierarchy

AGENT > THEME > GOAL > OBLIQUES (manner, location, time, . . .)

Then the roles assigned by a verb are linked to arguments according to P2:

P2

If a verb α determines θ-roles $\theta_1, \theta_2, \ldots, \theta_n$, then the lowest role on the Thematic Hierarchy is assigned to the lowest argument in constituent structure, the next lowest role to the next lowest argument, and so on.

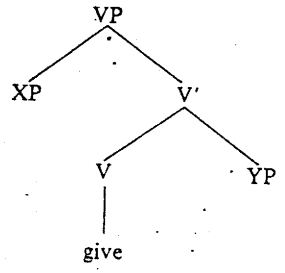
Thus, P2 translates relative position on the Thematic Hierarchy into relative structural subordination of complements, with arguments bearing the lowest-ranked role being most subordinate.[48]

Finally, I will assume an interpretation of θ-theory according to which if a predicate α determines *n* thematic roles, then it also determines *n* argument positions, *whether its roles are actually assigned to those positions or not*. The point of this specification is to ensure that an argument position for a given role is projected even when the role in question is demoted and assigned in an adjunct configuration. What I am saying by this interpretation is that θ-theory is, in effect, "blind" to adjunct assignment—that in order to satisfy θ-theory a structure must show as many A-positions as it has thematic roles.

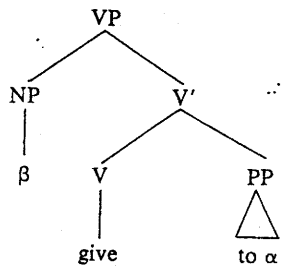
7.3. *Illustration: Raising Structures for* Give

Let us examine how these principles apply in sentences containing a verb like *give* (that is, a verb having more than two roles to project). The X-bar scheme in (76) admits the structure (78a). Assuming now that all roles are projected into A-positions (in other words, no roles are demoted), the result is structure (78b), in which (according to P2) α is assigned the Goal role, and β is assigned the Theme role:

(78) a.



b.

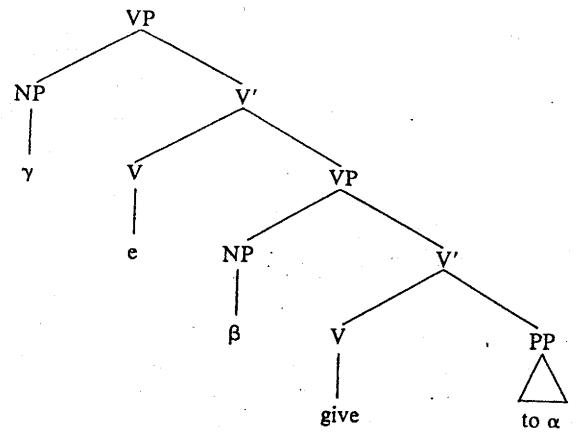


The latter structure leaves one argument—the Agent—unprojected. At this point we seem to encounter conflicting requirements imposed by θ-theory, X-bar theory, and the realization principle P1. The first demands that the Agent role be expressed. The second excludes the expression of this argument within the simple X-bar projection of V in (78b). Finally, the third demands that the Agent argument be realized within a projection headed by V.

I want to suggest that this situation is resolved by the grammar through the projection of structures like those assumed here:

[48] The Thematic Hierarchy is essentially the thematic relations counterpart of the Relational Hierarchy of Perlmutter and Postal (1983).

(79)



Here VP becomes the complement of an X-bar "shell," whose head is empty and hence without independent thematic requirements, and whose specifier is γ. Structure (79) constitutes something like the "minimal, purely structural elaboration" of (78) that supplies an A-position for the Agent argument γ of *give* (satisfying θ-theory), conforms to X-bar theory, and allows for satisfaction of the principle P1. The latter is satisfied by V-Raising, which places γ within a projection headed by *give*.[49]

The projection of a double object D-Structure form proceeds as in the oblique case; however, instead of projecting the Theme into the VP subject position (78b), we demote this role and realize it as an adjunct (78b'). Since (by assumptions) *give* must determine

[49] This result suggests an alternative to our earlier assumption that V Raising is forced by the demands of Case assignment and tense agreement (see the discussion of (14)). Given the above remarks, it becomes possible to motivate V Raising through a requirement on the mapping of categorial and thematic structure: each argument must be governed by its head at some derivational stage.

The considerations adduced for *give* apply equally to any three-argument verb, including, for example, *put* and *talk*. These too will involve VP complementation structures:

(i) a. John [$_{V'}$ put [$_{VP}$ a fly [$_{V'}$ t in the soup]]]

b. John [$_{V'}$ talked [$_{VP}$ to Felix [$_{V'}$ t about Mary]]]

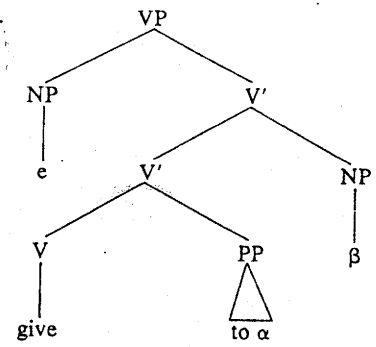
Similarly for a two-argument verb that takes an adverbial modifier. According to the Thematic Hierarchy, adverbials and obliques will be projected in the innermost complement position (see also footnote 11); this will force the creation of a VP shell with subsequent V Raising:

(i) c. John [$_{V'}$ saw [$_{VP}$ Mary [$_{V'}$ t recently]]]

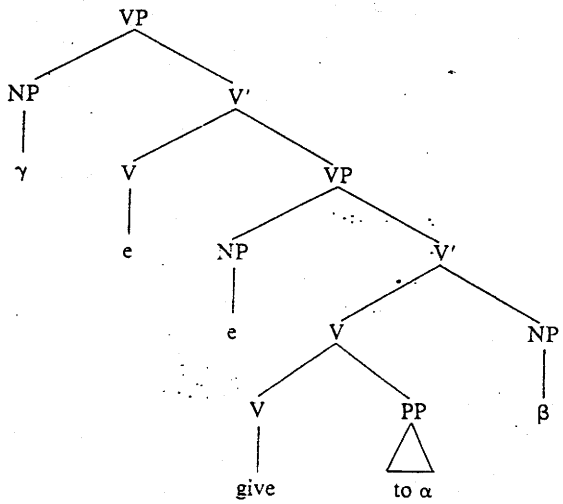
These principles will also dictate the projection of multiple levels of VP complementation, and iterated V Raising, when a three-argument verb itself takes a modifier:

(i) d. John [$_{V'}$ sent [$_{VP}$ a note [$_{V'}$ t [$_{VP}$ to Max [$_{V'}$ t on Tuesday]]]]]

(78) b'.



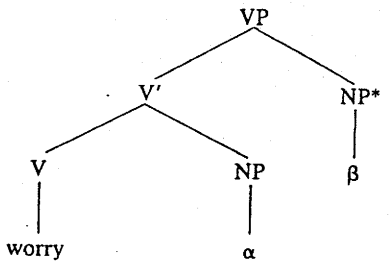
(80)



as many A-positions as roles, a VP shell is again generated and the Agent role is assigned (up to demotion) to its specifier, as in (80). The S-Structure derivation then proceeds as discussed above.

Since the projection of empty structure for a verb like *give* crucially depends on the presence of a third, external argument, this entails that psych verbs of the sort discussed earlier will not involve V Raising. Recall that such verbs involve two internal arguments but no external argument. Accordingly, the VP for such examples will contain all arguments of the verb:

(81)



This structure, which is just the one argued for by Belletti and Rizzi (1986), satisfies θ-theory, the restricted X-bar theory in (76), and the realization principle P1. Hence, no empty V projections are licensed, and no V Raising occurs. Nonetheless, as observed earlier, all requirements that would normally compel raising are met in this structure.[50]

7.4. V' Reanalysis Again

The version of X-bar theory adopted here provides a rather natural motivation for V' Reanalysis, which was introduced earlier in connection with "Heavy NP Shift" and which played an important part in the analysis of Case assignment with double objects. Consider two alternative characterizations of the notion "transitive predicate":

(82) a. α is a *transitive predicate* $=_{df}$ α has one unsaturated internal argument
b. α is a *transitive predicate* $=_{df}$ α is an X^0 category

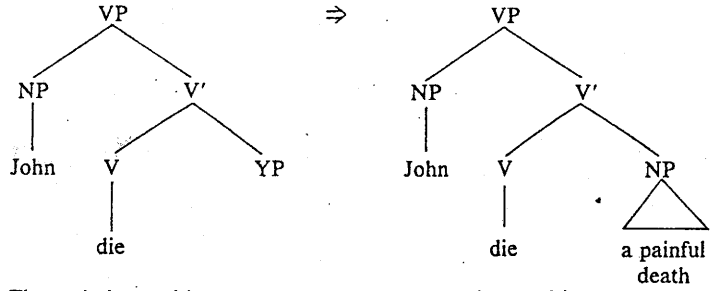
The first definition is made available by θ-theory. In terms of thematic grids, a transitive predicate is one taking a direct object, that is, one determining an internal thematic role. The second is made available by our restricted version of X-bar theory. Recall that according to (76), heads—X^0 categories—determine a subject (SpecX') and a complement; hence, the notion of head and transitive predicate fall together.

Now of course definitions (82a) and (82b) do not coincide precisely. In fact, they may fail to coincide in one of two ways: a head may not determine even one internal θ-role, as with "unergative" verbs like *run* and *sneeze*. This results in a D-Structure form with less than the full X-bar characterization of "transitive predicate." Alternatively, a head may determine more than one internal θ-role, as with dative verbs like *give* and *worry*. This results in some proper projection of V (for example, a V' like *give to Mary*), meeting the θ-theoretic characterization of "transitive predicate" rather than V itself.

In the first case general principles appear to be operating that freely allow unergative verbs to be "thematically reconstrued" as transitives. The result is the appearance of so-called cognate objects, as in *run a race, jump a mighty jump, sneeze a little sneeze, die a painful death*:

[50] Recall that the right-peripheral position of the specifier of VP (NP*) permits V' Reanalysis and Case assignment identical to what occurs with double objects.

(83) Unergatives: Cognate Object Formation

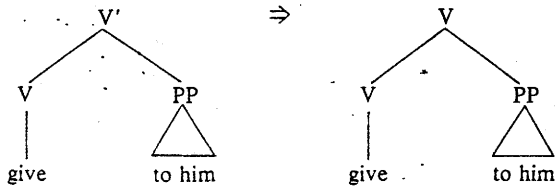


Thematic intransitive
Categorial transitive

Thematic transitive
Categorial transitive

I would like to suggest that V' Reanalysis represents something like the counterpart of cognate object formation for the second case. Whereas unergative verbs like *run* and *die* undergo an "adjustment" in the thematic structure of V to match its status as a lexical category (V^0), verbs like *give* and *worry* undergo an adjustment in category to match the status of V as a thematic transitive:

(84) Ditransitives: V' Reanalysis



Thematic transitive
Categorial nontransitive

Thematic transitive
Categorial transitive

In both instances the outcome is the same: the θ-theoretic and X-bar-theoretic notions of transitive predicate are "realigned."

References

Allerton, D. (1978) "Generating Indirect Objects in English," *Journal of Linguistics* 14, 21–33.
Aoun, J. and D. Sportiche (1983) "The Formal Theory of Government," *The Linguistic Review* 2, 211–236.
Bach, E. (1979) "Control in Montague Grammar," *Linguistic Inquiry* 10, 515–531.
Baker, M. (1985) *Incorporation: A Theory of Grammatical Function Changing*, Doctoral dissertation, MIT. Cambridge. Massachusetts.
Barss, A. and H. Lasnik (1986) "A Note on Anaphora and Double Objects," *Linguistic Inquiry* 17, 347–354.

Bell, S. (1983) "Advancements and Ascensions in Cebuano," in D. Perlmutter, ed., *Studies in Relational Grammar 1*, University of Chicago Press, Chicago, Illinois.
Belletti, A. and B. Levin (1985) "On VP-PP Constructions," ms., MIT, Cambridge, Massachusetts.
Belletti, A. and L. Rizzi (1986) "Psych-verbs and Theta-theory," ms., MIT, Cambridge, Massachusetts.
Burzio, L. (1986) *Italian Syntax*, Reidel, Dordrecht.
Carrier-Duncan, J. (1985) "Linking of Thematic Roles in Derivational Word Formation," *Linguistic Inquiry* 16, 1–34.
Chomsky, N. (1955/1975) *The Logical Structure of Linguistic Theory*, University of Chicago Press, Chicago, Illinois.
Chomsky, N. (1970) "Remarks on Nominalization," in R. Jacobs and P. Rosenbaum, eds., *Readings in English Transformational Grammar*, Ginn and Company, Waltham, Massachusetts.
Chomsky, N. (1981) *Lectures on Government and Binding*, Foris, Dordrecht.
Chomsky, N. (1982) *Some Concepts and Consequences of the Theory of Government and Binding*, MIT Press, Cambridge, Massachusetts.
Chomsky, N. (1986a) *Knowledge of Language: Its Nature, Origin, and Use*, Praeger, New York.
Chomsky, N. (1986b) *Barriers*, MIT Press, Cambridge, Massachusetts.
Christensen, K. (1982) "On Multiple Filler-Gap Constructions in Norwegian," in E. Engdahl and E. Ejerhed, eds., *Readings on Unbounded Dependencies in Scandinavian Languages*, Umea Studies in the Humanities 43, Umea, Sweden.
Christensen, K. (1987) "Modern Norwegian *Ingen* and the Ghost of an Old Norse Particle," to appear in M. Barnes, ed., *Proceedings of the 7th Biennial Conference of Teachers of Scandinavian in the British Isles*.
Chung, S. (1976) "An Object-Creating Rule in Bahasa Indonesia," *Linguistic Inquiry* 7, 41–87.
Culicover, P. (1982) *Syntax*, Academic Press, New York.
Czepluch, H. (1982) "Case Theory and the Dative Construction," *The Linguistic Review* 2, 1–38.
Dowty, D. (1978) "Governed Transformations as Lexical Rules in a Montague Grammar," *Linguistic Inquiry* 9, 393–426.
Dowty, D. (1979) "Dative 'Movement' and Thomason's Extensions of Montague Grammar," in S. Davis and M. Mithun, eds., *Linguistics, Philosophy and Montague Grammar*, University of Texas Press, Austin.
Dowty, D. (1982) "Grammatical Relations and Montague Grammar," in P. Jacobson and G. K. Pullum, eds., *The Nature of Syntactic Representation*, Reidel, Dordrecht.
Dryer, M. (1987) "On Primary Objects, Secondary Objects and Antidative," *Language* 62, 808–845.
Emonds, J. (1972) "Evidence That Indirect Object Movement Is a Structure-Preserving Rule," *Foundations of Language* 8, 546–561.
Engdahl, E. (1983) "Parasitic Gaps," *Linguistics and Philosophy* 6, 5–34.
Feldman, H. (1978) "Passivizing on Datives in Greek," *Linguistic Inquiry* 9, 499–502.
Fillmore, C. (1965) *Indirect Objects and the Ordering of Transformations*, Mouton, The Hague.
Freidin, R. and L. Babby (1984) "On the Interaction of Lexical and Syntactic Properties: Case Structure in Russian," in *Cornell Working Papers in Linguistics* 6, Cornell University, Ithaca, New York.
Gary, J. and E. Keenan (1977) "On Collapsing Grammatical Relations in Universal Grammar," in P. Cole and J. Sadock, eds., *Syntax and Semantics 8: Grammatical Relations*, Academic Press, New York.

Giorgi, A. (1984) "Toward a Theory of Long Distance Anaphors," *The Linguistic Review* 3, 307–361.
Giorgi, A. (1987) "The Notion of Complete Functional Complex: Some Evidence from Italian," *Linguistic Inquiry* 18, 511–518.
Givón, T. (1984) "Direct Object and Dative Shifting: Semantic and Pragmatic Case," in F. Plank, ed., *Objects*, Academic Press, London.
Green, G. (1974) *Semantics and Syntactic Regularity*, Indiana University Press, Bloomington.
Haegeman, L. and H. van Riemsdijk (1986) "Verb Projection Raising, Scope, and the Typology of Rules Affecting Verbs," *Linguistic Inquiry* 17, 417–466.
Hale, K. (1972) "Person Marking in Walbiri," in S. Anderson and P. Kiparsky, eds., *A Festschrift for Morris Halle*, Holt, Rinehart and Winston, New York.
Hawkins, R. (1981) "On 'Generating Indirect Objects in English': A Reply to Allerton," *Journal of Linguistics* 17, 1–9.
Herslund, M. (1986) "The Double Object Construction in Danish," in L. Hellan and K. Christensen, eds., *Topics in Scandinavian Syntax*, Reidel, Dordrecht.
Jacobson, P. (1983) "Grammatical Relations," paper presented at the 1983 Winter meeting of the Linguistic Society of America. Minneapolis, Minnesota.
Jacobson, P. (1987) "Phrase Structure, Grammatical Relations and Discontinuous Constituents," in G. Huck and A. Ojeda, eds., *Syntax and Semantics 20: Discontinuous Constituency*, Academic Press, New York.
Jaeggli, O. (1986) "Passive," *Linguistic Inquiry* 17, 587–622.
Jelinek, E. (1984) "Empty Categories. Case and Configurationality," *Natural Language and Linguistic Theory* 2, 39–76.
Johns, A. (1984) "Dative 'Movement' in Eskimo," in D. Testen, V. Mishra, and J. Drogo, eds., *Papers from the Parasession on Lexical Semantics*, Chicago Linguistic Society, University of Chicago, Chicago, Illinois.
Johnson, K. (1987) "Against the Notion 'SUBJECT'," *Linguistic Inquiry* 18, 354–361.
Kayne, R. (1975) *French Syntax*, MIT Press, Cambridge, Massachusetts.
Kayne, R. (1981) "On Certain Differences between French and English," *Linguistic Inquiry* 12, 349–371.
Kayne, R. (1983a) "Datives in French and English," in *Connectedness and Binary Branching*, Foris, Dordrecht.
Kayne, R. (1983b) "Unambiguous Paths," in *Connectedness and Binary Branching*, Foris, Dordrecht.
Keenan, E. (1975) "Some Universals of Passive in Relational Grammar," in R. Grossman, L. J. San, and T. Vance, eds., *Proceedings of the Eleventh Regional Meeting of the Chicago Linguistic Society*, University of Chicago, Chicago, Illinois.
Kimenyi, A. (1980) *A Relational Grammar of Kinyarwanda*, University of California Press, Berkeley.
Kitagawa, Y. (1986) "NIC Extensions." to appear in *Proceedings of NELS 17*.
Koopman, H. (1985) "On Deriving Deep and Surface Order," in C. Jones and P. Sells, eds., *Papers from the Fourteenth Annual Meeting of NELS*, GLSA, University of Massachusetts, Amherst.
Kuroda, S.-Y. (forthcoming) "Whether We Agree or Not: A Comparative Syntax of English and Japanese," to appear in *Lingvisticae Investigationes* 12.1.
Larson, R. (1987) "*Promise* and the Theory of Control," ms., MIT, Cambridge, Massachusetts.
Larson, R. (in preparation) "The Nature of 'Heavy NP Shift'."
McConnell-Ginet, S. (1982) "Adverbs and Logical Form," *Language* 58, 144–184.

Marantz, A. (1984) *On the Nature of Grammatical Relations*, MIT Press, Cambridge, Massachusetts.
Montague, R. (1974) "The Proper Treatment of Quantification in Ordinary English," in R. Thomason, ed., *Formal Philosophy*, Yale University Press, New Haven, Connecticut.
Oehrle, R. (1976) *The Grammatical Status of the English Dative Alternation*, Doctoral dissertation, MIT, Cambridge, Massachusetts.
Oehrle, R. (1983) "The Inaccessibility of the Inner NP: Corrections and Speculations," *Linguistic Analysis* 12, 159–171.
Perlmutter, D. (1978) "Impersonal Passives and the Unaccusative Hypothesis," in *Proceedings of the Fourth Annual Meeting of the Berkeley Linguistics Society*, University of California, Berkeley.
Perlmutter, D., ed. (1983) *Studies in Relational Grammar 1*, University of Chicago Press, Chicago, Illinois.
Perlmutter, D. and P. Postal (1983) "Some Proposed Laws of Basic Clause Structure," in D. Perlmutter, ed. (1983).
Perlmutter, D. and C. Rosen, eds. (1984) *Studies in Relational Grammar 2*, University of Chicago Press, Chicago, Illinois.
Pica, P. (1986) "On the Nature of the Reflexivization Cycle," to appear in *Proceedings of NELS 17*.
Pinker, S. (1984) *Language Learnability and Language Development*, Harvard University Press, Cambridge, Massachusetts.
Reinhart, T. (1979) "Syntactic Domains for Semantic Rules," in F. Guenthner and S. Schmidt, eds., *Formal Semantics and Pragmatics for Natural Language*, Reidel, Dordrecht.
Rizzi, L. (1986) "Null Objects in Italian and the Theory of *pro*," *Linguistic Inquiry* 17, 501–557.
Roberts, I. (1985) "Agreement Parameters and the Development of English Modal Auxiliaries," *Natural Language and Linguistic Theory* 3, 21–58.
Rouveret, A. and J.-R. Vergnaud (1980) "Specifying Reference to the Subject: French Causatives and Conditions on Representations," *Linguistic Inquiry* 11, 97–202.
Sag, I., G. Gazdar, T. Wasow, and S. Weisler (1985) "Coordination and How to Distinguish Categories," *Natural Language and Linguistic Theory* 3, 117–171.
Shimizu, M. (1975) "Relational Grammar and Promotion Rules in Japanese," in R. Grossman, L. J. San, and T. Vance, eds., *Proceedings of the Eleventh Regional Meeting of the Chicago Linguistic Society*, University of Chicago, Chicago, Illinois.
Speas, M. and N. Fukui (1986) "Specifiers and Projection," ms., MIT, Cambridge, Massachusetts.
Sportiche, D. (1988) "A Theory of Floating Quantifiers and Its Corollaries for Constituent Structure," *Linguistic Inquiry* 19.3 (this issue).
Sproat, R. (1985) "Welsh Syntax and VSO Structure," *Natural Language and Linguistic Theory* 3, 173–216.
Stowell, T. (1981) *Origins of Phrase Structure*, Doctoral dissertation, MIT, Cambridge, Massachusetts.
Tenny, C. (1987) *Grammaticalizing Aspect and Affectedness*, Doctoral dissertation, MIT, Cambridge, Massachusetts.
Travis, L. (1985) *Parameters and Effects of Word Order Variation*, Doctoral dissertation, MIT, Cambridge, Massachusetts.
Whitney, R. (1983) "The Syntactic Unity of Wh-movement and Complex NP Shift," *Linguistic Analysis* 10, 299–319.
Ziv, Y. and G. Scheintuch (1979) "Indirect Objects Reconsidered," in P. Clyne, W. Hanks, and C. Hofbauer, eds., *Proceedings of the Fifteenth Regional Meeting of the Chicago Linguistic Society*, University of Chicago, Chicago, Illinois.

Zubizarreta, M.-L. (1985) "The Relation between Morphophonology and Morphosyntax," *Linguistic Inquiry* 16, 247–289.

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