

- Fukui, N. (1986) *A Theory of Category Projection and Its Application*, Doctoral dissertation, MIT, Cambridge, Massachusetts.
- Hale, K. and S. J. Keyser (1988) "On Some Syntactic Rules in the Lexicon," ms., MIT, Cambridge, Massachusetts.
- Higginbotham, J. (1985) "On Semantics," *Linguistic Inquiry* 16, 547-593.
- Huang, C.-T. J. (1982) *Logical Relations in Chinese and the Theory of Grammar*, Doctoral dissertation, MIT, Cambridge, Massachusetts.
- Jaeggli, O. (1986) "Passive," *Linguistic Inquiry* 17, 587-622.
- Larson, R. (1988) "On the Double Object Construction," *Linguistic Inquiry* 19, 335-392.
- Lasnik, H. (1989) "Case and Expletives: Notes towards a Parametric Account," paper presented at the Princeton Comparative Syntax Workshop.
- Li, Y.-F. (1985) "Pronominal Empty Categories and the Control Theory," Master's thesis, Shandong University, Jinan.
- Li, Y.-F. (1987) "Theta-roles and Theta-operations," ms., MIT, Cambridge, Massachusetts.
- Marantz, A. (1984) *On the Nature of Grammatical Relations*, MIT Press, Cambridge, Massachusetts.
- Marantz, A. (1985) "Lexical Decomposition vs. Affixes as Syntactic Constituents," in W. H. Eilfort et al., eds., *Papers from the Parasession on Causatives and Agentivity*, Chicago Linguistic Society, University of Chicago, Chicago, Illinois.
- Mohanan, K. P. (1983) "Move NP or Lexical Rules? Evidence from Malayalam Causativization," in L. Levin et al., eds., *Papers in Lexical-Functional Grammar*, Indiana University Linguistics Club, Bloomington, Indiana.
- Park, K. (1984) "One Lexical Entry for Korean Passive and Causative Affixes," ms., University of North Carolina, Chapel Hill.
- Pollock, J.-Y. (1989) "Verb Movement, Universal Grammar, and the Structure of IP," *Linguistic Inquiry* 20, 365-424.
- Reinhart, T. (1976) *The Syntactic Domain of Anaphora*, Doctoral dissertation, MIT, Cambridge, Massachusetts.
- Roeper, T. (1984) "Implicit Arguments and the Projection Principle," ms., University of Massachusetts, Amherst.
- Smith, L. R. (1982) "An Analysis of Affixal Verbal Derivation and Complementation in Labrador Inuttut," *Linguistic Analysis* 10, 161-189.
- Vitale, A. J. (1981) *Swahili Syntax*, Foris, Dordrecht.
- Watkins, W. (1937) "A Grammar of Chichewa," *Language Dissertations* 24.
- Woodbury, A. (1981) *Study of the Chevak Dialect of Central Yupik Eskimo*, Doctoral dissertation, University of California, Berkeley.

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Remarks and Replies

On Larson's Treatment of the Double Object Construction

Ray Jackendoff

Barss and Lasnik (1986) point out certain asymmetries of binding domains in the English double object construction. They observe that these asymmetries cannot be accounted for in a theory that both preserves the traditional structure for double object constructions and also bases binding domains solely on asymmetrical c-command. At the end of their article, they suggest modifying the definition of binding domains, showing that the facts are easily accounted for if the definition of binding domains involves linear order as well as c-command.

Addressing the same facts, Larson (1988) takes the opposite tack. Without really considering Barss and Lasnik's proposed solution, he opts not to augment the definition of binding domains. Instead, he develops an unorthodox structure for double object constructions, for which the binding domains relevant to Barss and Lasnik's data can be stated in terms of asymmetrical c-command alone.

In the present article I will show that (1) further data reveal Barss and Lasnik to be essentially on the right track; (2) Larson's arguments for his structure are flawed; (3) his solution is not entirely satisfactory even on its own terms. I will conclude with some remarks on the general style of Larson's solution, seen in a historical context.

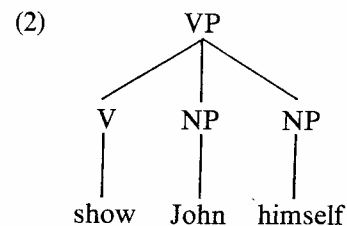
1. Linear Order in Binding Domains

Barss and Lasnik's argument is based initially on the contrast between (1a) and (1b).

- (1) a. I showed John himself (in the mirror).
- b. *I showed himself John (in the mirror).

Under the traditional phrase structure (2) for the double object construction, the only distinction between the two NPs is in their linear order.

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Hence any theory of the binding domain for reflexive anaphora that relies only on dominance relations is incapable of accounting for the distinction between (1a) and (1b). In particular, "X c-commands Y" and "X asymmetrically c-commands Y" (in either the definition of Reinhart (1979) or that of Aoun and Sportiche (1983)) refer only to dominance relations, and so cannot be the only condition involved in determining binding domains—if (2) is indeed the structure of the double object construction.

Barss and Lasnik cite five other phenomena with similar asymmetries in the double object construction.

QNP-Bound Pronoun Relations. In (3a) but not (3b), the pronoun can be bound by the quantifier.

- (3) a. I showed every friend_i of mine his_i photograph. (B&L's (6b))
 b. *I showed its_i trainer every lion_i. (B&L's (7b))

Wh-Movement and Weak Crossover. A *wh*-phrase fronted from the first object can bind into the second object (4a), but not vice versa (4b).

- (4) a. Who_i did you show his_i reflection in the mirror? (B&L's (8b))
 b. *Which lion_i did you show its_i trainer? (B&L's (9b))

Superiority. If both objects are *wh*-phrases, only the first may be moved.

- (5) a. Who did you give which book? (B&L's (11a))
 b. *Which book did you give who? (B&L's (11b))
 (OK only on echoic reading)

Each . . . the other. *Each* in the first object can be related to *the other* in the second object, but not vice versa.

- (6) a. I gave each man the other's watch. (B&L's (14))
 b. *I gave the other's trainer each lion. (B&L's (15))
 (7) a. I showed each child the other.
 b. *I showed the other each child.

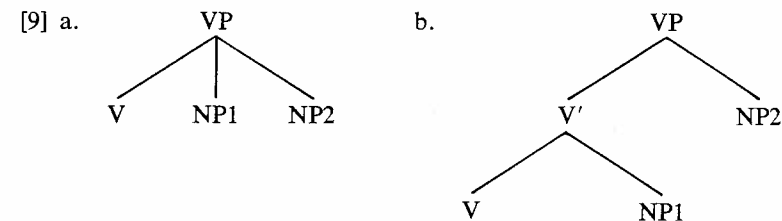
Polarity any. Polarity *any* is licensed in the scope of negation and various other elements. Negation in the first object licenses *any* in the second, but not vice versa.

- (8) a. I gave no one anything. (B&L's (18))
 b. *I gave anyone nothing. (B&L's (19))

For each of these phenomena, we must conclude either (1) that the double object construction is asymmetrical in terms of dominance relations, with the first object superior, or (2) that the condition relevant to binding in this context is the most obvious asymmetry in the construction, linear order. In their last paragraph, Barss and Lasnik suggest the latter possibility. More generally, the idea is that binding domains are defined by some Boolean combination of c-command and linear order, approximately along the lines of early proposals on anaphora such as that of Langacker (1969).

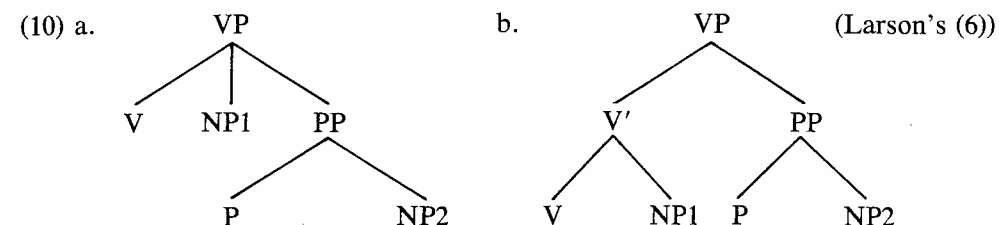
Larson begins his article by citing examples parallel to (1) and (3)–(8) (his (3)). He then says (pp. 337–338):

If it is assumed that these phenomena do indeed involve c-command, then [these examples] 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:



. . . 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 [i.e. dominance-based] and some configuration other than [(9a) or (9b)] is involved.

In fact, Larson never examines possibility (a), which is advocated by Barss and Lasnik. Rather, he observes that a dominance-based solution *is* available for V–NP–PP asymmetries, since NP2 is dominated by the maximal projection PP, assuming either structure in (10).



He then says (p. 339),

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?

I think that the proper response to this question is to question its assumption: complement asymmetry in standard datives might *not* be simply a matter of the structure introduced by PP. Rather, following Barss and Lasnik, it might be a function of their linear order as well, but the structural asymmetry masks the effect of linear order. When there is no structural asymmetry, as in the double object construction, the linear order condition emerges as criterial.

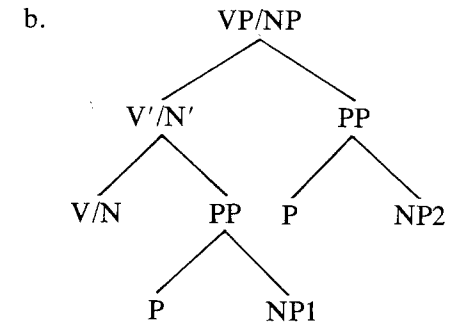
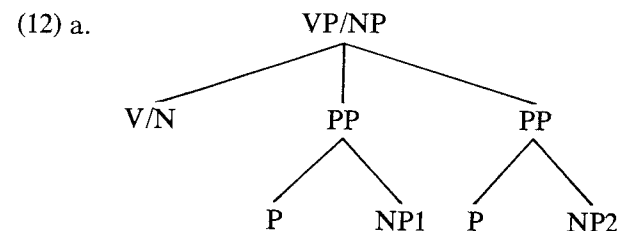
Rather than questioning his assumptions, Larson develops a structural solution to the asymmetries; the defense of this solution constitutes the bulk of his article. We will take up his solution in sections 3–6. But first I want to look at a wider range of double complement constructions, examining how they behave with respect to Barss and Lasnik's six phenomena. To the extent that parallel examples can be constructed, we will see that all of them behave similarly, regardless of whether they are symmetrical or asymmetrical in terms of dominance. The overwhelming generalization will be that linear order plays a role in these phenomena. The conclusion, then, is that Larson has pursued the wrong assumption: there is no need to motivate a novel structure for the double object construction for the sake of the binding facts. What must yield, rather, is the definition of binding domains.

2. Binding Phenomena in Other Double Complements

The cases of double complements I will look at are listed in (11).

- (11) a. Nonalternating double objects (*deny*, *cost*)
 b. Alternating NP–PP complements (*blame X on Y/blame Y for X; load X on Y/load Y with X*)
 c. Double PP complements with free order (*talk to X about Y/talk about Y to X; hear from X about Y/hear about Y from X*)
 d. Double PP complements in nominals (*a gift from X to Y/a gift to Y from X*)

Under standard assumptions, the cases in (11a) present either complete symmetry in terms of dominance (9a) or asymmetry in the wrong direction (9b). The cases in (11b) are asymmetrical, as seen in (10), but are included for reasons to become clear in the sections that follow. Finally, in the double PP complements (11c,d), neither NP c-commands the other, as seen in structures (12a) and (12b).



Here are the data.

Anaphors

(13) Full dative paradigm

- a. I showed John and Bill themselves/each other.
 b. *I showed themselves/each other John and Bill.
 c. ??I showed John and Bill to themselves/each other.
 d. *I showed themselves/each other to John and Bill.

(14) Double PP complements

- a. I talked to John and Bill about themselves/each other.
 I heard from John and Bill about themselves/each other.
 b. *I talked to themselves/each other about John and Bill.
 *I heard from themselves/each other about John and Bill.
 c. ??I talked about John and Bill to themselves/each other.
 ??I heard about John and Bill from themselves/each other.
 d. *I talked about themselves/each other to John and Bill.
 *I heard about themselves/each other from John and Bill.

(15) Double PPs in nominals

- a. gifts from John and Bill to themselves/each other
 b. *gifts from themselves/each other to John and Bill
 c. gifts to John and Bill from themselves/each other
 d. *gifts to themselves/each other from John and Bill

Comments: I have been unable to find sensible examples for the cases in (11a) and (11b). The strangeness of (13c) and (14c) was first noticed by Postal (1971), who attributed it to violation of his Crossover Principle; Jackendoff (1972) argued that the proper account was in terms of a Thematic Hierarchy condition on anaphora. I have encountered no further alternatives in recent literature (though Belletti and Rizzi (1988) and Grimshaw (1990) treat another case of Postal's Crossover violations, the psych verbs).

QNP–Bound Pronoun Relations

(16) Nondative double objects

- a. I denied each worker_i his_i paycheck.
 That incident cost each worker_i his_i paycheck.

(B & L's (6a))

- b. *I denied its_i owner each paycheck_i.
 *That incident cost its_i owner each paycheck_i.

(B & L's (7a))

(17) Alternating NP-PP complements

- a. I blamed every incident_i on its_i perpetrator.
 I loaded every book_i into its_i proper box.
 b. *I blamed its_i outcome on every bad decision_i.
 *I loaded its_i proper contents into every box_i.
 c. I blamed every official_i for his_i crimes.
 I loaded every box_i with its_i proper contents.
 d. *I blamed its_i planner for every bad decision_i.
 *I loaded its_i proper box with every book_i.

(18) Double PP complements

- a. I talked to every girl_i about her_i mother.
 I heard from every mother_i about her_i child.
 b. *I talked to her_i mother about every girl_i.
 *I heard from her_i mother about every girl_i.
 c. I talked about every girl_i to her_i mother.
 I heard about every girl_i from her_i mother.
 d. ?*I talked about her_i mother to every girl_i.
 ?*I heard about her_i mother from every girl_i.

(19) Double PPs in nominals

- a. the gift from every girl_i to her_i mom
 b. *the gift from her_i daughter to every mom_i
 c. the gift to every mom_i from her_i daughter
 d. *the gift to her_i mom from every girl_i

Wh-Movement and Weak Crossover

(20) Nondative double objects

- a. Which worker_i did you deny his_i paycheck?
 ?Who_i did that incident cost his_i self-esteem?
 b. *Which paycheck_i did you deny its_i owner?
 *Whose_i self-esteem did that incident cost him_i?

(B & L's (8a))

(B & L's (9a))

(21) Alternating NP-PP complements

- a. Which incident_i did you (correctly) blame on its_i perpetrator?
 Which books_i did you load into their_i proper boxes?
 b. *Which bad decision_i did you blame its_i unfortunate outcome on?
 *Into which box_i did you load its_i proper contents?
 c. Which official_i did you blame for his_i crimes?
 Which box_i did you load with its_i proper contents?
 d. *Which bad decision_i did you blame its_i planner for?
 *Which books_i did you load their_i proper boxes with?

(22) Double PP complements

- a. Which girl_i did you talk to about her_i mother?
 b. ?*Which mom_i did you talk to her_i daughter about?
 c. Which mom_i did you talk about to her_i daughter?
 d. ?*Which girl_i did you talk about her_i mother to?

Comment: Extraction from double PP complements in nominals has its own problems, so this case cannot be tested.

Superiority

(23) Nondative double objects

- a. Who did you deny which reward?
 b. *Which reward did you deny who(m)? (on nonecho reading)
 (Note: *Who did that incident cost which prize? and *Which prize did that incident cost who(m)? are both bad. I have no idea why.)

(24) Alternating NP-PP complements

- a. Which incident did you blame on who(m)?
 Which books did you load into which boxes?
 b. ?*Who(m) did you blame which incident on?
 ?*Which boxes did you load which books into?
 c. Who(m) did you blame for which incident?
 Which boxes did you load with which books?
 d. *Which incident did you blame who(m) for?
 ?*Which books did you load which boxes with?

(25) Double PP complements

- a. Which girl did you talk about to which boy?
 b. ?*Which boy did you talk about which girl to?
 c. Which boy did you talk to about which girl?
 d. ?*Which girl did you talk to which boy about?

Comment: Again extraction from double PP complements in nominals cannot be tested.

Each . . . the other

(26) Nondative double objects

- a. I denied each student the other's comments.
 b. *I denied the other's trainer each lion.

(27) Alternating NP-PP complements

- a. I mistakenly blamed each incident on the other's perpetrator.
 I loaded each set of books into the other's box.
 b. *I mistakenly blamed the other's crimes on each official.
 *I loaded the other's proper contents into each box.
 c. I mistakenly blamed each official for the other's crimes.
 I loaded each box with the other's proper contents.

- d. *I mistakenly blamed the other's perpetrator for each incident.
 *I loaded the other's box with each set of books.

(28) Double PP complements

- a. I talked about each boy to the other.
 b. *I talked about the other to each boy.
 c. I talked to each boy about the other.
 d. *I talked to the other about each boy.

(29) Double PPs in nominals

- a. the gift from each boy to the other
 b. *the gift from the other to each boy
 c. the gift to each boy from the other
 d. *the gift to the other from each boy

Polarity any

(30) Nondative double objects

- a. He denies no one any privileges.
 The accident cost no one any time.
 b. *He denies anyone no privileges.
 *The accident cost anyone no time.

(31) Alternating NP-PP complements

- a. I blamed none of the incidents on any of my friends.
 I loaded none of the books in any of the broken boxes.
 b. *I blamed any of the incidents on none of my friends.
 *I loaded any of the books in none of the broken boxes.
 c. I blamed none of my friends for any of the incidents.
 I loaded none of the broken boxes with any books.
 d. *I blamed any of my friends for none of the incidents.
 *I loaded any books into none of the broken boxes.

(32) Double PP complements

- a. I talked about none of the boys to any of the girls.
 b. *I talked about any of the boys to none of the girls.
 c. I talked to none of the girls about any of the boys.
 d. *I talked to any of the girls about none of the boys.

(33) Double PPs in nominals

- a. gifts from few of the boys to any of the girls
 b. *gifts from any of the boys to few of the girls
 c. gifts to few of the girls from any of the boys
 d. *gifts to any of the girls from few of the boys

To sum up, all combinations of double complements in VP and NP display the same binding asymmetries. Barss and Lasnik's observations are thus not about a peculiarity

of the double object construction, but about double complements in general; any account of them must generalize across all these possibilities. An account appealing to linear order generalizes with the greatest of ease; we will attempt to generalize Larson's account in section 4, with at best equivocal results.

Larson's attempt to avoid an appeal to linear order presumably stems from a desire to simplify Universal Grammar (UG) by restricting the definition of binding domains to dominance-based conditions. However, the general range of possibilities to be permitted by UG for binding domains is not all that obvious. For instance, Barss and Lasnik (pp. 349-350) confess that "it is not clear to us what the structural requirements for [the *each . . . the other*] relation are." As it happens, this construction was examined by Dougherty (1970) and Chomsky (1973). For present purposes, the relevant point is that its domain is in some respects broader than that for anaphora, as seen in (34), and in some respects narrower, as seen in (35).

- (34) a. It surprised each man $\left\{ \begin{array}{l} \text{that I had seen the other.} \\ \text{when I mentioned the other.} \end{array} \right\}$
 b. *It surprised the men $\left\{ \begin{array}{l} \text{that I had seen each other.} \\ \text{when I mentioned each other.} \end{array} \right\}$
 (35) a. *Those pictures of the other embarrassed each man.
 b. Those pictures of each other embarrassed the men.

(I am grateful to an anonymous reviewer for (35).)

Roughly the same constraints obtain on QNP-bound pronoun relations, as seen in (36).

- (36) a. It surprised every boy_i $\left\{ \begin{array}{l} \text{that I had seen his}_i \text{ mother.} \\ \text{when I mentioned his}_i \text{ mother.} \end{array} \right\}$
 b. *Those pictures of his_i mother embarrassed every boy_i.

The domain for polarity *any* is different from either of these: it includes cases where reflexive and reciprocal anaphora are impossible, as seen in (37), but its domain is not as broad in some respects as that for *each . . . the other*, as seen in (38).

- (37) a. I told nobody that anyone had fallen down.
 b. *I told the boys that each other had fallen down.
 (38) a. ??It surprised no one that I had seen anything.
 b. It surprised each man that I had seen the other.

Thus we are contending with a number of distinct definitions for "binding domain," varying somewhat with the phenomenon in question. The issue then is whether UG, which must define the repertoire of possible binding domains, includes linear order among the possible conditions. If so, there is no reason in principle to avoid linear order in an account of Barss and Lasnik's asymmetries.

At the bottom line, the most trivial observation about anaphora is that pronouns can have antecedents in preceding sentences but not in following sentences.

- (39) a. I saw George_i yesterday. He_i looked good.
 b. *I saw him_i yesterday. George_i looked good.

One might try to write this case of linear order off as “mere pragmatics—not part of grammar”; but on the other hand linear order here represents a basic communicative principle. It would be strange if sentence grammar failed to reflect it altogether.

Moreover, the same effects appear in conjoined constructions.

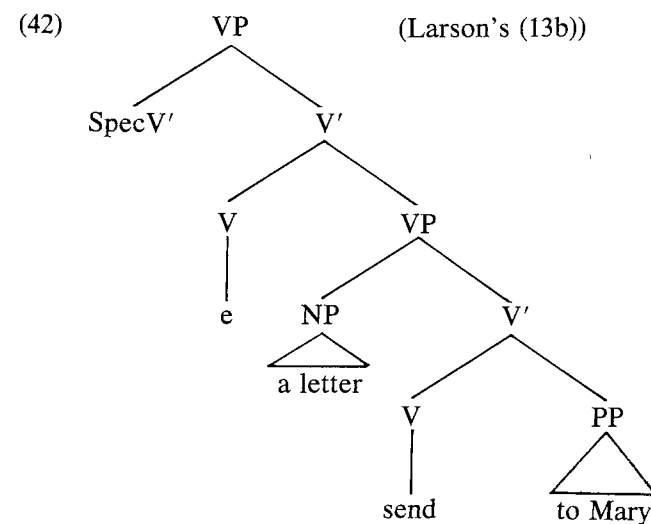
- (40) a. I saw Harry_i, his_i wife, and Fred.
 b. *I saw his_i wife, Harry_i, and Fred.
 (41) a. Fred mentioned that I saw George_i yesterday and that he_i looked good.
 b. *Fred mentioned that I saw him_i yesterday and that George_i looked good.

Here relative dominance seems to play no role at all; the predominant factor is linear order. I conclude from this that UG must include linear order among the possible conditions for anaphoric relations and therefore that there is no principled reason not to consider it a factor in accounting for the asymmetries in the double object construction.

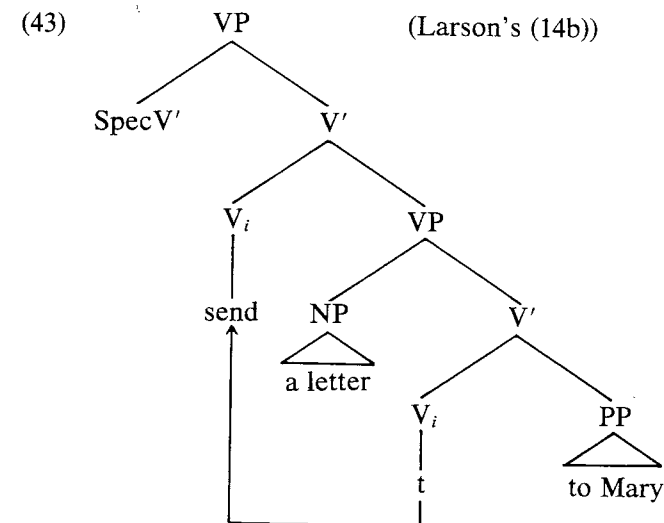
3. Larson's Solution

Having shown that Larson has chosen the wrong way out of the apparent difficulties presented by Barss and Lasnik's observations, we could just stop here. However, it is possible that Larson's analysis has virtues independent of its utility with respect to the binding facts. So let us examine his account.

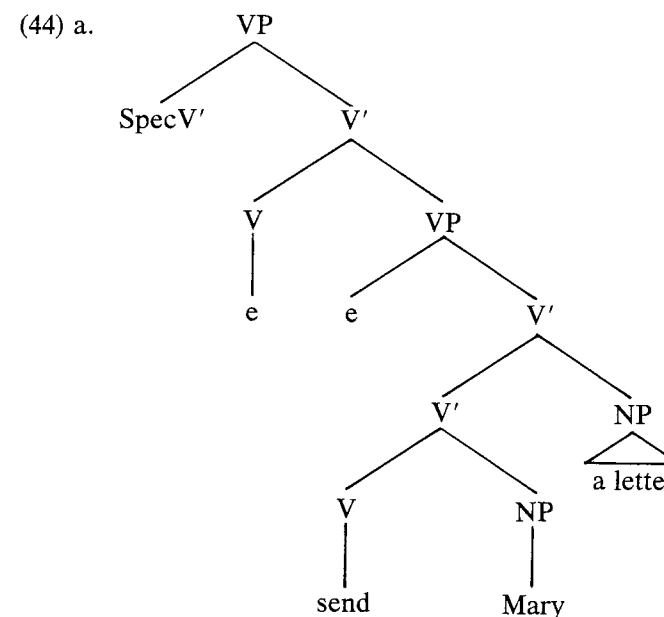
Adapting an approach from Chomsky (1955/75), Larson proposes that the VP in *John sent a letter to Mary* is (42) in D-Structure.

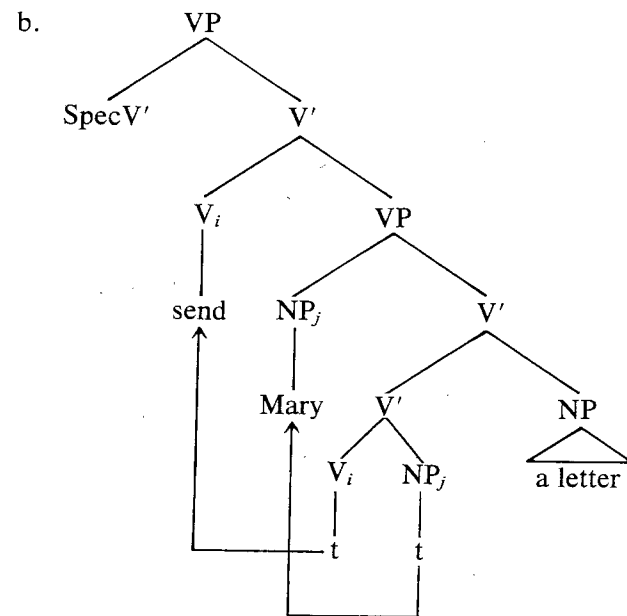


The surface form is derived by raising the lower V into the empty upper V position, leaving a trace.



For the crucial case, the double object construction *John sent Mary a letter*, Larson proposes that *a letter* is a D-Structure adjunct to the lower V', as seen in (44a). To create the surface form, the verb raises as before, but in addition *Mary* raises into the specifier of the lower VP, as shown in (44b).





Larson draws a parallel between the derivation in (44) and the passive. Passive “demotes” the external argument to an adjunct *by*-phrase and removes Case from object position, forcing movement of the object into subject position. Similarly, Larson suggests, “Dative Shift” results from “demoting” the upper argument in VP to an adjunct position and removing Case (here expressed explicitly by the preposition *to*) from the lower NP, forcing it to move upward. The main difference between Passive and Dative Shift, Larson argues, is that Passive occurs in the domain IP and Dative Shift in the domain VP.

The point of this derivation is that in (44b) the indirect object comes to asymmetrically c-command the direct object, so that Barss and Lasnik’s examples can be accommodated within a purely dominance-based theory of binding. However, it carries with it a great number of additional consequences. Let us look at some of them.

First notice that the structural relation between the surface subject of a passive and the *by*-phrase is, according to Larson, identical to that between *Mary* and *a letter* in (44b); this structural relation is supposed to be one that permits binding of reflexives in the lower NP. However, as observed by Postal (1971), the passive construction is a notorious exception to reflexive anaphora:

- (45) ?*Bill was hit by himself. (OK only with contrastive intonation)

Postal classifies this exception with the cases observed above in (13c) and (14c) and with psych verbs, as instances of his Crossover Principle. Whatever the proper account, it seems somewhat curious that Larson has created a structure analogous to the passive in order to account for the possibility of binding in (1a), yet binding is *not* possible in

the very passive structure to which the analogy is drawn. Thus the treatment of the dative alternation as a generalization of the passive alternation is suspect from the start.

A second consequence of Larson’s analysis is that *a letter to Mary* is a constituent in (43), unlike its status in either of the previous structures (10a) and (10b). Larson argues that this is a correct consequence, given examples like (46).

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

He says (p. 345), “Given the usual assumption that conjunction unites constituents, such examples are problematic for the structures in [(10a,b)] . . . : *a letter to Mary* and *a book to Sue* are not constituents.” In fact, Larson’s “usual assumption” is not so obvious. As is well known, the rule of Gapping produces conjuncts that are superficially non-constituents.

- (47) a. Bill hates Harry and Henry Ralph.
b. On Tuesday, we’ll visit Harry, and on Thursday, Ralph.
c. At 6:00, Sue came, and at 7:00, Fred.

In the Gapping construction, the auxiliary and verb are missing from the second conjunct, as are all but two of the remaining phrases (Jackendoff (1971)). The two phrases that are left can be from a wide variety of positions in the sentence: subject and object (47a), topic and object (47b), topic and subject (47c), for example. However, acceptability is degraded if there are three constituents in the right conjunct.

- (48) a. ??Harry bought a book at 6:00 in Harvard Square, and Fred at 9:15 in Watertown.
b. *On Thursday, Harry bought a book from Bill, and on Friday, Fred(.) from Ralph.
c. ??Harry put a book on the table in the morning, and Fred(.) on the sofa in the afternoon.

Since Gapping is a construction that “unites nonconstituents,” it is conceivable that the examples in (46) are also cases of nonconstituents being united. In fact, it is possible that they are just another configuration possible in Gapping.

Larson produces an example in his footnote 11 that he says unites three phrases as a conjunct:

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

However, the structures of the direct objects in (49) are [_{NP} *a letter to Mary*] and [_{NP} *a note to Max*], so actually only two phrases appear in the second conjunct. If we change the example to eliminate this possibility, I believe it is worse (though perhaps not as bad as (48)).

- (50) ?I wrote nothing to Mary in the morning and hardly anything to Max during the afternoon.

Compare also (51a) and (51b).

- (51) a. In the morning, I wrote [a letter to Mary], and during the afternoon, [a note to Max]. [2-constituent Gapping]
 b. ??In the morning, I sent Harry's book to Sue, and during the afternoon, Fred's dog to Max. [3-constituent Gapping]

This suggests, then, that the object and the *to*-phrase behave as separate constituents in the Gapping construction and that, when a third constituent is added in the second conjunct, the characteristic degradation occurs. I conclude that the sentences in (46) are probably a variety of Gapping sentences and therefore do not provide an argument for Larson's constituent structure.¹

As evidence *against* Larson's structure, notice that none of the standard tests for constituency permit the object and the *to*-phrase together: clefting (**It was Harry's dog to Sue that I sent*), pseudoclefting (**What I sent was Harry's dog to Sue*), Topicalization (**Harry's dog to Sue, I forgot to send*), and Right Node Raising (**I sent, and the post office forwarded, Harry's dog to Sue*). It might be that these tests fail because the constituent in question happens to be a VP with an empty V, so perhaps the evidence is only suggestive rather than conclusive. But rejecting these standard tests requires further argumentation.

4. Treatment of Other Double Complement Constructions

By extension, we would expect the double complement constructions in (11) to be analyzed by Larson in a fashion similar to the dative. In particular, the symmetrical cases of double NP complements, where each NP c-commands the other, and double PP complements, where neither NP c-commands the other, must be assimilated to this analysis in order to account for the binding asymmetries observed in section 2.

Larson in fact forces a parallel treatment of all double complement constructions by proposing the "Single Complement Hypothesis," namely that the expansion of X' is (52b) rather than (52a).

- (52) a. $X' \rightarrow X \text{ YP}^*$ (Larson's (74b))
 b. $X' \rightarrow X \text{ YP}$ (Larson's (76b))

Larson observes that this renders phrase structure in a sense more symmetrical, in that specifiers and complements are each restricted to a single constituent. However, he nowhere argues that this restricts the theory of grammar in an interesting way or makes life simpler for the language learner; it is just a nice formal symmetry.

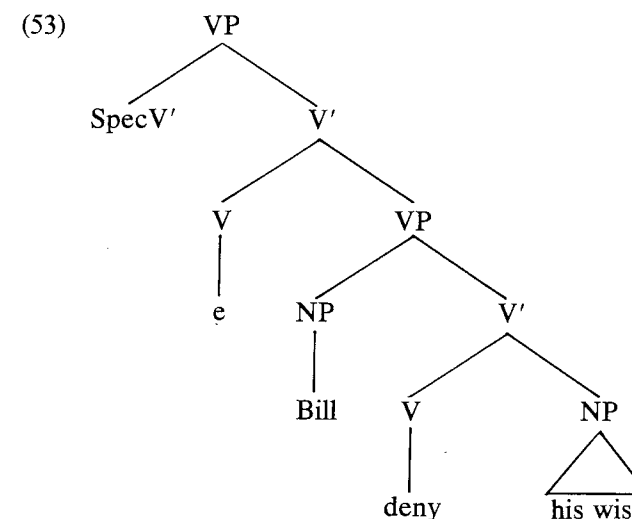
The price of formal symmetry, of course, is elaboration of hierarchical structure for anything that appears to have a double complement. Given his various auxiliary

¹ Strictly speaking, it is not necessary for my case that the sentences in (46) are produced by Gapping, should it prove otherwise. For my purposes, I only need to show that constituency is not a necessary condition for a string to appear as a conjunct. If this is so, Larson's "usual assumption" does not hold, and therefore (46) does not constitute evidence for structure (43) and against structure (10), as Larson claims.

assumptions, Larson succeeds in deriving the dative alternation. But let us see what happens with the constructions in (11).

Nonalternating double objects. What is the lexical difference between *give* and *send* on one hand and *deny* and *cost* on the other? One possibility is that *deny* and *cost* are analogues of "obligatorily passive" verbs like *be born* and *be rumored*: perhaps they θ -mark but do not Case-mark the indirect object, so that the only permissible configuration is parallel to (44). This is Larson's solution. He suggests (section 5.3, especially note 43) that on one hand *deny* needs a preposition to Case-mark the indirect object, because the indirect object is a third argument; but on the other hand there is no preposition semantically appropriate to match the meaning of the verb. Therefore there is no legal way to Case-mark, and the "passive" must take place in order to achieve well-formedness.

Alternatively, the D-Structure configuration of *deny Bill his wish* could be (53), with the lower NP receiving lexical accusative instead of lexical dative Case marking, presumably realized by a zero preposition.



Either solution accounts for the binding asymmetries in terms of dominance. How can we tell which is right? The answer in part has to hinge on a theory of how verbs lexically specify idiosyncratic Case marking, and how that interacts with the semantics of prepositions. Larson considers the issue only very schematically.

Alternating NP-PP complements. There are two possibilities: either (54a) and (54b) are derived from the same D-Structure form or they are not.

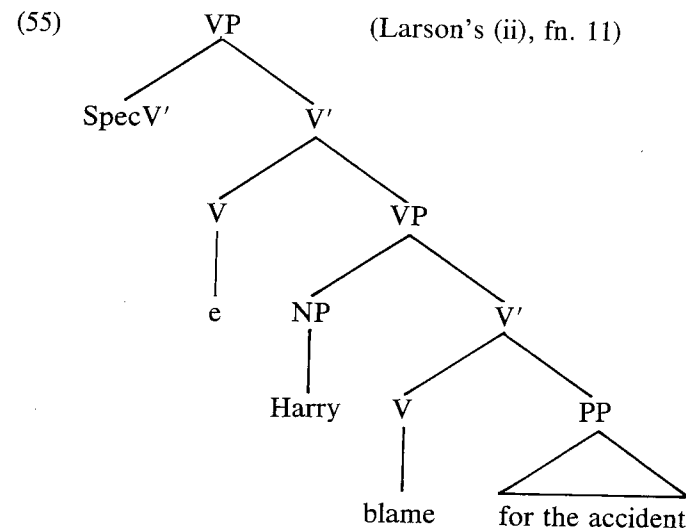
- (54) a. Bill blamed Harry for the accident.
 b. Bill blamed the accident on Harry.

The former possibility is necessary under Larson's assumption of Baker's (1985/88) *Uniformity of θ -Assignment Hypothesis* (UTAH), "Identical thematic relationships are

represented by identical structural relations between the items at the level of D-Structure," and also under Larson's weaker version, Principle P2 (p. 382), which "translates relative position on [a] Thematic Hierarchy into relative structural subordination of complements" (p. 383). Larson invokes such a principle to justify deriving both forms of alternating datives from the same D-Structure form, despite some evidence that the thematic relationships are *not* identical (of which more in the next section).

(Notice, by the way, that Larson's D-Structure configurations are not themselves identical: (42) has the direct object in SpecV', and (44a) has it in an adjunct. This unremarked weakening of UTAH is licensed by a totally stipulative principle of Argument Demotion (p. 352).)

In any event, Larson's principles argue that (54a) and (54b) have D-Structure forms related as in the dative alternation. Paralleling (42), then, suppose that the D-Structure form of (54a) is (55), a configuration essentially endorsed in Larson's footnote 49, page 384.

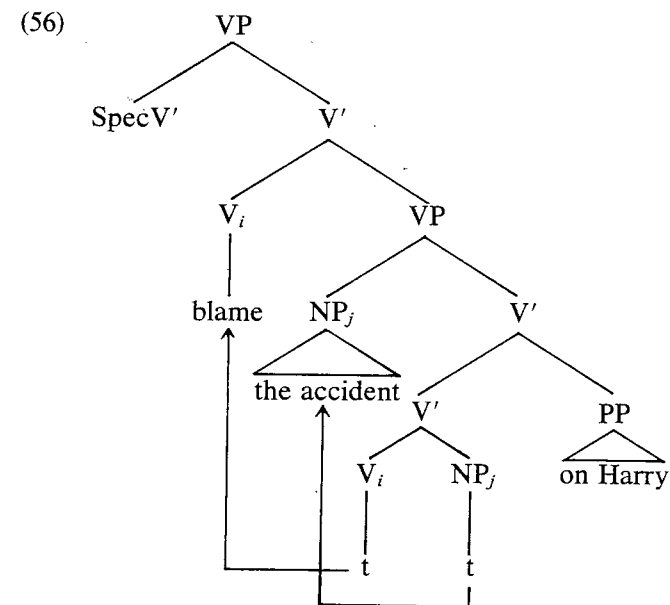


The verb then raises into the upper V position, as with *send*. On the other hand, (54b) has *Harry* in an adjunct. However, unlike the situation with dative verbs, this NP cannot be Case-marked by V' under the procedure developed in Larson's section 3.3.2. (But why not?) It therefore requires a preposition to mark its Case. (But how is the choice of preposition—*on* for *blame*, *with* for *load*—determined?) At the same time, the Case marker *for* (What Case does it mark?) is deleted, so *the accident* must raise to the upper NP position, as in (56).

These problems are particularly vexing with verbs like *supply* and *provide*, which are semantically close to Dative Shift verbs but undergo a slightly different alternation.

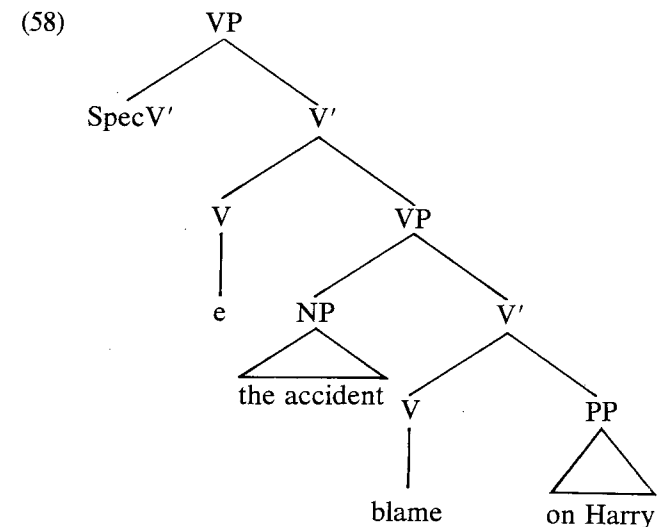
(57) a. Bill supplied/provided books to the students.

b. Bill supplied/provided the students with books.



Larson claims (section 3.3.2) that when the object of *send* becomes an adjunct in (44) it can receive Case from the V'. Why, then, when the same thing happens with *supply*, is the preposition *with* needed to assign Case? I will not speculate on possible answers from Larson's point of view, but will just leave the question hanging.

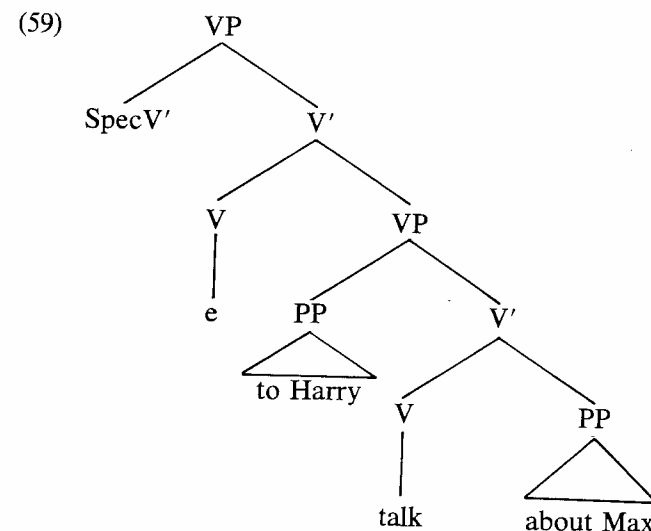
Alternatively one could work out a "lexical" solution to these alternations. On this approach, *blame* might license two different D-Structure configurations, (55) and (58).



The verb would then again raise to form the surface order. This approach would abandon Larson's interpretation of UTAH, but it would not face the problems of determining preposition choice in the adjunct of (56).

But if a "lexical" solution is possible here, why not in the case of double object datives as well, along the lines of (53)? The price is a weakening of UTAH—which Larson has not adhered to in any event—and also a weakening of Larson's more liberal Principle P2. The advantage is that the technical details of preposition choice are easier to approach.

Double PP complements. As mentioned above, Larson's theory of binding entails that double PP complements cannot be in a flat VP structure like (12a) or a right-adjoined structure like (12b). Rather, they too must have a right-branching structure. By analogy with the dative, *Bill talked to Harry about Max* has the D-Structure form (59); the verb raises to produce the surface order. (This structure is indeed suggested by Larson (fn. 49, p. 384).)



As in the previous case, we have two choices for the inverted form: it can be derived by still another variant of the "Passive," which this time for some reason does not delete the Case marker *about*. Alternatively, there could be a "lexical" solution in which the inverted form results from a D-Structure configuration like (59) except that the PPs are exchanged.² The latter solution begins to look ever more attractive, in that the "Passive"

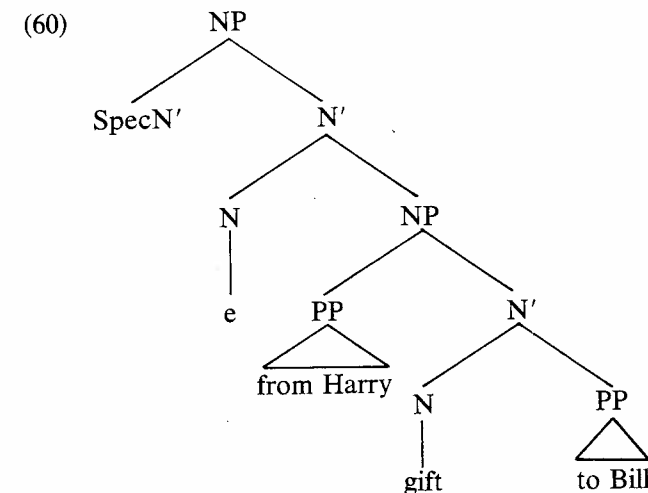
² An anonymous reviewer has suggested that Larson could instead derive this alternation by generalizing his analysis of Heavy NP Shift, which I have not discussed here. However, the resulting structure (i) has the wrong dominance relations to accommodate the binding facts of section 2: (14c) is not so good, as this structure might predict, but (18c), (22c), (25c), (28c), and (32c) are all perfect.

(i) Bill [_{VP} [_V talk [_{PP} about Max]] [_{VP} [_{PP} to Harry] _{t_V}]]

In addition, the inversion of PPs after *talk* and *hear* is not subject to the "heaviness" constraints on Heavy NP Shift. So I reject this possibility.

operation by now has so many lexically determined variants that it bears little resemblance to the actual passive construction on which it is allegedly modeled. Surely it is simpler in this case to claim that the verb is indifferent to the order of complements; that takes the least information in order for the learner to acquire the alternation.

Double PPs in nominals. I include this case just to show what NPs have to look like under Larson's analysis. *A gift from Harry to Bill* has the D-Structure configuration (60); the noun *gift* raises to produce the surface form.



One problem is immediately obvious: (60) places the PP *from Harry* in the specifier of the lower NP, an unprecedented configuration. In addition, we are again faced with a choice between a "derivational" account of *the gift to Bill from Harry* and a "lexical" account. Given the general freedom of PP order in nominal complements, shown in (61), the idea of unspecified order seems to capture the facts better than a Passivelike derivation.

- (61) a. the gift of a book to Bill/the gift to Bill of a book
 b. the picture of Bill by Picasso/the picture by Picasso of Bill
 c. the news from New York about the war/the news about the war from New York

To sum up this section, we see that Larson's assumptions about the definition of binding domains, the Single Complement Hypothesis, and UTAH (or Larson's revision of it) together force us to extend his analysis of the dative to all double complement constructions. As we do so, the analogue of "Dative Shift" looks less and less plausible. A "lexical" treatment, which weakens UTAH and abandons "Dative Shift" but otherwise leaves everything the same, is at least equally attractive.

5. Semantic Arguments against Dative Shift

Although Larson cites and attempts to defuse some of the arguments of Green (1974), Oehrle (1976), and others against a Dative Shift rule, he does not mention them all. Considering a number of such arguments, drawing in part on Grimshaw (1988) and Pinker (1989) as well as older sources, I will argue that Larson's proposed explanations are inadequate.

Let us start with Larson's reasons why *give* undergoes the dative alternation but *donate* does not (section 5.1). His idea is that *give* assigns the θ -roles Beneficiary and Goal of Motion to the indirect object.³ Because the indirect object is a third argument, the verb cannot assign it Case; a preposition is required. The preposition *to* fills this function. At the same time, *to* assigns a θ -role to its object, namely Goal of Motion. Since this role is redundant with one of the roles assigned by the verb, *to* is predictable—its role “reduces” to Case marking—and it can therefore be deleted in the course of “Dative Shift.”

Then Larson says (p. 371), “Suppose that *donate* assigns only the Beneficiary role to its indirect object. . . . [Then] V and P are semantically compatible . . . ; however, *to* is not redundant—its grammatical contribution does not ‘reduce’ to Case marking.” Hence *to* cannot be deleted without losing thematic information, violating the prohibition on nonrecoverable deletion. As a result, Dative Shift cannot apply to *donate*.

First notice that this is a curious invocation of recoverability of deletion. *To* is completely predictable from the verb—it is not as though one has other choices of preposition, so that its deletion would prevent one from being able to tell what is in the underlying form. Note further that even standard recoverability is sometimes compromised in this situation, under the assumption that complement alternations are derived by movement: Is *load the truck with dirt* more closely synonymous with *load dirt into the truck* or with *load dirt onto the truck*?

Notice also that no evidence is given for the initial supposition here, other than that it makes the analysis work (more or less). The supposition in question is that *donate* θ -marks a Beneficiary but not a Goal of Motion. Under at least one plausible test for Beneficiary, *donate* does not mark this role as strongly as *give*:

- (62) a. What Bill did for Harry was give him a book.
- b. ??What Bill did for the library was donate a book to it.
- c. ??What Bill did for the libraries was donate a book to each of them.

(I have included (62c) to eliminate the irrelevant prosodic problem with the pronoun at

³ Notice that this violates the standard version of the θ -Criterion (Chomsky (1981)), which requires a one-to-one match of syntactic arguments and θ -roles. Such a violation doesn't matter much to me (see Jackendoff (1987)), but common Government-Binding Theory practice accepts this principle, and Larson's dropping it without notice ought not to pass unremarked. On the other hand, the formal version of the θ -Criterion, on page 335 of Chomsky (1981), does not require a one-to-one match. However, see section 6 for an even more serious violation of standard assumptions of θ -assignment in Larson's treatment.

the end of (62b).) Notice also that *give* marks Beneficiary more strongly in the double object frame than in the NP-PP frame.

- (62) d. ?What Bill did for the boys was give a book to each of them.

My sense is that the Beneficiary role is a subclass of “affected”; it is thus more prominently associated with an NP adjacent to the verb, for example the first NP in a double object construction (see Tenny (1987), Jackendoff (1990, chaps. 7 and 11)). Whatever the final analysis, though, (62) indicates that, if anything, *give* can mark Beneficiary and *donate* cannot.

Furthermore, neither does *donate* lack the role Goal of Motion. In the single complement form *Bill donated the money*, there is still an implicit Recipient, standardly analyzed as the Possessional counterpart of Goal of Motion. Here the preposition *to* does not appear at all, yet according to Larson it ought to be essential in order for the θ -role Goal to be present with this verb. Hence Larson's analysis of the contrast between *give* and *donate* is altogether off the mark.

Next let us consider the *for*-dative, whose existence Larson only slightly acknowledges (fn. 38, p. 371). A few points are significant. First, the *for*-phrase of Beneficiary is invariably an adjunct; the Beneficiary NP receives no θ -role from the verb. For instance, in (63), it is not an essential part of the action of jumping, eating, singing, or peeling that it is done for someone's benefit.

- (63) a. Harriet jumped up and down for the coach.
- b. Susan ate an apple for the audience.
- c. Enrico sang (an aria) for Luisa.
- d. Beulah peeled a grape for Mae.

This contrasts with the *to*-complements of *give* and *donate*, where the Recipient is an essential θ -role in the meaning of the verb, even if implicit in the case of intransitive *donate*.

Second, only a subset of *for*-phrases of Beneficiary have corresponding double object constructions. The conditions on the double object are (1) that the verb must be a transitive verb of creation or preparation, and (2) that the created or prepared entity be intended to benefit the Beneficiary NP.

- (64) a. *Harriet jumped the coach up and down. (*in Beneficiary sense)
- b. *Susan ate the audience an apple.
- c. *Enrico sang Luisa.
- d. Enrico sang Luisa an aria.
- e. Beulah peeled Mae a grape.

Here is how the conditions account for (64). *Jump* and *eat* are not verbs of creation or preparation, hence do not have Beneficiary double objects. (64c) is ruled out because the verb is not transitive. (64d,e) are grammatical because singing a song and peeling a

grape are acts of creation or preparation. (65) is a further illustration with a minimal pair (thanks to Jane Grimshaw).

- (65) a. I'll fix a sandwich/the radiator for you.
b. I'll fix you a sandwich/*the radiator.

Fixing a sandwich is an act of creation or preparation; fixing the radiator is not.

Now notice that the indirect object in Beneficiary double objects still behaves semantically like an adjunct, despite its intimate syntactic contact with the verb. There is nothing in the inherent meaning of singing an aria, peeling a grape, or fixing a sandwich that requires an intended Beneficiary—one could just be doing these things for the hell of it.

How does this reflect on Larson's analysis? The fact that the *for*-phrases in (63) and (65a) are adjuncts means that the verb neither θ -marks nor Case-marks the NP. Following Larson's treatment of *give*, the forms in (64d,e) and (65b) are supposed to be derived by suppressing the verb's Case marking on the object of *for*—but the verb *doesn't* Case-mark the object of *for* in the first place. Then, because the *for* is supposed to be semantically redundant with the meaning of the verb—which it isn't—it deletes and its object must be raised. In short, the devices necessary to permit *give* to undergo Dative Shift fail to carry over to *for*-datives. In addition, there is the serious problem of delimiting the peculiar semantic class of verbs that actually permit the alternation.

Alternatively, suppose that Beneficiary double objects and *for*-phrases of Beneficiary are syntactically independent. Under this assumption, the *for*-phrases in (63) are adjuncts as before, but the indirect objects in (64d,e) are essentially base-generated in situ. How are they licensed? Two possibilities come to mind: (1) A lexical rule optionally adds a Beneficiary argument to transitive verbs of creation and preparation, so the indirect object comes to be θ -marked by the verb (Oehrle (1976), Grimshaw (1988), Pinker (1989)). (2) An interpretive rule permits a Beneficiary adjunct to be expressed in this position with these verbs (Jackendoff (1990, chap. 9)), so that the indirect object receives a θ -role independently of the verb. Whichever possibility one adopts—and this is not the place to decide between them—there are coherent nonmovement accounts of the *for*-dative alternation.

Returning to our main quarry, the *to*-dative, notice that there are two distinct classes of verbs that permit a Recipient indirect object. The first are verbs of transfer of possession like *give*, *pay*, *sell*, and *serve* (as in *serve Bill the food*). Larson's explanation of the licensing of Dative Shift is formulated with these verbs in mind. But another class, such as *hit*, *throw*, *kick*, and *send*, is fundamentally spatial in character, expressing causation of motion. These verbs occur freely with any expression of Path.

- (66) a. Susan hit/threw/kicked the ball to Max/down the hall/out the window/away/upward/ . . .
b. Susan sent Harry to Max/down the hall/out the window/away/ . . .

In none of these is there any sense of a Recipient, except when the preposition is *to*.

However, the double object appears with these verbs only when the indirect object is a possible Recipient. (67) is a well-known illustration.

- (67) a. Sue sent the money to Bill/to London.
b. Sue sent Bill/*London the money.

London is acceptable in (67b) only if it is construed as something like 'the people in London' or 'the organization in London'—in other words, as a potential Recipient.

The situation therefore appears to be that *to* may but need not assign the θ -role Recipient—whether or not the verb independently assigns it. In the case of *throw the ball to Bill*, Recipient is an additional role, not redundant with the verb. By contrast, the first NP in the double object construction *must* be assigned the θ -role Recipient. In short, the story for these verbs is quite distinct from that for *give*.

Larson, following an observation of Marantz (1984), notes that the class of *to*-dative verbs is potentially productive. If we invent a new verb *shin* ('kick with the shin'), it intuitively permits the dative alternation:

- (68) a. Elmer shinned the ball to me during soccer practice. (Larson's (59))
b. Elmer shinned me the ball during soccer practice.

But notice that *shin* belongs to the class illustrated in (66): it is a spatial verb and can also occur freely with the Path phrases in (66).

Pinker (1989) observes, however, that not every verb of causation of motion permits a Recipient dative.

- (69) *Susan dragged/shoved/moved/dribbled Harry the ball.

The verbs that do permit it, such as those in (66), are very particular in meaning: the Agent applies force to the Theme just at the beginning of the Theme's trajectory of motion. Since *drag*, *shove*, *move*, and *dribble* imply influence of the Agent continuing throughout the Theme's trajectory, they do not satisfy this condition. (*Bring* and *take* are however exceptions to Pinker's restriction.) Note also that the new verb *shin* might mean either 'cause to move by a single kick with the shin' or 'cause to move by repeated kicks with the shin'. In (68a) both readings are possible, but in (68b) the latter is ruled out. Thus the Recipient double object with spatial verbs has a semantic restriction just as about as peculiar as that on Beneficiary double objects.

In short, the facts concerning the indirect object of *hit*, *throw*, *kick*, and *send* bear an uncanny resemblance to those surrounding the indirect object of *sing*, *peel*, and *fix*. Both indirect objects express a semantic role that is not an essential part of the verb's meaning; both are subject to a picky restriction on the meaning of the verb. If indeed the two constructions form a natural class, and if the *for*-datives are not derived by movement, then the *to*-datives cannot be either. This leaves motivation for a Dative Shift derivation only in the residue of purely possessional *to*-datives. By now it seems rather perverse to hold out for Dative Shift at all.

At this point, then, let us go back to Larson's original reasons for pursuing the

movement analysis. One justification is UTAH or Larson's P2, which we have already examined at length. The other justification is that, although there are problems of non-productivity 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. (Larson (1988, 350))

But this does not mean they are correct for *English*—one's analysis must still be responsible to the facts, which strongly militate against a movement analysis.

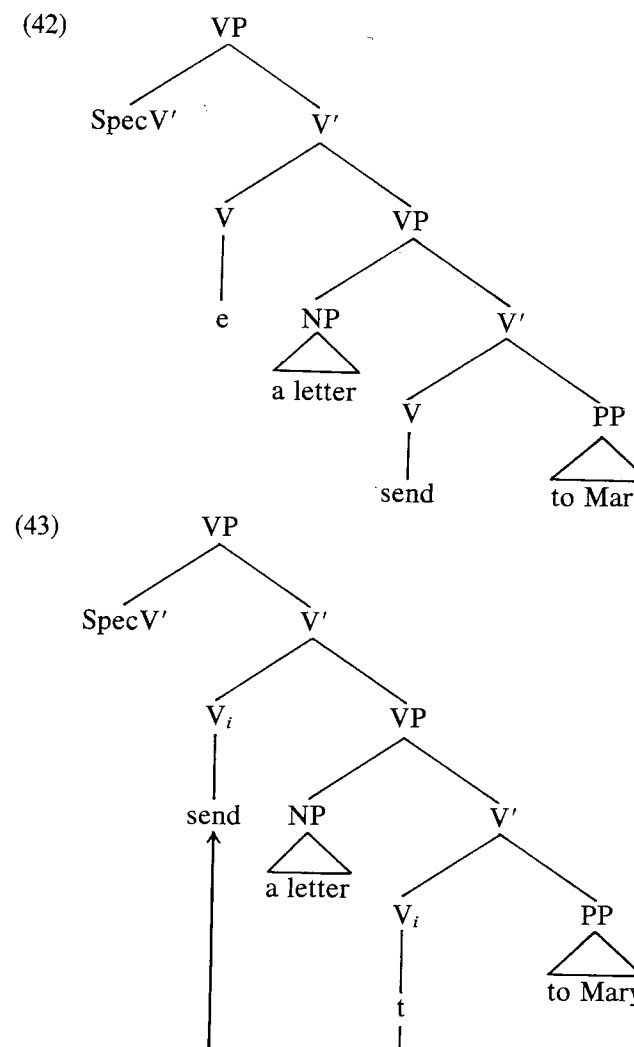
If one abandons Dative Shift in English, there are still two possibilities for the cross-linguistic facts. First, the productive applicatives could be transformational and the semi-productive English datives lexical, the two cases teasing apart like the transformational verbal passive and lexical adjectival passive within English. Or the productive applicatives might also prove lexical, as argued by Bresnan and Kanerva (1989). In short, Larson's appeal to similar productive constructions, though it may be strongly suggestive, is in the end unpersuasive.

6. The V Raising Analysis

The last two sections have addressed only Larson's arguments for a movement analysis of Dative Shift. Now let us return to (42) and (43), his proposed D-Structure form and derivation for *send a letter to Mary*. Recall that these are justified on two grounds. One argument involves the Single Complement Hypothesis, which is based solely on the aesthetics of a formal symmetry. The main argument, though, involves the assumption that the theory of binding refers only to dominance relations and not to linear order. Under that assumption, against which I argued at length in sections 1 and 2, it is necessary to provide the proper dominance asymmetry in double object constructions. The VP *send a letter to Mary* does not itself present a problem for binding, because the presence of the PP provides the desired asymmetry of dominance. Rather, Larson proposes his structure for *send a letter to Mary* so that when it undergoes Dative Shift, the asymmetry is produced. With his assumptions about binding and his rule of Dative Shift both undermined, there may be no reason to consider the analysis further. Nevertheless, I want to examine it briefly.

Let me repeat the analysis here for convenience. (42) is the D-Structure configuration; (43) illustrates the derivation, in which the V raises into the upper empty V position.

The first thing to notice is that *this analysis abandons the standard assumption that θ -roles are assigned in D-Structure*. Consider θ -assignment to the subject of *send*. The subject lies outside the maximal projection of *send* in D-Structure, namely the lower VP. Therefore *send* cannot θ -mark its subject until it has raised into the upper VP. In

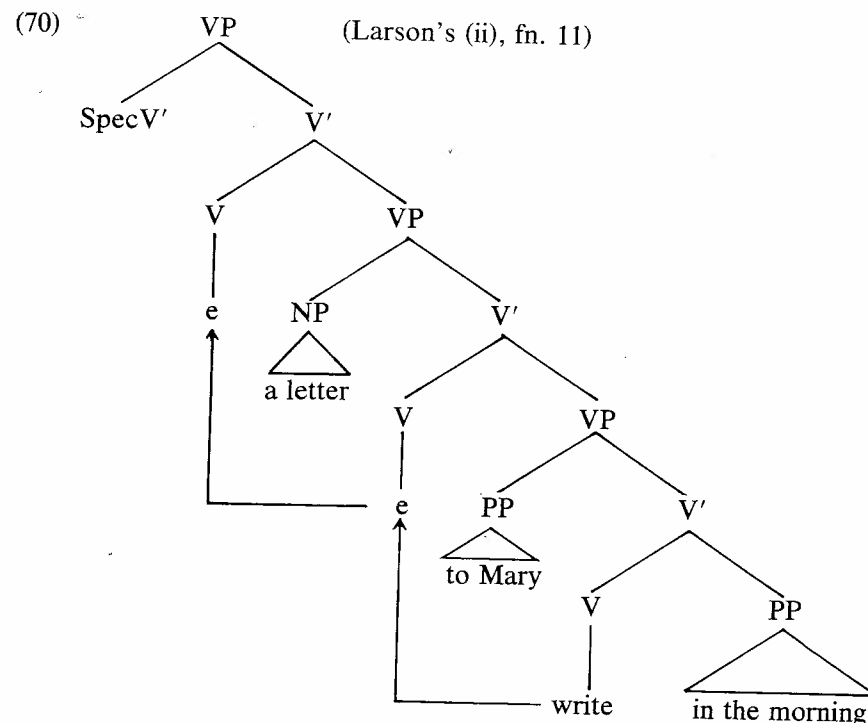


other words, θ -marking has suddenly become a derived structure property. This constitutes a radical shift in theory. As far as I can tell—the text is somewhat tricky—Larson endorses this conclusion on pages 383–384, without pointing out the break with tradition. I find it difficult to envision the consequences of this shift for the status of D-Structure in syntactic theory; they might in fact be quite desirable, but further discussion is called for.

Recall that the initial motivation for the θ -Criterion was to prevent NPs from acquiring θ -roles in the course of a derivation. The cases at issue in Chomsky (1981) involved NPs that moved into θ -positions of verbs. Larson's analysis is not altogether the same, since here NPs acquire θ -roles in the course of a derivation not by virtue of their own movement but by virtue of the verb moving to them. Technically it is a different

case—but the spirit is altogether similar. One would like some justification for prohibiting one kind of derived structure θ -marking yet permitting the other.

The changes in the theory take a further turn when we consider Larson's treatment of modifiers. For reasons that are not entirely given in the article and that we needn't go into here, Larson concludes (fn. 11, pp. 345–346; pp. 349–350; p. 382; fn. 49, p. 384) that time and manner PPs are not "outermost adjuncts (as is standardly assumed) but rather must be innermost complements" (p. 350). For example, his structure for *write a letter to Mary in the morning* is (70).



Here *a letter* does not receive its θ -role until *write* has raised into the middle VP; moreover, *a letter* does not stand in the same D-Structural relation to *write* in (70) as it does in *write a letter to Mary*, in which the lowest VP is absent and the verb starts one level higher up. Hence the abandonment of D-Structure θ -marking is still more drastic than in (42)–(43).

Structure (70), furthermore, flouts an even more basic tradition, strongly based in empirical evidence: it completely neutralizes the structural distinction between arguments and modifiers. As a result, there is no basis for such well-known differences as those illustrated in (71).

- (71) a. John, in the morning, wrote a letter (to Mary).
 *John, to Mary, wrote a letter (in the morning).

- b. *It was the morning that John wrote a letter (to Mary) in.
 It was Mary that John wrote a letter to (in the morning).
 c. John wrote a letter in the morning and Fred did so in the afternoon.
 *John wrote a letter to Mary and Fred did so to Harriet.

Just to bring the argument full circle, there is also a distinction in binding properties between arguments and time PPs. Consider (72).

- (72) a. I sent John and Bill to each other's classrooms.
 b. ?*I saw John and Bill during each other's classes.

For Larson, (72a) and (72b) are structurally indistinguishable. On the other hand, in a more traditional approach, *during each other's classes* is attached differently in the tree from *to each other's classrooms*, so a structural distinction is available on which the difference in binding can be based.

To sum up, Larson's proposed D-Structure representation, whatever its other virtues, violates two of the most longstanding and robust hypotheses of syntactic theory: (1) that a verb's argument structure is represented locally at some level of syntactic structure, and (2) that there is a structural distinction between arguments and modifiers.

7. Overview

I have argued that Larson's approach to the dative is based on a number of assumptions, each of which in principle constrains the grammar in an interesting way. Unfortunately, though, each of them forces Larson either to miss important generalizations, or to introduce complex auxiliary assumptions, or even to abandon other deeply motivated constraints on grammar. His proposed analysis, moreover, introduces a great deal of structure that is not evident from the surface of the dative construction.

The form of Larson's argument—and its flaws—are reminiscent of argumentation within the tradition of "Abstract Syntax" that flourished in the middle and late 1960s, the immediate progenitor of Generative Semantics. Representative works in this tradition include Postal (1966), Ross (1967; 1970; 1972), Lakoff (1968; 1971), Langacker (1969), and McCawley (1970). Both Larson and the abstract syntacticians assume a simple, rigid relationship between syntax and semantics: where Larson appeals to UTAH, Abstract Syntax appealed to the Katz-Postal (1964) Hypothesis that all meaning distinctions are represented in deep structure. This was a significant and compelling constraint on the theory of grammar, and it became a cornerstone of the Standard Theory (Chomsky (1965)); but it proved to be false. Where Larson appeals to constraints on binding domains for anaphora, Abstract Syntax appealed to recoverability of deletion: in order for deep structure to represent meaning, proforms had to be derived by replacing fully specified forms. Again, this was a significant constraint on grammar, but it proved insupportable in the face of empirical evidence. Where Larson appeals to the Single Complement Hypothesis, Abstract Syntax appealed to a powerful constraint on complement categories: if a verb superficially subcategorizes alternative categories, say NP or S', one

must dominate the other in deep structure—usually NP over S'—so that the verb's subcategorization can be simplified. Again, an interesting constraint, especially in the pre- \bar{X} era, but wrong. Just as Larson argues that a complex syntactic structure underlies a superficially simple construction, Abstract Syntax produced a proliferation of papers that began "This paper will show that deep structure is more abstract than previously thought."

Current lore equates Abstract Syntax with Generative Semantics, and holds that Generative Semantics failed because it was too unconstrained. The Generative Semantics approach, I have been told more than once, now deserves to be reconsidered because the present theory of grammar is so much more highly constrained. However, the proper point of comparison, I suggest, is with Abstract Syntax. Abstract Syntax failed not so much because of a lack of constraints, but rather because its constraints were too rigid to account for facts of lexical variation, lexical generalization, and surface syntactic distribution. This is the gist of the argument in such early lexicalist works as Chomsky (1970) (against transformational derivation of nominals), Bresnan (1969) (against deriving instrumental *with* from the verb *use*), Dougherty (1969) (against deriving pronouns from underlying full NPs), Jackendoff (1969) (against deriving quantifiers and negation from higher clauses), and Jackendoff (1972, chap. 3) (against deriving adverbs from related adjectival constructions). These are all arguments against Abstract Syntax, not against Generative Semantics.

My argument against Larson's analysis here is in much the same spirit as these works. I have shown that the constraints of this analysis, though intuitively appealing, prevent it from capturing the proper generalizations concerning the variety of binding domains and the variety of multiple complement structures in VP. Different, more adequate ways of constraining the grammar must be sought.

References

- Aoun, J. and D. Sportiche (1983) "The Formal Theory of Government," *The Linguistic Review* 2, 211–236.
- Baker, M. (1985/88) *Incorporation: A Theory of Grammatical Function Changing*, Doctoral dissertation, MIT, Cambridge, Massachusetts. Revised version (1988), University of Chicago Press, Chicago, Illinois.
- Barss, A. and H. Lasnik (1986) "A Note on Anaphora and Double Objects," *Linguistic Inquiry* 17, 347–354.
- Belletti, A. and L. Rizzi (1988) "Psych Verbs and Theta-Theory," *Natural Language and Linguistic Theory* 6, 291–352.
- Bresnan, J. (1969) "On Instrumental Adverbs and the Concept of Deep Structure," *MIT Quarterly Progress Report* No. 92 (15 January 1969), Research Laboratory of Electronics, MIT, Cambridge, Massachusetts.
- Bresnan, J. and J. Kanerva (1989) "Locative Inversion in Chicheŵa: A Case Study of Factorization in Grammar," *Linguistic Inquiry* 20, 1–50.
- Chomsky, N. (1955/75) *The Logical Structure of Linguistic Theory*, University of Chicago Press, Chicago, Illinois.

- Chomsky, N. (1965) *Aspects of the Theory of Syntax*, MIT Press, Cambridge, Massachusetts.
- Chomsky, N. (1970) "Remarks on Nominalization," in R. Jacobs and P. Rosenbaum, eds., *Readings in English Transformational Grammar*, Ginn, Waltham, Massachusetts.
- Chomsky, N. (1973) "Conditions on Transformations," in S. Anderson and P. Kiparsky, eds., *A Festschrift for Morris Halle*, Holt, Rinehart and Winston, New York.
- Chomsky, N. (1981) *Lectures on Government and Binding*, Foris, Dordrecht.
- Dougherty, R. (1969) "An Interpretive Theory of Pronominal Reference," *Foundations of Language* 5, 488–519.
- Dougherty, R. (1970) "A Grammar of Coordinate Conjoined Structures: I," *Language* 46, 850–898.
- Green, G. (1974) *Semantics and Syntactic Regularity*, Indiana University Press, Bloomington, Indiana.
- Grimshaw, J. (1988) "Getting the Dative Alternation," *MIT Working Papers in Linguistics* 10, Department of Linguistics and Philosophy, MIT, Cambridge, Massachusetts.
- Grimshaw, J. (1990) *Argument Structure*, MIT Press, Cambridge, Massachusetts.
- Jackendoff, R. (1969) "An Interpretive Theory of Negation," *Foundations of Language* 5, 218–241.
- Jackendoff, R. (1971) "Gapping and Related Rules," *Linguistic Inquiry* 2, 21–36.
- Jackendoff, R. (1972) *Semantic Interpretation in Generative Grammar*, MIT Press, Cambridge, Massachusetts.
- Jackendoff, R. (1987) "The Status of Thematic Relations in Linguistic Theory," *Linguistic Inquiry* 18, 369–411.
- Jackendoff, R. (1990) *Semantic Structures*, MIT Press, Cambridge, Massachusetts.
- Katz, J. and P. Postal (1964) *An Integrated Theory of Linguistic Descriptions*, MIT Press, Cambridge, Massachusetts.
- Lakoff, G. (1968) "Instrumental Adverbs and the Concept of Deep Structure," *Foundations of Language* 4, 4–29.
- Lakoff, G. (1971) *Irregularity in Syntax*, Holt, Rinehart and Winston, New York.
- Langacker, R. (1969) "Pronominalization and the Chain of Command," in D. Reibel and S. Schane, eds., *Modern Studies in English*, Prentice-Hall, Englewood Cliffs, New Jersey.
- Larson, R. (1988) "On the Double Object Construction," *Linguistic Inquiry* 19, 335–391.
- McCawley, J. (1970) "Where Do Noun Phrases Come From?" in R. Jacobs and P. Rosenbaum, eds., *Readings in English Transformational Grammar*, Ginn, Waltham, Massachusetts.
- Marantz, A. (1984) *On the Nature of Grammatical Relations*, MIT Press, Cambridge, Massachusetts.
- Oehrle, R. (1976) *The Grammatical Status of the English Dative Alternation*, Doctoral dissertation, MIT, Cambridge, Massachusetts.
- Pinker, S. (1989) *The Acquisition of Argument Structure*, MIT Press, Cambridge, Massachusetts.
- Postal, P. (1966) "On So-Called 'Pronouns' in English," in F. Dinneen, ed., *19th Monograph on Languages and Linguistics*, Georgetown University Press, Washington, D.C.
- Postal, P. (1971) *Crossover Phenomena*, Holt, Rinehart and Winston, New York.
- Reinhart, T. (1979) "Syntactic Domains for Semantic Rules," in F. Guenther and S. Schmidt, eds., *Formal Semantics and Pragmatics for Natural Language*, Reidel, Dordrecht.
- Ross, J. R. (1967) *Constraints on Variables in Syntax*, Doctoral dissertation, MIT, Cambridge, Massachusetts.
- Ross, J. R. (1970) "On Declarative Sentences," in R. Jacobs and P. Rosenbaum, eds., *Readings in English Transformational Grammar*, Ginn, Waltham, Massachusetts.
- Ross, J. R. (1972) "Act," in D. Davidson and G. Harman, eds., *Semantics of Natural Language*, Reidel, Dordrecht.

Tenny, C. (1987) *Grammaticalizing Aspect and Affectedness*, Doctoral dissertation, MIT, Cambridge, Massachusetts.

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On Explaining Some OCP Violations

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1. Introduction

Three major articles on the Obligatory Contour Principle (OCP) have been published in *LI* in recent years. McCarthy (1986) and Yip (1988) claim that the OCP is the cause of a number of apparently unrelated phonological processes. Odden (1988) contests the basic idea that the OCP plays such a widespread role in individual grammars. Based on a number of counterexamples to antigemination, an OCP effect defined below, Odden argues against the universality of the OCP. In this article we examine data having the formal characteristics of some of Odden's counterexamples and show how they can be reconciled with a universal OCP.

McCarthy (1986) argues that the OCP, defined in (1), is a principle of Universal Grammar (UG) that acts as an output filter on phonological rules (see also Leben (1973)).

(1) *Obligatory Contour Principle* (McCarthy (1986, 208))

At the melodic level, adjacent identical segments are prohibited.

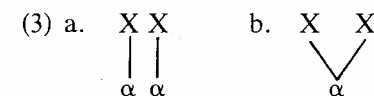
The OCP, McCarthy argues, plays an important role as a rule blocker. Thus, under certain morphological conditions, rules are blocked that would normally delete a segment when this segment is flanked on both sides by identical segments. For instance, (2) shows examples from Afar (see McCarthy (1986, 220–221)), a Cushitic language analyzed in Bliese (1981), where a vowel normally deletes in a certain context (2a) but fails to do so when the consonants immediately preceding and following it are identical (2b).

(2) a.	xamíla	xaml-í	'swampgrass' (acc./nom.-gen.)
	ṣagára	ṣagr-í	'scabies'
	darágu	darg-í	'watered milk'

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b.	miḍaḍí	*miḍḍí	'fruit'
	sababá	*sabbá	'reason'
	xarar-é	*xarré	'he burned'

This blocking effect, which prevents the creation of true (that is, bisegmental) geminates, is called *antigemination* by McCarthy, who concludes (p. 256) that the OCP is universal. For the sake of clarity, the configurations in (3) may be referred to as *true* (3a) and *apparent* (3b) geminates.



Yip (1988) documents other examples of OCP application, especially cases of partial identity, and argues that antigemination is only one of a number of OCP effects (for partial identity cases, see also Kenstowicz (1985, 245), Lowenstamm and Prunet (1986, 198), and McCarthy (1986, 242)). Besides its function as a rule blocker, the OCP may trigger language-specific insertion, deletion, and other repair strategies (see Kaisse (1987) for dissimilation repair strategies triggered by the OCP), which resolve OCP violations created, for instance, by Tier Conflation (see McCarthy (1986)), the morphological operation that collapses, or linearizes, the autosegmental tiers on which different morphemes are introduced upon affixation.

Assuming that the OCP is a principle, and that the proper morphological conditions with respect to Tier Conflation are met, no phonological process should ever generate true geminates. In other words, antigemination effects should be observed universally. However, Odden (1988) argues that antigemination is routinely violated and that neither antigemination nor the OCP is universal. He concludes that the OCP is not a principle or even a parameter¹ but is "the surface manifestation of a more general problem in language learning and grammar selection, namely, the problem of selecting between competing analyses that are consistent with general linguistic theory and cover the same range of data" (p. 474).

In this article we concentrate on Odden's arguments against antigemination that rest upon rules blindly deleting segments, even when they are flanked by identical segments. Odden (pp. 465–469) mentions several such cases, where vowel syncope rules in Hindi, Klamath, and Maltese Arabic delete a vowel between two consonants irrespective of the identity of the consonants (for example, Maltese Arabic /jedded + et/ → *jeddðd-et* [jeddet], p. 465). In section 2 we discuss a similar case in Guere in which a consonant deletes between two vowels even when the vowels are identical (for example, /wɔlɔ/ → *wɔɔ* 'wash!'). Our position being that the OCP is a universal constraint and that phonological processes do not normally violate phonological constraints, we claim

¹ As an alternative to potential counterexamples, McCarthy suggests that the OCP may, if such cases were identified, have to be parametrized (see also Odden (1986), Kenstowicz and Kidia (1987), Lowenstamm and Prunet (1986) for discussion).