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THE ROLE OF THE SPECIFIER OF THE PREPOSITIONAL PHRASE*

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In this paper I explore the syntax of the prepositional phrase (PP) in English and contend that certain modifying expressions appear in the specifier of PP. I examine in detail the structure of the Prepositional Modifier Construction, in which a preposition modifies a preposition on its right, and based on evidence from selection and pied piping, I argue that the modifying preposition is situated in [Spec, PP] of the second preposition. This analysis is extended to other modifiers of prepositions, such as intensifiers and degree phrases. I demonstrate that the proposed structure correctly captures both the sequencing and interpretation of these modifiers as well as their behaviour in constituency tests. Implications of this analysis for small clause structure are also examined.

1. The Prepositional Modifier Construction

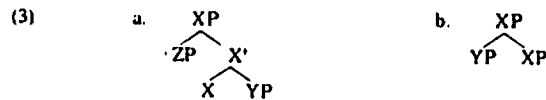
To explore the role of [Spec, PP], I examine the syntax of constructions in which material appearing to the left of the preposition is interpreted with the PP. The data in (1-2) present examples of what I will call the *Prepositional Modifier Construction* (PMC). In the PMC, the optional first preposition generally expresses a deictic locative or path function and is interpreted as modifying the preposition on its right. The second preposition can head either a selected argument of the verb (see (1)), or it can head an adjunct (as in (2)). Argument versus adjunct status is based on verb class properties identified by Levin (1993).

- (1) a. Kim placed the ornament (up) on the shelf.
b. The dog came (up) to the mail carrier.
c. Adrian stashed some cigarettes (down) under the bed.
d. Lee pushed the packing material (down) into the box.
e. The drainage system channelled the run-off (out) into the ocean.
f. The marine biologists sailed (out) on the bay.
- (2) a. Megan built a tree-house (up) in that tree.
b. Dana told the children scary stories (out) in the woods.
c. Darcy came to the party (along) with Pat.

2. The structure of the PMC

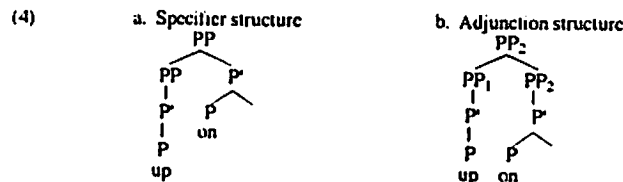
The PMC provides a testing-ground for an investigation of the syntax of the prepositional phrase and its modifiers. As the theoretical basis for this investigation, I assume that phrase structure conforms to an X-bar schema as in (3) (based on Chomsky 1970 and Jackendoff 1977 with subsequent refinements).

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In (3a), X is the head of the phrase XP, YP is the complement of X, and ZP is the specifier of X. In the configuration in (3b), YP is adjoined to XP. The head has a special status in the phrase structure. A head may bear syntactic features and shares its features with its projections. Further, a head can subcategorize for both the syntactic category and features of its complement. A head interacts with its specifier through feature checking for specifier-head agreement. This mechanism can filter out structures in which specifiers are incompatible with the head.

In order to explain the modifying role of the first preposition in the PMC, we expect it to appear in a position parallel to the place of other modifiers in the syntax. In X-bar theory two divergent proposals concerning the position of modifiers have emerged. One proposal adjoins the modifying phrase to the phrase it modifies, and this type of analysis is widely accepted at least for adverb phrases (see Koizumi 1993 and references therein). The other proposal, which generally has received less attention, places certain modifiers in the specifier position (see Jackendoff 1973, van Riemsdijk 1982, Emonds 1985, Abney 1987, Ernst 1991). I argue here for the specifier analysis for the PMC, shown in (4a) for part of (1a).



Through investigating diverse aspects of the PMC, I will show that the specifier analysis accounts for the characteristics of this construction. In addition, I will argue that the adjunction analysis fails to explain many of its features. The adjunction structure I consider here is shown in (4b), with a maximal projection (nodes are numbered to indicate which element adjoins to the other). Where relevant, I will also demonstrate how alternative structures with adjunction to lower nodes fail to account for the PMC.

3. Evidence for the specifier structure

3.1 Selectional relationships

The first argument for the specifier structure is based on selection. When the verb selects a locative argument, selection holds between the verb and the second preposition in the PMC. This selectional relationship is illustrated in (5), where *store* selects a locative preposition (see (5a)) but does not select a path or goal preposition (see (5b)). A similar pattern of selection is exhibited by *put* in (6).

- (5)
- a. *Jessie stored the papers (down) behind/under/below the desk.*
 b. **Jessie stored the papers (down) through/to the desk.*

- (6)
- a. *Jocelyn put the lawn furniture (out) on/beside the deck.*
 b. **Jocelyn put the lawn furniture (out) through/to the deck.*

The ill-formed sentences in (1') further establish the selection of the second preposition by the verb. These sentences differ from the well-formed examples of PP arguments in (1) in the respect that the second preposition is optional.

- (1')
- a. *Kim placed the ornament up *(on) the shelf.*
 b. *The dog came up *(to) the mail carrier.*
 c. *Adrian stashed some cigarettes down *(under) the bed.*
 d. *Lee pushed the packing material down *(into) the box.*
 e. *The drainage system channelled the run-off out *(into) the ocean.*
 f. *The marine biologists sailed out *(on) the bay.*

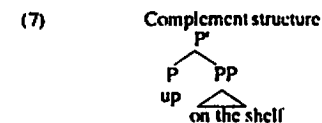
Notice also that since the first preposition is simply an optional modifier of the selected preposition, no selectional relationship holds between the verb and the first preposition.

The specifier analysis captures these selectional properties of the PMC. In the specifier structure, the second preposition can head a PP complement to the verb, so the selection between the verb and the second preposition is expected. In addition, the fact that the modifying preposition has no effect on this selection and is not itself selected by the verb is predicted by its location in [Spec, PP]. Yet this structure does allow for compatibility between the two prepositions to be enforced as a relation between a head and its specifier. Since the specifier analysis posits the second preposition as the head of the PMC, it further predicts that the second preposition and not the first must be compatible with the verb when the PMC forms an adjunct. This prediction is borne out, as shown by the data in (2'), which indicate that it is the second preposition that is crucial in determining the semantic characteristics of the adjunct.

- (2')
- a. *Megan built a tree-house up *(in) that tree.*
 b. *Dana told the children scary stories out *(in) the woods.*
 c. *Darcy came to the party along *(with) Pat.*

In contrast to the specifier analysis, the adjunction analysis does not readily account for the selectional properties of the PMC. In the adjunction structure, the phrase projected by the modifying preposition is adjoined to the PP headed by the second preposition. This view faces a fundamental difficulty in that adjunction of material to a selected phrase is known to be impossible in the general case (see Chomsky 1986, McCloskey to appear).

Selectional properties also provide an argument against another conceivable analysis: the complement structure, shown in (7), in which the second preposition heads a PP complement to the first preposition.



In the complement structure, the optional preposition rather than the second preposition heads the complement to the verb. Crucially, this analysis cannot explain the verb's selection of the second preposition and not the first one.

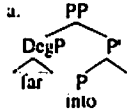
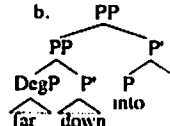
3.2 Other modifiers in [Spec, PP]

3.2.1 Sequencing and interpretation

The sequencing and interpretation of modifiers in the PMC provides a second argument for the specifier structure. As illustrated in (8-10a), modifiers of prepositions include intensifiers and degree phrases (DegP after Abney 1987), such as *way*, *right*, and *far*. Significantly, these modifiers may not intervene between the two prepositions in the PMC (see (8-10b)). In addition, an intensifier or DegP modifies the preposition immediately following it, so if one of these modifiers appears before the first preposition in the PMC, it is interpreted as modifying the first preposition rather than the second one, as in (8-10c). For example, in (10c) the pathway is interpreted as extending *far down* and not necessarily *far into*.

- (8) a. Jean backpacked *way* into the mountains.
 b. *Jean backpacked *up way* into the mountains.
 c. Jean backpacked *way up* into the mountains.
- (9) a. Sean steered the model plane *right* into the trees.
 b. *Sean steered the model plane *up right* into the trees.
 c. Sean steered the model plane *right up* into the trees.
- (10) a. The pathway extended *far* into the pyramid.
 b. *The pathway extended *down far* into the pyramid.
 c. The pathway extended *far down* into the pyramid.

Once again, the specifier analysis accounts for the data. If we assume that the intensifier or DegP appears in the specifier of the PP it modifies (after Jackendoff 1973, van Riemsdijk 1982, Emonds 1985, Abney 1987), then the ungrammaticality of (8-10b) is expected: in these sentences, the specifier of the second preposition is unavailable for an intervening intensifier or DegP, as it is already filled by a modifying PP. On the other hand, the remaining sentences in (8-10) are correctly predicted to be well-formed with the intensifier or DegP modifying the immediately following preposition: in (8-10a) the intensifier or DegP appears in the specifier of the head of the PP argument or adjunct (see (11a)), while in (8-10c) it appears in the specifier of the modifying PP (see (11b)).

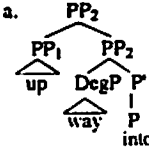
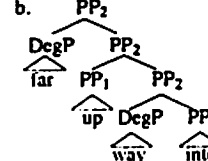
- (11) a.  b. 

Notice that the specifier analysis allows only one specifier for each phrase. This assumption is crucial in order to exclude sentences like those in (8-10b), in which an intensifier or DegP appears after a modifying preposition. It also explains the illformedness of sentences like those in (12), in which two DegPs or intensifiers appear before a preposition.

- (12) a. *Darcy drove *way far* (up) into the mountains.
 b. *Jan swam *straight deep* (down) into the underwater grotto.

The specifier analysis of modifiers in the PMC thus argues for a unique specifier position in each maximal projection (pace Fukui & Speas 1986, Chomsky 1994) and also argues against Kayne's proposal (1994) which allows multiple specifiers by eliminating the distinction between adjunction and specifier structures.

While the sequencing and interpretation of modifiers in the PMC is readily explained under the specifier analysis, these facts are unexpected under the adjunction structure. Most importantly, the failure of an intensifier or DegP to intervene between the two prepositions in the PMC is surprising, as this sequence is predicted to be good if the intensifier or DegP appeared in the specifier of the second PP and the modifying preposition were adjoined above (see (13a)). Notice that even if the intensifier or DegP itself were adjoined to the PP rather than in the specifier, the bad sequencing illustrated in (8-10b) would still be unexplained syntactically, because there is nothing to prevent an intensifier from appearing after the modifying preposition (as shown with *way* in (13b)).

- (13) a.  b. 

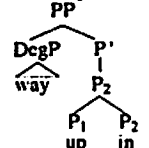
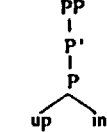
A final point is that the modification of the first preposition rather than the second one in (8-10c) is unaccounted for if all modifiers are adjoined, since the intensifier or DegP could then adjoin above the optional PP to modify the PP of the second preposition (as shown with *far* in (13b)).

3.2.2 Coordination

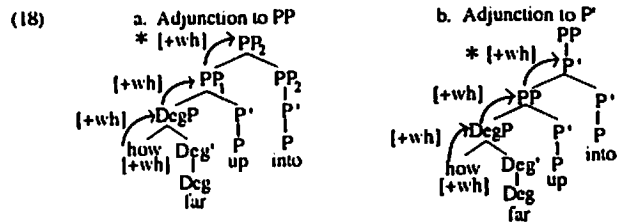
The specifier analysis predicts that prepositions with DegP modifiers in the PMC can appear in a coordinate structure. This prediction is borne out, as shown in (14). Each sentence in (14) is generated under the specifier analysis by simply coordinating two modifying PPs which each have a DegP in their specifier.

- (14) a. Dana found the cat [*dangerously far out and way up*] in the branches of the tree.
 b. This photo is of the shipwreck [*six miles out and about two miles down*] in the bay.
 c. The submarine recorded seismic activity [*very far out and deep down*] in the ocean.

In addition to supporting the specifier analysis, the data in (14) provide an argument against a head adjunction structure, shown in (15a).

- (15) a. Head adjunction structure  b. Compound structure 

In the head adjunction structure, the modifying preposition adjoins to the second preposition at the X⁰ level. This analysis cannot explain the coordination in (14).



Notice that if the DegP were itself adjoined, feature percolation would not apply beyond the DegP node. Clearly none of the possible adjunction structures can explain the pied piping of the second preposition by the specifier of the DegP.

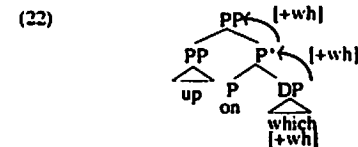
3.3.2 Complements as pied pipers

Pied piping induced by complements offers further support for the specifier analysis. In the PMC, when the PP headed by the second preposition is pied piped by a complement, the modifying preposition and any other modifiers must also raise. (19-21a) show that pied piping of the modifiers is grammatical, while (19-21b) demonstrate that the modifiers cannot be stranded on their own.

- (19) a. That's the shelf [up on which]_i Kim placed the ornament _{t_i}.
 b. *That's the shelf [on which]_i Kim placed the ornament _{up t_i}.
- (20) a. That's the bay [out into which]_i the drainage system channelled the run-off _{t_i}.
 b. *That's the bay [into which]_i the drainage system channelled the run-off _{out t_i}.
- (21) a. This is the Olympic runner [right behind whom]_i Darcy ran _{t_i} in the race.
 b. *This is the Olympic runner [behind whom]_i Darcy ran _{right t_i} in the race.

Webelhuth's study of pied piping finds that complements will pied pipe PPs and no other phrase. Why only PPs are susceptible to pied piping by a complement is a problem that remains unresolved in the literature. Webelhuth's account of this phenomenon analyzes only non-theta-marked phrases as potential pied pipers and proposes that the unique behaviour of PPs is due to prepositions being theta role "solicitors" rather than theta role "assigners" (1992: 135-42). Webelhuth's formal analysis of feature percolation from complements employs a condition on complement structures which states that the immediately dominating node will inherit the operator features of the complement. The fact that theta-marked phrases are not pied pipers is captured by a proposal that arguments appearing in theta-positions may not bear operator features (1992: 147-8). Phrases which are not theta-marked are then the only ones which can percolate up a [+wh] operator feature. If only prepositions do not assign a theta role to their complement, then only PPs are expected to be pied piped by their complement.

Under the specifier analysis, pied piping of a preposition by a complement then applies as in (22). Since the complement of a preposition is not in a theta-position it can bear a [+wh] operator feature. By Webelhuth's condition on complement structures, this feature is inherited by the P' node, and then by the condition on specifier structures, the PP node inherits the operator feature of P', thereby explaining the raising of both prepositions.



Webelhuth's analysis is committed to the claim that prepositions do not assign a theta role to their complement. However, various other work has argued for theta role assignment by at least some prepositions (see, for example, Marantz 1984, Baker 1988, Hestvik 1991). I will leave open the question of whether the special behaviour of prepositions with respect to pied piping by complements is linked to their theta-assigning status. The key part of Webelhuth's analysis I adopt is that (by some mechanism) a [+wh] feature percolates up from the complement DP to the PP node, as in (22). Under the specifier analysis, all modifiers are contained within the pied piped PP, so the modifying preposition and any other modifiers are correctly expected to always raise with the second preposition.²

Consider now what the adjunction analysis leads us to expect in pied piping by complements. Here the question arises of how left-adjoined PPs behave under movement: may they be stranded or must they move with the raised phrase? Compare the behaviour of left-adjoined adverbs on VPs in syntactic movement. As the data in (23) show, left-adjoined adverbs can strand in VP preposing.

- (23) a. If John thought that she would ever marry him, he would propose, but [_{VP} marry him]_i she wouldn't [_{VP} [ADVP ever] [_{VP} _{t_i}]].
 b. The serf said he would always obey his master, but [_{VP} obey him]_i he couldn't [_{VP} [ADVP always] [_{VP} _{t_i}]].

In each case of VP preposing in (23), a left-adjoined adverb is stranded. The fact that these adverbs actually left-adjoin to VP is evident from both their appearance between the modal and the main verb in each sentence and their stranding to the left of the lowest functional or auxiliary element. The availability of stranding for adverbs left-adjoined to VP leads us to expect that elements left-adjoined to PP should also be able to strand. The failure of the modifying prepositions to strand on their own is thus not captured by an adjunction structure.

Note that in some cases it appears as if the modifying preposition can actually strand on its own, as in (24-25b).

- (24) a. This is the box which Lee sprang out from.
 b. This is the box [from which Lee]_i sprang _{out t_i}.
- (25) a. This is the mail carrier whom the dog came up to.
 b. This is the mail carrier [to whom]_i the dog came _{up t_i}.

We will see that the cases of apparent stranding in the (b) examples are in fact the result of structural ambiguity in the corresponding (a) sentences.

Inserting an adverb can serve to disambiguate the structures in (24-25a). As illustrated in (26-27b), the first preposition cannot strand if an adverb intervenes between the stranded preposition and the verb, yet an adverb may appear between the verb and prepositions when the prepositions strand together

² See Webelhuth (1992: 139) for discussion of his analysis of stranding of prepositions in general.

(see (26-27a)). Following Pesetsky (1989), Johnson (1991), Koizumi (1993), and Kratzer (1994), I assume that sentences in which an adverb intervenes between a verb and preposition are derived by way of verb raising to the left of the adverb.

- (26) a. This is the mail carrier whom the dog came *slowly* up to.
 b. *This is the mail carrier to whom the dog came *slowly* up.
- (27) a. This is the box which Lee sprang *suddenly* out from.
 b. *This is the box from which Lee sprang *suddenly* out.

Based on the data in (26-27), it is evident that when the first preposition appears to strand on its own, it actually forms a complex constituent with the verb, rather than modifying the second preposition. This explains why in (26-27b) an adverb cannot separate the first preposition from the verb when the first preposition appears to be stranded. In addition, in cases of true stranding, where both prepositions are left behind, as in (26-27a), the analysis correctly predicts that the adverb may intervene between the verb and the prepositions, because in these cases the first preposition can be interpreted as modifying the second one.

A further prediction of this analysis is that sentences which are ambiguous between an idiomatic verb + preposition construction versus a non-idiomatic verb + PP structure will be disambiguated when pied piping separates possible constituents. This prediction is borne out, as illustrated in (28).

- (28) a. Kim set the Camcorder up on the shelf.
 b. This is the shelf [*up on which*]_i Kim set the Camcorder t_i. [V|PP]
 c. This is the shelf [*on which*]_i Kim set the Camcorder *up* t_i. [V+P|PP]

(28a) is ambiguous in its interpretation of *set the Camcorder up on the shelf*, which can either have the idiomatic meaning of setting up the Camcorder on the shelf, where *up* is a particle interpreted with *set*, or it can have the non-idiomatic meaning of placing the Camcorder up on the shelf, where *up* modifies *on*. As we expect, in (28b), where both prepositions raise, the first preposition must form a constituent with the second one, resulting in the non-idiomatic reading, while in (28c), the second preposition alone is pied piped, so the first preposition must be interpreted with the verb, forcing the idiomatic reading. These examples thus verify that cases of apparent separation are in fact cases in which the first preposition forms a constituent with the verb, and they confirm the generalization that prepositions in the PMC pied pipe or strand together, as predicted by the specifier analysis and not by the adjunction one.

3.4 Summary

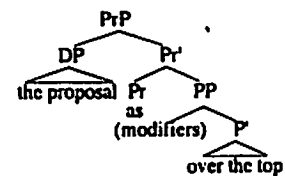
We have now seen that the specifier analysis accounts for diverse aspects of the PMC, such as selection, the sequencing and interpretation of other modifiers in the PP, and constituency in coordination and pied piping. This result argues that [Spec, PP] is a position for modifiers of the preposition, and more generally, that modifiers can appear in a specifier position, which is unique for each phrase.

4. Implications for small clause structure

I now briefly explore some implications of this analysis for small clause structure. If [Spec, PP] contains modifiers and there is only one specifier position

per projection, then the subject of a prepositional small clause must originate outside of the PP rather than in [Spec, PP]. I propose to adopt an external subject small clause structure (ESS), as in (29), based on Bower's (1993) model, in which the small clause subject is base-generated in the specifier of PredicateP (PrP). This analysis takes up Kratzer's proposal (1994), building on the work of Marantz (1984), that external subjects are arguments of the predicate, such that the predicate rather than a lexical head assigns the subject a semantic role.

- (29) The president regards the proposal as right over the top.



The ESS predicts that movement of a PP out of a prepositional small clause will not move the subject or its trace. This prediction can be tested using observations about the behaviour of anaphoric elements inside displaced constituents.

Consider the data in (30-31)³:

- (30) a. [The parents]_i thought [the kids]_j should not be beside pictures of themselves*_{i/j}.
 b. [Beside pictures of themselves]_{i/j} [the parents]_i thought [the kids]_j shouldn't be.
- (31) a. [The nurses]_i think [the psychotic patients]_j should be many miles from each other*_{i/j}.
 b. [How many miles from each other]_{i/j} did [the nurses]_i think [the psychotic patients]_j should be?

The crucial observation here is that movement of the PP results in an increase in interpretive possibilities. The higher subject or the lower subject may bind the anaphor within the displaced constituent in (30-31b). Huang (1993) has shown that this broadening of binding possibilities under \bar{A} -movement occurs with certain types of fronted constituents but not with others. It is not found, for instance, in the case of VP or AP preposing:

- (32) a. John_i thinks Bill_j would not criticize himself*_{i/j}.
 b. [Criticize himself*_{i/j}]_i John_i thinks Bill_j would not.
- (33) a. John_i thinks Bill_j is proud of himself*_{i/j}.
 b. [How proud of himself*_{i/j}]_i does John_i think Bill_j should be?

Huang's proposal (cf. also Barss 1986) is that the fronted VP and AP in (32-33) contain a trace of the subject (assuming a VP/AP internal subject hypothesis), whose presence blocks binding by any potential antecedent external to the VP or AP. If this proposal is correct, then (30-31) show that no such subject trace is present in the case of movement of the PP predicate of a small clause.

Huang cites examples like (34) to argue that DPs behave like VPs and APs.

- (34) a. John_i thinks Bill_j will never be a victim of himself*_{i/j}.
 b. [A victim of himself*_{i/j}]_i John_i thinks Bill_j will never be.

³ I assume that the complement of *be* is always a small clause (see Stowell 1981).

The possible antecedents given in (34) are the ones Huang reports to be available. Yet in parallel structures which favour a reading in which the higher DP is the binder, binding by the higher antecedent becomes accessible, as in (35).

- (35) a. The serial killer_i thinks Mary will never be a victim of himself_i.
 b. [A victim of himself_j]_i, the serial killer_i thinks Mary will never be.

The fact that there is ever an increase in the possible binders for the anaphor in a raised DP suggests that like the predicative PPs, the DP does not contain a subject trace, and thus the subject of a nominal predicate originates outside of the DP.

It is clear from the patterning of small clause subjects and binding that prepositional and nominal small clauses behave as if the subject is external, as expected under the ESS. However, for VP and AP predicates an internal subject structure appears to be appropriate. Whether a unified subject position can be established for all predicates is a question that I will leave for further research.

References

- Abney, S. 1987. *The English Noun Phrase in its Sentential Aspect*. PhD dissertation, MIT, Cambridge, Mass.
- Baker, M. 1988. Incorporation and the Syntax of Applicative Constructions. *NLLT* 6. 353-90.
- Barss, A. 1986. *Chains and Anaphoric Dependence*. PhD dissertation, MIT, Cambridge, Mass.
- Bowers, J. 1993. The Syntax of Predication. *LJ* 24.4. 591-656.
- Chomsky, N. 1970. Remarks on Nominalization. In R. Jacobs, & P. S. Rosenbaum, eds. *English Transformational Grammar*. Waltham, Mass.: Ginn.
- Chomsky, N. 1986. *Barriers*. Cambridge, Mass.: MIT Press.
- Chomsky, N. 1994. Bare Phrase Structure. *MIT Occasional Papers in Linguistics* 5.
- Cinque, G. 1990. *Types of \bar{A} Dependencies*. Cambridge, Mass.: MIT Press.
- Emonds, J. E. 1985. *A Unified Theory of Syntactic Categories*. Dordrecht: Foris Publications.
- Ernst, T. 1991. A Phrase Structure Theory for Tertiaries. *Syntax and Semantics, Volume 25: Perspectives on Phrase Structure*. Academic Press.
- Fukui, N., & M. Specs. 1986. Specifiers and Projection. *MITWPL* 8, 128-72.
- Hestvik, A. 1991. Subjectless Binding Domains. *NLLT* 9. 455-96.
- Huang, C.-T. J. 1993. Reconstruction and the Structure of VP: Some Theoretical Consequences. *LJ* 24.1. 103-38.
- Jackendoff, R. 1973. The Base Rules for Prepositional Phrases. In S. R. Anderson, & P. Kiparsky, eds. *A Festschrift for Morris Halle*. Holl, Rinehart and Winston.
- Jackendoff, R. 1977. *X-Bar Syntax: A Study of Phrase Structure*. Cambridge, Mass.: MIT Press.
- Johnson, K. 1991. Object Positions. *NLLT* 9. 577-636.
- Kayne, R. S. 1984. *Connectedness and Binary Branching*. Dordrecht: Foris Publications.
- Kayne, R. S. 1994. *The Antisymmetry of Syntax*. Cambridge, Mass.: MIT Press.
- Koizumi, M. 1993. Object Agreement and the Split VP Hypothesis. In J. Bobaljik, & C. Phillips, eds. *Papers on Case and Agreement I*. *MITWPL* 18. 99-148.
- Kratzer, A. 1994. *The Event Argument and Semantics of Voice*. MS. University of Massachusetts, Amherst.
- Levin, B. 1993. *English Verb Classes and Alternations*. Chicago: University of Chicago Press.
- Lieber, R. 1983. Argument Linking and Compounds in English. *LJ* 14.2. 251-85.
- Marantz, A. 1984. *On the Nature of Grammatical Relations*. Cambridge, Mass.: MIT Press.
- McCloskey, J. To appear. On the Scope of Verb-Movement in Irish. *NLLT*.
- Pesetsky, D. 1989. Language-particular Processes and the Earliness Principle. Ms. MIT, Cambridge, Mass.
- Riemsdijk, H. van. 1982. *A Case Study in Syntactic Markedness*. Dordrecht: Foris Publications.
- Ross, J. R. 1967. *Constraints on Variables in Syntax*. PhD dissertation, MIT, Cambridge, Mass.
- Stowell, T. 1981. *The Origins of Phrase Structure*. PhD Dissertation, MIT, Cambridge, Mass.
- Webelhuth, G. 1992. *Principles and Parameters of Syntactic Saturation*. Oxford: Oxford University Press.