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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. Furthermore, 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 adjoined to 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).

(6) a. Joelyn put the lawn furniture (out) *on* the deck.
b. Joelyn put the lawn furniture (out) *through/through* 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 *(on) the mail carrier.
c. Adrian slashed 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 indicates 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.

(7) Complement structure

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 path 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. Scan steered the model plane right into the trees.
   b. *Scan steered the model plane up right into the trees.
   c. Scan steered the model plane right up into the trees.

(10) a. The pathway extended far into the pyramid.
    b. *The pathway extended far up into the pyramid.
    c. The pathway extended far 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. PP
    PP
    DegP P
    far into

b. PP
    PP
    DegP P
    far
    down

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 far down (up) 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. PP
    PP
    DegP P
    far
    into

b. PP
    PP
    DegP P
    far
    into

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).
as the DegP and modifying preposition do not form a constituent. A head adjunction analysis may thus be rejected, as it fails a basic constituency test.

The coordination of modifiers also bears on the validity of another potential analysis of the PMC: the morphological compound structure (see (13b)). Under this type of structure, the sentences in (14) are problematic, because syntactic coordination of constituents within a morphological compound is unexpected. A further inadequacy of the compound structure is the fact that the high productivity of the PMC is not typical of compounding. In addition, Lieber (1983) has argued that preposition-final compounds are ruled out in general by a constraint on the lexicon, since prepositions constitute a closed class in English.

3.3 Pied piping

I turn now to prepositional pied piping (following the terminology of Ross 1967), which provides strong constituency evidence for the specifier analysis. In exploring this data, I assume that in pied piping a [+wh] feature percolates up from a wh-phrase to a dominating node (see Webelhuth 1992 for recent discussion of feature percolation, as well as Kayne 1984 and Cinque 1990). Under this approach, movement of pied piped elements simply involves moving a phrase with a [+wh] feature, thus unifying it with other instances of wh-movement.

3.3.1 Specifiers as pied pipers

I first examine cases of pied piping by a specifier in the PMC. As shown in (16), when the specifier how of a degree word pied pipes a DegP, the modifying preposition and the second preposition with its complement are also pied piped.

(16) a. [PP How far up into the mountains] did Darcy drive?
b. [PP How deep down in the water hole] did Leo swim?
c. [PP How many miles down under the ground] was the dinosaur's egg buried?

In a study of pied piping in the Germanic languages, Webelhuth (1992: 121) finds that specifiers are pied pipers of the phrase they specify. Under the specifier analysis of the PMC, three specifiers are contained in [Spec, PP] of the second preposition in each sentence in (16). These specifiers are how, how + degree word, and how + degree word + modifying preposition. The pied piping of the first and second preposition is thus explained by each specifier embedded in [Spec, PP] pied piping the phrase immediately dominating it.

The mechanics of Webelhuth's account (1992: 144-7) are as follows. First of all, Webelhuth claims that only operator chains, that is, those headed by a syntactic operator, raise in wh-movement. When a wh-element pied pipes a dominating node, the dominating node must thus have become an operator. Webelhuth proposes that a wh-element makes a pied piped node into an operator by percolating a [+wh] operator feature up to it. Webelhuth implements feature percolation by defining admissibility conditions on projected structures. For our purposes, the key part of his condition on structures with specifiers states that if the head of a phrase has no operator feature, but its specifier does, then the maximal projection of the head will inherit the operator feature of the specifier.

[+wh] feature percolation of embedded specifiers under Webelhuth's account is illustrated in (17) for the PP how far up into the mountains in (16a).

For each specifier, the head specified does not bear an operator feature, so the [+wh] feature of the specifier percolates up to the specifier's mother node. The [+wh] operator status of the highest PP in (16a) is thus derived by the successive percolation of a [+wh] feature from the specifiers how, how far, and how far up.

(17)

In an operator feature percolation chain only the highest element qualifies as a syntactic operator (see Webelhuth 1992: 144). The constituent corresponding to the highest element in the percolation chain is thus what moves when a syntactic operator raises. Since the [+wh] feature is expected to percolate from [Spec, DegP] up to the highest PP node, as in (17), the specifier structure correctly predicts that the specifier of a DegP will pied pipe both prepositions.

The adjunction analysis does not fare as well with the specifier pied piping data. An important finding of Webelhuth's study is that adjoined elements do not pied pipe the constituent they modify. Consequently, any analysis that adjoins either the DegP or the modifying preposition with a DegP specifier to the phrase they modify cannot explain the fact that the specifier of the DegP pied pipes the second preposition. Webelhuth (1992: 144) accounts for the failure of feature percolation in adjunction structures with a condition stating that the node formed by adjunction inherits none of the grammatical features of the adjoined element, and thus feature percolation from an adjoined wh-element cannot apply.

The failure of feature percolation to apply from an adjoined modifier is illustrated in (18) for structures in which the optional PP is adjoined to the PP or P node projected by the second preposition. In each of these structures, the [+wh] feature of how percolates from specifiers only as high as the optional PP. Percolation from the modifying PP to the phrase of the second preposition is not possible, because the modifying preposition is adjoined. The bad feature percolation is indicated by an asterisk.

1 Note that it is possible for the specifier of a DegP to pied pipe only the DegP, as in the following:

i. [How far] did Darcy drive into the mountains?

If this was a case of a [+wh] DegP in [Spec, PP] failing to pied pipe the PP, it would be an exception to Webelhuth's analysis of pied piping by specifiers. Yet I suggest that this type of sentence is derived from one in which a DegP modifies a VP rather than a PP, as in (17):

1. Darcy drove into the mountains very far.

Since the DegP is an adjoined modifier in these cases, we expect a [+wh] feature in [Spec, DegP] to percolate only up to the DegP (see discussion of percolation and adjunction later in this section).

This analysis predicts that whenever a DegP can modify a PP but not the VP, pied piping from the specifier of the DegP must include the PP. This prediction is borne out:

ii. Pat found the crab very far under the pier.

iii. *Pat found the crab under the pier very far.

iv. [How far under the pier] did Pat find the crab?

v. *[How far] did Pat find the crab under the pier?
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] Kim placed the ornament t.
    b. *That’s the shelf [on which] Kim placed the ornament up t.
(20) a. That’s the bay [out into which] the drainage system channelled the run-off t.
    b. *That’s the bay [into which] the drainage system channelled the run-off out t.
(21) a. This is the Olympic runner [right behind whom] Darcy ran t in the race.
    b. *This is the Olympic runner [behind whom] Darcy ran right t in the race.

Webelthuth’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. Webelthuth’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). Webelthuth’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 Webelthuth’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.

Webelthuth’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, Mananz 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 Webelthuth’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.

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

(23) a. If John thought that she would ever marry him, he would propose, but [VP marry him] she wouldn’t [VP ADV ever [VP t]].
    b. The serf said he would always obey his master, but [VP obey him] he couldn’t [VP ADV always [VP t]].

In each case of VP preposing in (23), a left-adjointed adverb is stranded. The fact that these adverbs actually left-adjoint 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-adjointed to VP leads us to expect that elements left-adjointed 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 (24-25a).

(24) a. This is the box which Lee sprang out form.
    b. This is the box [from which] Lee sprang out t.
(25) a. This is the mail carrier whom the dog came up to.
    b. This is the mail carrier [to whom] the dog came up t.

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 (26-27a), the first proposition cannot stand 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 Webelthuth (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 (26-27a) 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 on which; Kim set the Camcorder up.
   c. [V|PP] (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 prepositional phrase, 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 (28a), 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, where the small clause subject is base-generated in the specifier of Predicate P (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):

(30) a. [The parents] thought the kids should not be beside pictures of themselves.
   b. [Beside pictures of themselves] the parents thought the kids shouldn't be.

(31) a. [The nurses] think the psychotic patients should be many miles from each other.
   b. [How many miles from each other did the nurses think the psychotic patients 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 (30-31). Huang (1993) has shown that this broadening of binding possibilities under 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, thinks Bill would not criticize himself.
   b. [Criticize himself] John, thinks Bill would not.

(33) a. John, thinks Bill is proud of himself.
   b. [How proud of himself] does John think Bill should be?

Huang's proposal (cf. also Bass 1986) is that the fronted VP and AP in (32-33) contain a trace of the subject (assuming a VPIAP 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. [A victim of himself] John, thinks Bill will never.
   b. [Bill, will never be a victim of himself] John, thinks Bill will never.
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 thinks Mary will never be a victim of himself.
   b. [A victim of himself], the serial killer 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