

# 10 Predication

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## 0 Introduction

Pre-theoretically, I will take for granted the traditional view that a proposition in natural language consists minimally of a distinguished nominal expression referred to as the “subject” and another expression referred to as the “predicate.” Predication is the relation between these two constituents. Though this survey is primarily concerned with the syntactic representation of predication, I shall adopt for purposes of discussion the standard Fregean view that a predicate is an unsaturated expression that must combine with an entity expression to form a proposition.

Very early in the literature of transformational-generative grammar the point was made that the notions subject and object are essentially relational in character and it was argued that given an appropriate set of syntactic rules, the relations “subject-of” and “predicate-of” a sentence could be defined in terms of the more basic formal notions of phrase structure such as category, precedence, and dominance. (See Chomsky 1965 for the classic statement of this view.) Though other approaches are possible, notably the assumption of relational grammar that relations themselves are the primitives of grammar, I shall restrict discussion here to the mainstream view that syntactic relations such as predication can be defined in terms of more basic structural notions.

The most obvious instance of predication is main clause predication, which seems universally to involve combining a nominal expression (NP) with a verbal expression (VP):

- (1) a. [<sub>NP</sub> John][<sub>VP</sub> ate a sandwich]  
b. [<sub>NP</sub> Bill][<sub>VP</sub> is very angry]  
c. [<sub>NP</sub> Fred][<sub>VP</sub> may be a good fellow]  
d. [<sub>NP</sub> someone][<sub>VP</sub> is in the living room]

and it was Chomsky's suggestion that the relation of predication could be defined in terms of the then-standard expansion rule for sentences:

(2)  $S \rightarrow NP VP$

It was soon noted, however, that in most languages there are at least some instances of so-called "small clause" predication:

- (3) a. Mary saw [<sub>NP</sub> John][<sub>VP</sub> eat a sandwich]  
 b. That made [<sub>NP</sub> Bill][<sub>AP</sub> very angry]  
 c. I consider [<sub>NP</sub> Fred][<sub>NP</sub> a good fellow]  
 d. We have [<sub>NP</sub> someone][<sub>PP</sub> in the living room]

In these examples, the second bracketed expression is in each case clearly predicated of the first, yet it is far from obvious that there is syntactic motivation for positing a structure in which the two constituents are immediately dominated by an S-node. (See Williams 1975, 1980, 1983a, for classic arguments both pro and con.) The difficulties with the small clause approach were further exacerbated when the "IP" analysis of sentences became widely adopted. According to this view, the subject of main clauses is located in the specifier of a "functional" category "I," apparently requiring that the same structure be assumed in small clauses as well.

Putting aside for the moment the difficulties with the small clause approach, it might appear from the examples in (1) and (3) that simple adjacency of phrases of the appropriate category could provide an adequate basis for a syntactic definition of the predication relation. It is easy to show, however, that adjacency is neither a necessary nor a sufficient condition for predication. Consider the following examples:

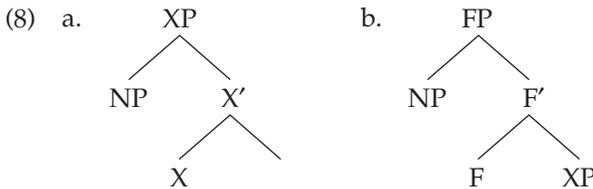
- (4) a. I consider John a good fellow  $\rightarrow$  John is a good fellow  
 b. I gave John an interesting book  $\nrightarrow$  John is an interesting book
- (5) I found John a good psychotherapist = (a) "I found John to be a good psychotherapist."  
 (b) "I found a good psychotherapist for John."
- (6) a. John made Mary a good wife  $\rightarrow$  Mary is a good wife  
 b. John made Mary a good husband  $\rightarrow$  John is a good husband
- (7) Fred painted the model nude  $\rightarrow$  (a) the model is nude  
 or (b) Fred is nude

Examples (4a, b) apparently consist of an identical sequence of constituents  $NP_1$ -V- $NP_2$ - $NP_3$ , yet in (4a)  $NP_3$  is predicated of  $NP_2$ , while the same is not true

at all of (4b). Example (5) also contains a sequence of two NPs in postverbal position, yet it is structurally ambiguous: under the (a) interpretation the second NP is predicated of the first, while the same is not true of the (b) interpretation. The examples in (6) have, once again, the same surface sequence of constituents NP<sub>1</sub>-V-NP<sub>2</sub>-NP<sub>3</sub>, yet in (6a) NP<sub>3</sub> is understood to be predicated of NP<sub>2</sub>, while in (6b) NP<sub>3</sub> is understood to be predicated of NP<sub>1</sub>. Finally, example (7) is ambiguous, depending on whether the AP *nude* is predicated of the object or the subject. Thus the contrasts in (4) and (5) show that simple adjacency of two NPs is not a sufficient condition for predication, while the contrasts in (6) and (7) show that it is not a necessary one.

From these basic observations, we may draw two tentative conclusions: (i) there must be a structural relation between constituents that defines the subject–predicate relation and distinguishes it from other relations that adjacent phrases may bear to one another; (ii) there must be some way of representing “long distance” predication.<sup>1</sup> I shall take it as a methodological given that, all other things being equal, it would be highly desirable if the same structural relation entered into both main clause (MC) and small clause (SC) predication. Certainly the weaker view that predication is realized by entirely different structural relations in different positions should only be adopted as a last resort.

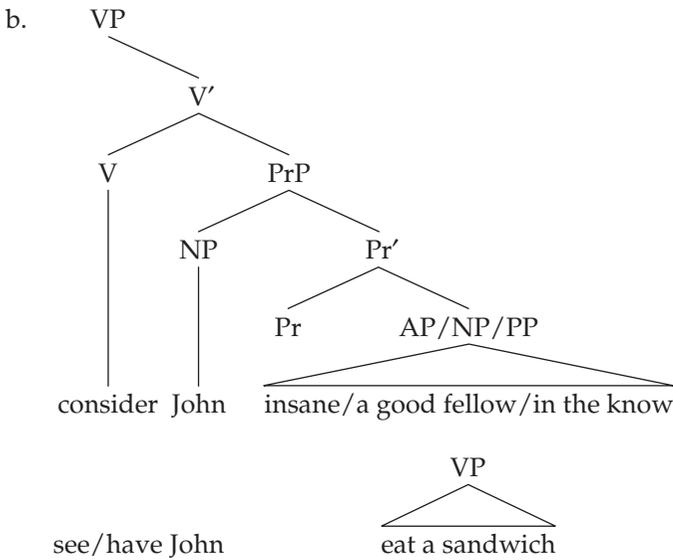
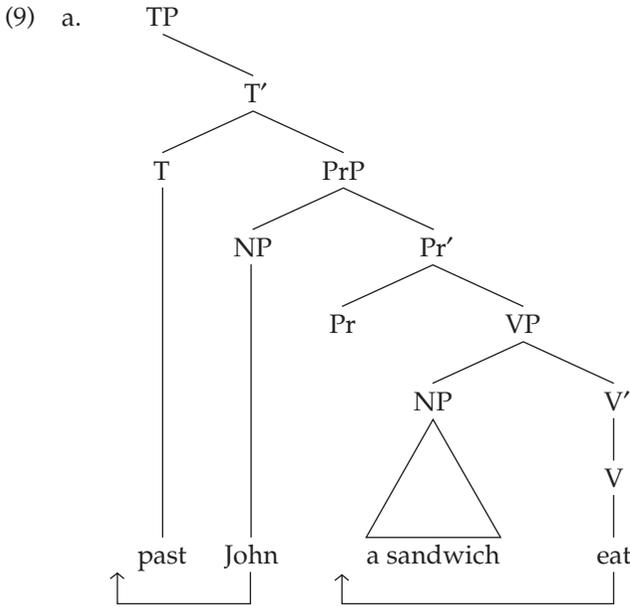
Now let us consider what possibilities there are for the syntactic representation of predication. Given the strong constraints on structural relations imposed by current X'-theory, there are basically only two alternatives: (i) the subject of a predicative expression XP of category X is in [Spec, X]; (ii) there is a functional category F such that the predicative expression XP is the complement of F and its subject is in [Spec, F]. These two possibilities are diagrammed below:



The first view, which I shall refer to henceforth as the Specifier Hypothesis (SH), was originally proposed by Stowell (1981), though only for SC predication. Stowell’s view seemed to receive considerable support from the Internal Subject Hypothesis (ISH), proposed originally by Kuroda (1988) and developed in slightly different forms by Fukui (1986), Kitagawa (1986), and Koopman and Sportiche (1985, 1991), among others. According to the ISH, the surface subject in MC predication originates universally in [Spec, V] and is raised, in languages such as English, into [Spec, I] for case theoretic reasons. The ISH thus filled in the missing gap in Stowell’s version of the SH, making it possible to claim that all subjects originate uniformly in [Spec, X], X a lexical category.

Until the advent of the ISH, the second view, which I shall refer to henceforth as the Functional Category Hypothesis (FCH), was universally maintained for MC predication, the functional category F being identified as I (or its successor T). The difficulties alluded to above in extending the FCH to SC predication were for the most part simply ignored. The FCH, modified and combined with a slightly different version of the internal subject hypothesis, was extended to SC predication by Bowers (1993a).<sup>2</sup> Under this proposal, the functional category F is no longer identified as I. Instead, I is split up into two separate categories "T" and "Pr" and F is identified as the latter. The category T represents the deictic function of I, while Pr represents its predicational function. (The category label Pr is simply a mnemonic for either "predicate" or "predication," depending on whether the focus is on its categorial or its relational function.) Syntactically, Pr is a functional category that selects the maximal projection XP of any lexical category X and whose maximal projection PrP can either be generated independently (yielding SC predication) or selected by T (yielding MC predication). Note that the position of the internal subject in MCs is simply [Spec, Pr]. I assume in addition that objects originate in [Spec, V] and that Verbs obligatorily adjoin to Pr, thus accounting for their surface position preceding the object (see section 3 for further discussion). It seems likely that Pr is actually a feature complex [+Pr, +/-N, +/-V]. The obligatory raising of the head of the complement VP is then explained by the fact that the lexical category features [+V, -N] are strong in English (perhaps universally). (In contrast, Bowers 1993a assumed that head raising of V to Pr was driven by theta-role assignment. Here I remain neutral as to where theta-roles are assigned.) A feature analysis also explains why the parallel category "Nm" in nominals, proposed in Bowers (1991), shares so many properties with Pr, since the two categories differ only in their lexical categorial features: [+Pr, +V, -N] in the case of the latter, [+Pr, -V, +N] in the case of the former. A feature analysis would also partially, though not completely, resolve the apparent difference between Pr and *v* (see n. 2). Finally, I will assume, following Bowers (1993a), that the semantic function of Pr is to turn a property expression of type  $\pi$ , assigned to the constituent XP, into a propositional function (an unsaturated expression) of type  $\langle e, p \rangle$ , whose argument position is then saturated by the entity expression assigned to the NP in [Spec, Pr] (Chierchia 1985, 1989, Chierchia and Turner 1988).<sup>3</sup>

According to this view, then, the basic structures for MC and SC predication would be as shown in (9a, b), respectively:



Though there are apparently languages such as Sinhala (Sumangala 1992) in which AP, NP, and PP can be directly selected by Pr in MCs, English obligatorily requires the copula in such cases. How is this fact to be accounted for? There are two possibilities, both of which have been proposed in the literature: (i) copular *be* is a phonetic spell-out of T; (ii) *be* is a main verb in its own right that selects a SC complement:

- (10) a. [<sub>TP</sub> is [<sub>PrP</sub> John [<sub>Pr'</sub> Pr [<sub>AP/NP/PP</sub> insane/a good fellow/in the know]]]]  
 b. [<sub>TP</sub> T [<sub>PrP</sub> Pr [<sub>VP</sub> be [<sub>PrP</sub> John Pr [<sub>AP/NP/PP</sub> insane/a good fellow/in the know]]]]]

For English at least, it appears that (10b) is correct, because the copula can co-occur with modals: *John may/might/can/should/must/etc. be insane/a good fellow/in the know*.<sup>4</sup>

Notice that not only does hypothesizing the category Pr unify MC and SC predication, providing a purely structural characterization of the predication relation, but it also solves the related problem of what category to assign SCs to: a SC is simply the maximal projection of Pr. Moreover, it does so within the limitations imposed by a uniform two-level version of X'-theory, unlike proposals such as Fukui (1986), and without resorting to the use of base-generated adjuncts, as in Koopman and Sportiche (1985, 1991). In addition, only binary branching is required (Kayne 1984), further narrowing the range of possible structures permitted.

## 1 Comparison of the Specifier Hypothesis and the Functional Category Hypothesis

In this section, I discuss a number of very basic problems with applying the SH to SC predication, all of which can be overcome by adopting the PrP version of the FCH. The structures that would be assigned to SC constructions such as those in (3) by the FCH and the SH, respectively, are as follows:

- (11) a. I consider
- 
- b.
-

### 1.1 The subject of predicate nominals

The first problem for the SH is where to put the subject of the SC in predicate nominal constructions. It obviously cannot go in [Spec, N], since it would incorrectly follow any determiner elements, yielding absurd sentences such as *\*I consider a/my Fred friend*. Equally obviously, it cannot go in [Spec, D] because this position is needed for possessive NPs. The basic problem is that a predicate nominal can in general be an entire DP, not just the maximal projection of N:

- (12) I consider Fred a mensch/the best person for the job/Mary's worst enemy/etc.

Therefore, no matter what Spec position we choose to put the subject of a predicate nominal in, there will always be some class of nominals containing another constituent in that same position. The only alternative would be to posit a Spec position reserved exclusively for subjects of predicate nominals, a move for which there is no independent motivation at all. Under the PrP hypothesis, on the other hand, the complement of Pr could perfectly well be DP. Indeed, given the DP Hypothesis, we would expect the complement of Pr to be a full DP rather than a bare NP.

### 1.2 The subject of predicate adjectives

As a matter of fact, a similar problem arises for predicate adjectives as well, since APs universally occur with an extensive set of degree modifiers:

- (13) I consider Mary  $\left\{ \begin{array}{l} \text{so} \\ \text{too} \\ \text{more} \\ \text{as} \\ \text{extremely} \end{array} \right\}$  brilliant at math  $\left\{ \begin{array}{l} \text{that} \dots \\ \text{to} \dots \\ \text{than} \dots \\ \text{as} \dots \end{array} \right\}$

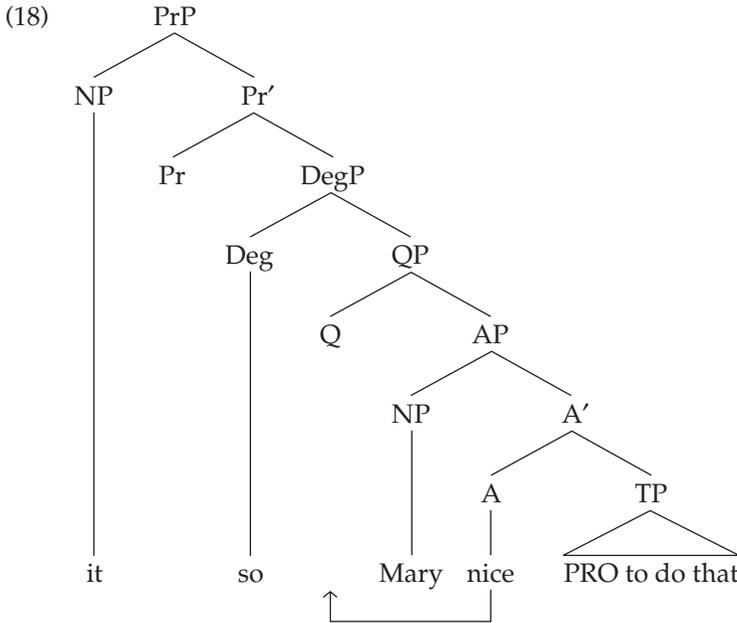
Where would these modifiers be located under the SH? Simple adverbial modifiers such as *extremely* might not pose a problem, since they could plausibly be analyzed as A'-adjuncts:

- (14) I consider [<sub>AP</sub> John [<sub>A'</sub> extremely [<sub>A'</sub> brilliant at math]]]

but such an analysis is difficult to maintain for degree modifiers such as *so*, *too*, *-er*, *as*, etc. which may (and sometimes must) select an associated phrasal or sentential complement. Suppose, following Abney (1987), Bowers (1987), and Corver (1990, 1991, 1997), there is a functional category Deg that selects AP or PP (and perhaps DP as well) as its complement and permits various nominal modifiers in [Spec, Deg]:



1991, Valois 1991, Carstens 1991, 1998), and that Q has a strong A-feature that forces Adjectives to adjoin to it:



That such an analysis is correct is suggested by the fact that when AP is realized as a pro-form *so*, Q must emerge lexically as *much*:

- (19) John is very fond of Mary. – Yes, too much so.  
but not more/less so than Bill.

However, further discussion of the intricacies of the English degree system would go beyond the scope of this survey.

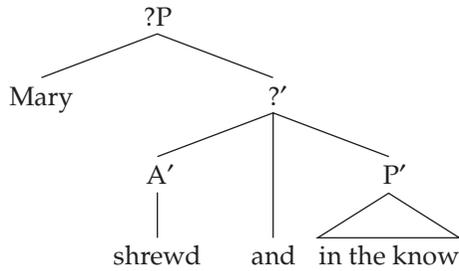
### 1.4 Unlike category conjunction

A serious problem for any version of the SH is that it has no way of explaining apparent cases of unlike category conjunction of the predicative elements in SCs:

- (20) I consider Fred [<sub>AP</sub> crazy] and [<sub>DP</sub> a fool]  
both [<sub>AP</sub> shrewd] and [<sub>PP</sub> in the know]

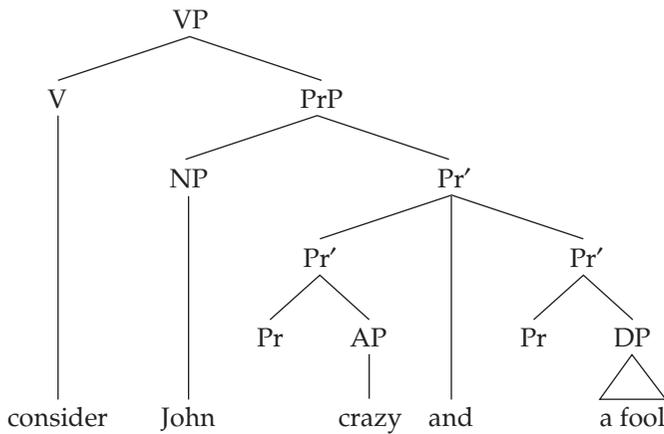
as the following diagram shows:

(21) I consider



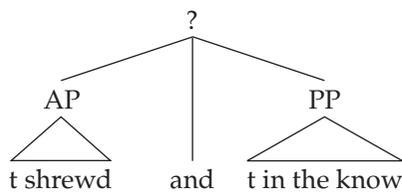
Under the PrP analysis, on the other hand, such examples are easily explained as instances of like category conjunction of the category Pr':

(22)

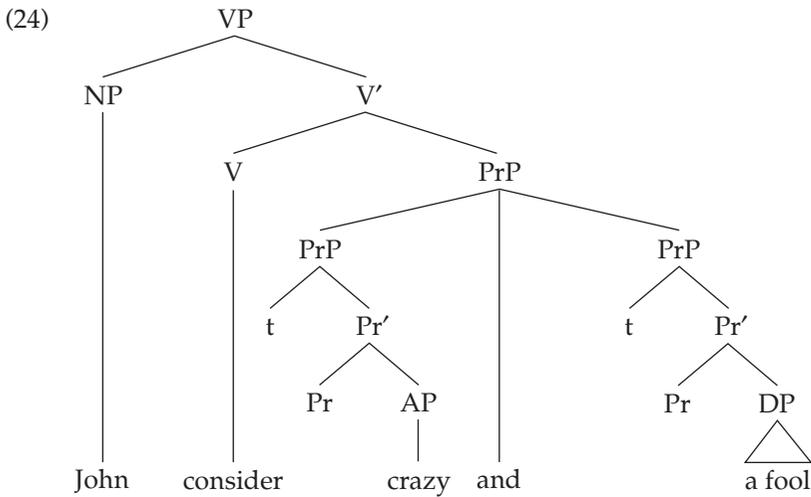


The problem still remains even if (as will be argued later, cf. section 3.1) the subject of the SC must be raised by ATB conjunction:

(23) I consider Mary

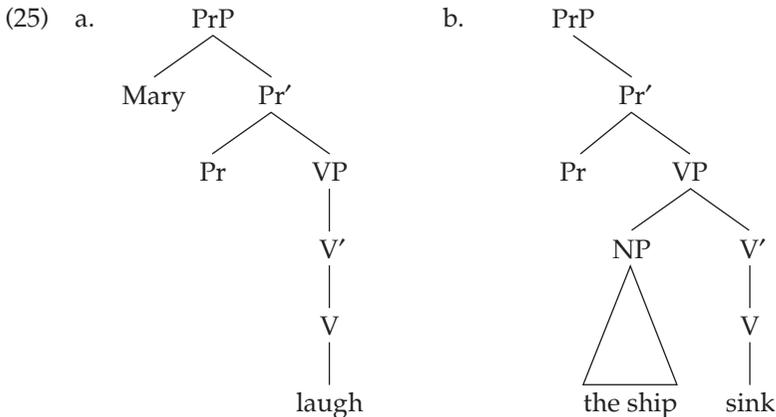


whereas under the PrP analysis, such examples are again easily analyzed as instances of like category conjunction, the category in this case being PrP:



### 1.5 Unaccusatives vs. unergatives

The PrP analysis provides straightforwardly for a structural distinction between unaccusatives and unergatives, the former having a single argument in [Spec, V], the latter a single argument in [Spec, Pr]:



Without Pr, unaccusatives and unergatives could, in principle, be distinguished structurally from one other in the case where each has only a single argument by generating the subject as a complement of V in the former case and in [Spec, V] in the latter case. However, as soon as another PP argument is added, as in the following examples:

- (26) a. Mary laughed at John.  
 b. The ship sank beneath the waves.

there is only one possible position for both subjects, namely, [Spec, V].<sup>6</sup>

## 1.6 Lexical realizations of Pr

If there is a functional category Pr, then we might expect to find it lexically realized in at least some instances. In fact, there is growing body of data in support of this conclusion. It was suggested in Bowers (1993a) that the particle *as* that occurs in English in SC constructions such as the following is a (lexically idiosyncratic) realization of Pr:<sup>7</sup>

- (27) I regard Fred as  $\left. \begin{array}{l} \text{insane} \\ \text{in the know} \\ \text{my best friend} \\ \text{having a good reputation} \end{array} \right\}$

Further support for this view is presented in Bailyn and Rubin (1991) (see also Bailyn 1995a), who show that Russian *kak* and *za* are realizations of Pr and, furthermore, that Pr systematically assigns Instrumental case in SCs. Likewise, Eide and Åfarli (1997) argue that Norwegian *som* and German *als* are realizations of Pr.<sup>8</sup> In addition, Wayne Harbert (personal communication) has suggested that the particle *yn* which occurs systematically in Welsh in predicate nominal constructions such as the following is a lexical realization of Pr:

- (28) Mae Rhys yn athro.  
is Rhys prt a teacher  
"Rhys is a teacher."

An even more systematic lexical realization of Pr occurs in Korean, where the particle *-kye* marks predication in SC constructions such as the following with complete regularity (Jang 1997, Kang 1997, Kim and Maling 1997):

- (29) Mary-nun emeni-lul alumtap-kye sangkakha-n-ta.  
Mary-Nom mother-Acc beautiful-Pr consider-Pres-Dec  
"Mary considers her mother beautiful."

Crucially, as Kang (1997) notes, predicates in SCs cannot occur with the honorific marker *-si* or the tense markers which normally occur in T or AGR, ruling out the possibility that *-kye* is a realization of either of the latter.

Finally, Nishiyama (1998) presents extensive evidence in support of the view that Pr is realized lexically in Japanese in various different phonetic forms. In the class of Adjectives he calls "Nominal Adjectives," Pr is realized as the morpheme *-de*, the full form of which occurs in (30a) and in contracted form in (30b):

- (30) a. yoru-ga sizuka-de ar-u.  
night-Nom quiet-Pr cop-Pres  
"The night is quiet."

- b. yoru-ga    sizuka-da.  
 night-Nom quiet-Pr/cop/Pres  
 "The night is quiet."

Furthermore, Nishiyama shows that Pr is realized as underlying *-k* in a different morphological class of adjectives he refers to as "Canonical Adjectives," though *-k* is elided in present tense forms such as (31b):

- (31) a. yama-ga            taka-k-at-ta.  
 mountain-Nom high-Pr-cop-Past  
 "The mountain was high."  
 b. yama-ga            taka-(k)-i.  
 mountain-Nom high-Pr-Pres  
 "The mountain is high."

Nishiyama demonstrates convincingly that though Pr has a variety of phonological realizations as the result of the complex interaction of morphological and phonological processes, the underlying syntactic structures are perfectly regular.

In conclusion, it appears that Pr, like other functional categories that have been posited in recent years, may be realized phonologically but need not be. Furthermore, as the Japanese evidence shows, the lexical realization of Pr is subject to morphological syncretism as the result of historical change, as is commonly the case with functional categories.

## 2 Further Syntactic Arguments in Support of Pr

Having established in a preliminary fashion the plausibility of the PrP version of the FCH, I now turn to some rather more intricate syntactic considerations that provide further syntactic evidence in support of this approach to predication.

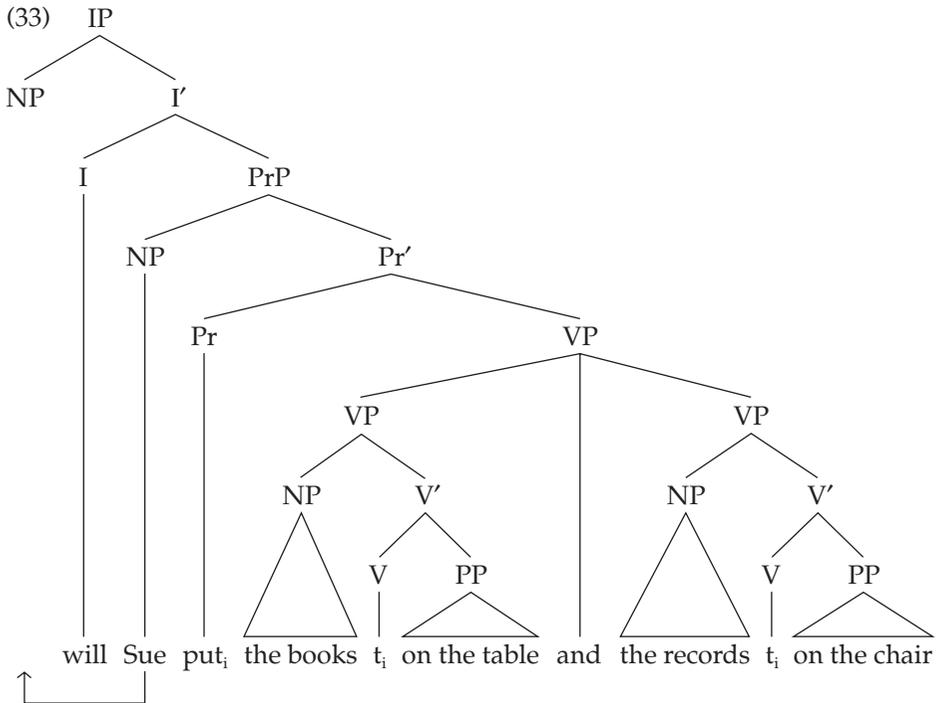
### 2.1 VP conjunction

One such argument can be derived from the fact that English apparently permits ill-formed constituents containing only a direct object and a complement of some kind to conjoin quite freely (Larson 1988, Bowers 1993a):

- (32) a. Mary considers John a fool and Bill a wimp.  
 b. John regards professors as strange and politicians as creepy.  
 c. Sue put the books on the table and the records on the chair.  
 d. Harriet gave a mug to John and a scarf to Vivien.  
 e. I expect John to win and Harry to lose.  
 f. We persuaded Mary to leave and Sue to stay.

- g. You eat the fish raw and the beef cooked.  
 h. I convinced John that it was late and Bill that it was early.  
 i. They told Sue who to talk to and Virginia when to leave.

Clearly, traditional analyses of the VP fail to shed much light on this phenomenon. A ternary analysis of VP, in particular, makes it impossible to generate such sentences.<sup>9</sup> Under the PrP hypothesis, on the other hand, they are simply instances of ATB extraction of V from a conjoined VP:



It is known on the basis of comparative evidence that non-auxiliary verbs do not raise to I in English (Emonds 1978, Pollock 1989). Hence, the ATB extraction of V required in these structures is only possible if there is an X<sup>0</sup> position between I and V which the extracted verb can be adjoined to. The needed head position is provided by Pr. Independent evidence for this conclusion can be derived from the existence of RNR sentences (Larson 1990) in which the raised constituent must be a VP containing a V-trace:

- (34) a. Smith loaned, and his widow later donated, a valuable collection of manuscripts to the library.  
 b. Sue moved, and Mary also transferred, her business to a different location.

- c. I succeeded in convincing, even though John had failed to persuade, Mary not to leave.
- d. We didn't particularly like, but nevertheless ate, the fish raw.
- e. Most people probably consider, even though the courts didn't actually find, Klaus von Bulow guilty of murder.
- f. Flo desperately wants, though she doesn't really expect, the Miami Dolphins to be in the Superbowl.

## 2.2 *Adverb positions*

Another indirect way demonstrating the need for a category Pr is the following. Modifying Travis (1988) along the lines suggested in Tang (1990), let us make the following fairly restrictive assumptions concerning the structure and licensing of adverb phrases: (i) AdvPs are X'-adjuncts licensed by an X<sup>0</sup> head; (ii) each head licenses one and only one type of AdvP.<sup>10</sup> If it could be shown that there was an adverb type in the appropriate position for which there was no licensing head, and if it could be shown that Pr was a plausible licensor for adverbs of this type, then it could reasonably be concluded that Pr exists. Consider in this light the fact that certain manner adverbs in English can only occur in postverbal position:

- (35) a. John learned French perfectly.
- b. Bill recited his lines poorly.
- c. Mary plays the violin beautifully.
  
- (36) a. \*John perfectly learned French.
- b. \*Bill poorly recited his lines.
- c. \*Mary beautifully plays the violin.

while other manner adverbs occur in both positions:

- (37) a. John learned French immediately.
- b. Bill recited his lines slowly.
- c. Mary will play the violin soon.
  
- (38) a. John immediately learned French.
- b. Bill slowly recited his lines.
- c. Mary will soon play the violin.

These two types can co-occur with one another, but cannot be interchanged:

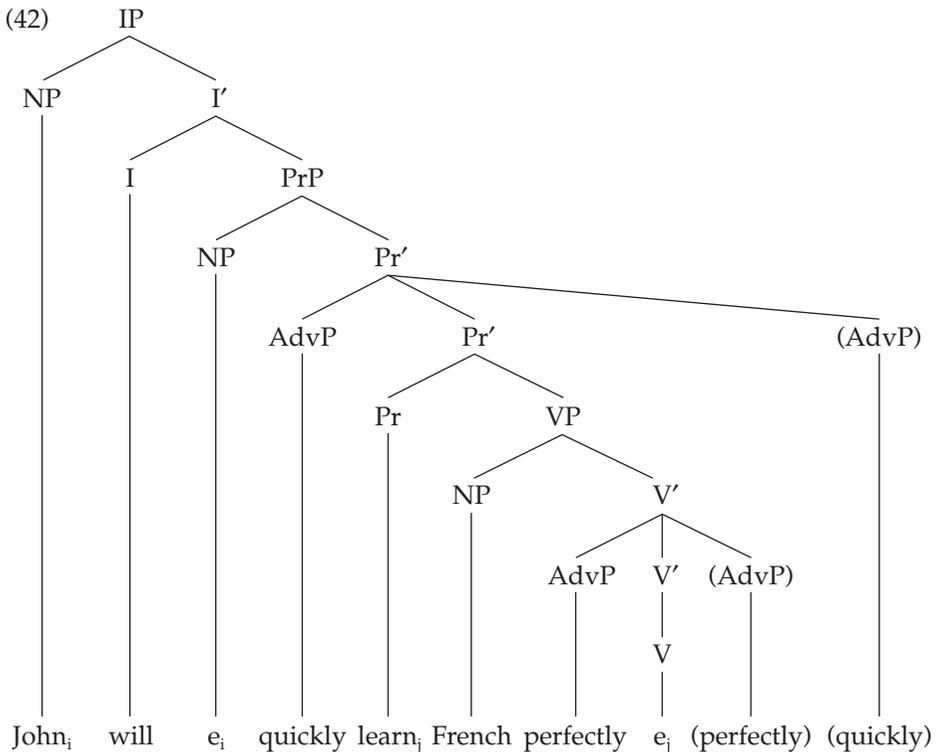
- (39) a. John immediately learned French perfectly.
- b. John learned French perfectly (almost) immediately.

- (40) a. \*John perfectly learned French immediately.  
 b. \*John learned French immediately perfectly. (modulo Heavy Constituent Shift)

This strongly suggests that they are licensed by different categories. The problem is that there are at least two further distinct adverb types in English (making a total of four), none of which can be interchanged with any of the others:

- (41) a. Clearly, John probably will immediately learn French perfectly.  
 b. \*Clearly, John immediately will probably learn French perfectly.  
 c. \*Immediately, John probably will clearly learn French perfectly.  
 d. \*Clearly, John perfectly will immediately learn French probably.  
 etc.

Since the only three categories available as licensers are V, I, and C, either another licenser is needed or we must assume that the two types of manner adverb discussed above are both licensed by V.<sup>11</sup> But if adverbs such as *perfectly* are licensed by V and adverbs such as *immediately* by Pr, then their distribution follows immediately, as can be seen by examining the following structures:



The fact that *perfectly* can only appear in postverbal position is now explained automatically by virtue of obligatory V-raising into Pr, which ensures that the verb is always to the left of the adverb, regardless of whether it is generated as a left or right V'-adjunct. Adverbs such as *quickly*, in contrast, can appear either as left Pr' adjuncts or as right Pr' adjuncts, hence either to the left or to the right of VP. The fact that the two adverb types cannot exchange positions follows from the fact that they are licensed by different heads.<sup>12</sup>

It was noted earlier that Pr, in contrast to a VP shell or the "light" verb *v*, is always present in both MCs and SCs, regardless of how many arguments a given predicate has. Further evidence in support of this claim is provided by the fact that V-licensed adverbs are uniformly restricted to postverbal position, regardless of how many arguments the verb has and regardless of where they originate:

- (43) a. John (\*perfectly) rolled the ball (perfectly) down the hill (perfectly).  
 b. John (\*perfectly) shot the ball (perfectly).  
 c. The ball (\*perfectly) rolled (perfectly) down the hill (perfectly).  
 d. The ball (\*perfectly) rolled (perfectly).  
 e. John (\*intimately) spoke (intimately) to Mary (intimately).  
 f. It (\*torrentially) rained (torrentially).

It is difficult to explain this distribution of V-licensed adverbs unless there is a fixed Pr position to which the verb must adjoin obligatorily. Strikingly, this generalization holds even in the case of 0-place predicates such as *rain*, as (43f) shows.<sup>13</sup>

This analysis also makes a further correct prediction concerning the distribution of V-licensed adverbs, namely, that they can appear either to the left or to the right of a complement:

- (44) a. John spoke French intimately to Mary.  
 b. John spoke French to Mary intimately.
- (45) a. Mary jumped the horse perfectly over the last fence.  
 b. Mary jumped the horse over the last fence perfectly.

This fact also rules out the possibility of analyzing V-licensed adverbs as complements (Larson 1988), since they would then be unable to co-occur with PP complements.

Consider, finally, the well-known fact that adverbs in English strongly resist being placed between a verb and a direct object, though not, as just noted, between a verb and a PP-complement:

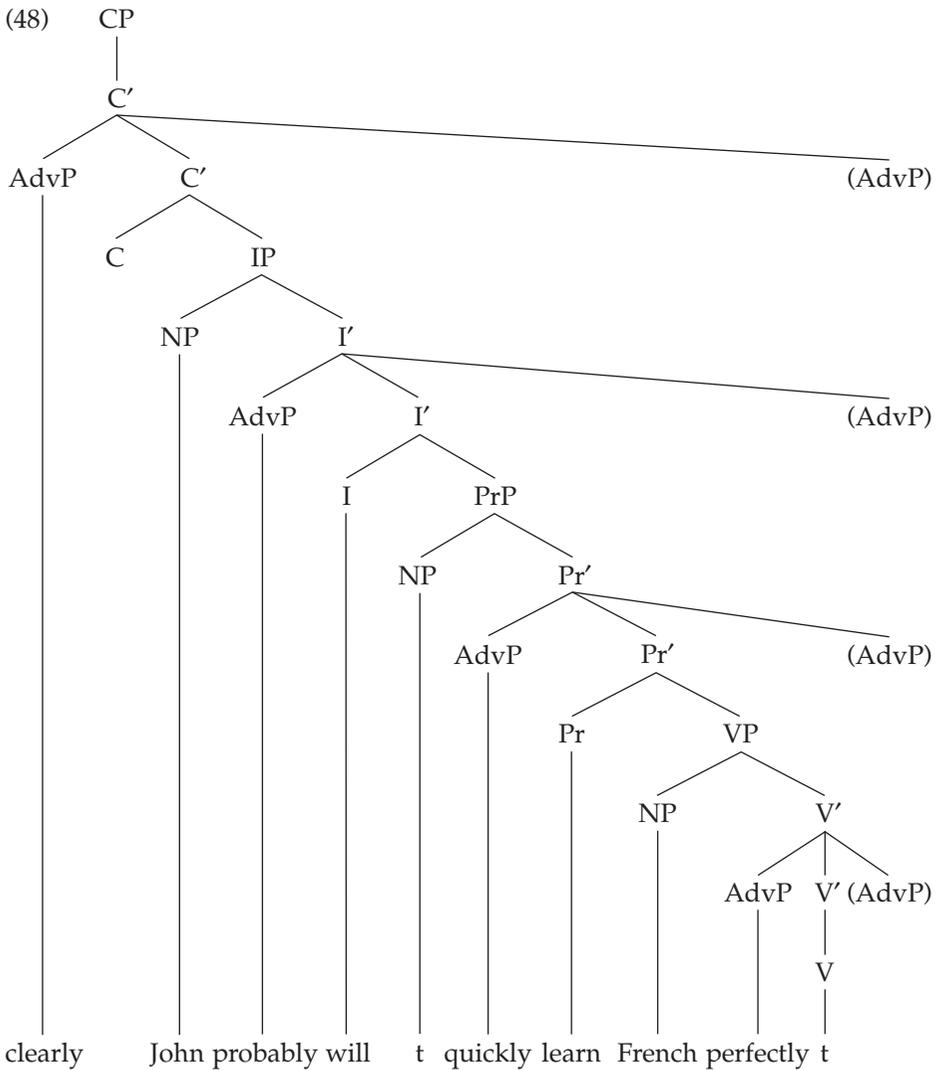
- (46) a. John spoke French intimately to Mary.  
 b. \*John spoke intimately French to Mary.

Following Stowell (1981), this restriction on the placement of adverbs in English is usually accounted for in the literature by means of a so-called “adjacency requirement” on case assignment, which stipulates that accusative case can only be assigned by the verb to a NP that it is adjacent to. Apart from the inherent implausibility of restricting case assignment in this way, there are at least two empirical arguments against such an approach. First, adjacency is not a general requirement for case assignment, even in English, since adverbs can occur quite freely between the subject and the I<sup>0</sup> head that assigns it nominative case: *John certainly will win the race*. Second, the adjacency requirement simply does not hold in many languages, even in typologically quite similar languages such as French (Bowers 1993a: section 3.2.1):

(47) Jean parle souvent le français.

Hence all that remains of the adjacency requirement is a language-specific condition on assignment of accusative case; hardly an explanatory theory, one would think.

Under the analysis proposed here, in contrast, this restriction on the occurrence of adverbs can be explained in purely structural terms. First of all, the fact that V-licensed adverbs such as *perfectly* cannot occur between the verb and its direct object follows immediately from the assumption that these adverbs are V'-adjuncts, together with the linked hypotheses that the canonical position for direct objects is [Spec, V] and that the verb raises obligatorily into Pr<sup>0</sup>. These assumptions jointly ensure that there is simply no way of generating an adverb of this type between the verb and its object in English. (Note that for this explanation to work it is crucial that adverbs *not* be treated as XP-adjuncts, contrary to what is frequently assumed in the literature.) Second, these same assumptions ensure that it is impossible to generate adverbs licensed by any other head between the verb and its object. Thus a Pr-licensed adverb, for example, will be generatable either to the left of the raised verb or to the right of the whole VP complement of Pr<sup>0</sup>, but not in any other position. The possible positions for adverbs permitted by this theory are indicated in the following structure for (41a):



Finally, the fact that other complements of the verb cannot be ordered between the verb and the direct object:

- (49)
- a. \*John spoke to Mary French.
  - b. \*Mary persuaded to leave John.
  - c. \*The lions ate raw the meat.
  - d. \*Sue gave to Bill a book.
  - e. \*Mary persuaded that he should rest Bill.

can also be explained in purely structural terms. In short, given the theory of predication proposed here, all the ordering properties attributed to the adjacency

condition on case assignment can be derived from more basic principles, together with the (perhaps universal) fact that Spec positions are always leftward.<sup>14</sup>

### 3 The Internal Structure of PrP

In this section I explore briefly some of the syntactic evidence bearing on the internal structure of PrP, particularly the argument structure of VP and the position of small clause adjuncts.

#### 3.1 *Raising to object and the structure of VP*

One particularly significant consequence follows from the claim that objects, as well as subjects, are located in a Spec position. Since Spec positions can in general be theta'-positions, it should be the case that object position, as well as subject position, is a possible theta'-position. In fact, Postal and Pullum (1988) have argued that one of the crucial tests for a theta'-position, namely, occurrence of expletives, holds for object position as well as subject position. This in turn would make it possible, contrary to the standard view, for there to be Raising-to-Object (RO), as well as Raising-to-Subject (RS), without violating the Theta-Criterion.<sup>15</sup>

##### 3.1.1 *Quantifier floating*

An important empirical argument in support of RO can be derived from the facts of so-called "quantifier floating" in English and other languages. The basic observation, due originally to Maling (1976), is that certain quantifiers can "float" to the right of the NP they modify under two conditions: (i) if the NP is a subject; (ii) if it is an object that has a predicative complement following it. Crucially, quantifier floating is not possible from objects that lack a predicative complement:

- (50) a. The men will all leave.  
 b. We consider the men all fools/totally crazy.  
 c. \*I saw the men all.  
 d. \*The men were arrested all.  
 e. \*The men arrived all.

These facts can be elegantly explained under the following assumptions:

- (51) i. Floated quantifiers are produced by leftward movement of NP (Sportiche 1988).  
 ii. Raising to object (RO) exists.  
 iii. Q is adjoined only to the "propositional" categories PrP and IP.<sup>16</sup>

As shown in (52a), a stranded quantifier is always possible in subject position, since subjects always move from [Spec, Pr] to [Spec, I]; more importantly, the

possibility of a stranded quantifier in object position also follows if RO exists, as shown in (52b):

- (52) a.  $[_{IP} \text{ the men}_1 [_Y \text{ will } [_{PrP} \text{ all } [_{Pr} t_1 [_{Pr'} \text{ leave}_2 [_{VP} t_2]]]]]]]$   
 b.  $[_{IP} \dots [_{PrP} \text{ we } [_{Pr'} \text{ consider}_1 [_{VP} \text{ the men}_2 [_V' t_1 [_{PrP} \text{ all } [_{PrP} t_2 [_{Pr'} e \text{ fools}]]]]]]]]]$

Floating from an object which lacks a complement, as in example (50c), is ruled out, because the object has not been moved. The fact that floated quantifiers are prohibited in postverbal position in passives and unaccusatives, as shown by examples (50d, e), follows from assumption (51iii), which prohibits Q from being adjoined to VP.

Finally, if this analysis is correct, then we would expect floating quantifiers to occur with PRO as well as trace, as is indeed the case:

- (53) a.  $I \text{ persuaded}_1 [_{VP} \text{ the men}_2 [_V' t_1 [_{IP} \text{ all } [_{IP} \text{ PRO}_2 \text{ to resign}]]]]]$   
 b. The teacher ordered the two boys both to pay close attention.  
 c.  $We \text{ put}_1 [_{VP} \text{ the students}_2 [_V' t_1 [_{PrP} \text{ each } [_{Pr} \text{ PRO}_2 [_{Pr'} e \text{ in separate desks}]]]]]]]$   
 d. They returned the books all to their owners.  
 e. We painted the chairs all red.  
 f. The trainer fed the steaks all to the lions.

These observations lead to the conclusion that goal phrases and dative expressions such as those in (53c, d, f) must in general be SC complements with a PRO subject.<sup>17</sup>

### 3.1.2 VP fronting

Another important argument in support of RO can be derived from the facts of VP Fronting discussed in Huang (1993). Huang notes that though the anaphor in a fronted complex *wh*-NP has a wider range of coreference possibilities than it does if it remains in situ:

- (54) a. Which pictures of himself<sub>i/j</sub> did John<sub>i</sub> think Bill<sub>j</sub> liked?  
 b. John<sub>i</sub> thought Bill<sub>j</sub> liked pictures of himself<sub>\*i/j</sub>.

the same is not true of fronted VPs:

- (55) a. Criticize himself<sub>\*i/j</sub> John<sub>i</sub> thinks Bill<sub>j</sub> never will.  
 b. John<sub>i</sub> thinks Bill<sub>j</sub> will never criticize himself<sub>\*i/j</sub>.

Here the anaphor in the fronted VP can only be coreferential with the NP that would necessarily bind it if it remained in situ. Huang argues that this contrast can be explained if some version of the internal subject hypothesis is correct, for in that case the fronted constituent in (56) will contain a trace of the moved internal subject:

(56) [ $_{\alpha}$  t<sub>j</sub> criticize himself<sub>j</sub>] John<sub>i</sub> thinks Bill<sub>j</sub> never will t]

By Condition A of the Binding Theory, *himself* must be bound by the trace left by the moved internal subject, hence must be coreferential with it.

It is now easy to show that the category of  $\alpha$  in structures such as (56) must be PrP. Consider first the following example:

(57) Proud of himself<sub>i/j</sub> John<sub>i</sub> doesn't think Bill<sub>j</sub> will ever be.

A fronted AP behaves exactly like a fronted VP with regard to the coreference possibilities of the anaphor contained in it, suggesting that the fronted constituent, whatever it is, must also contain the trace of a raised internal subject:

(58) [ $_{\alpha}$  t<sub>j</sub> proud of himself<sub>j</sub>] John<sub>i</sub> thinks Bill<sub>j</sub> will never be t]

Clearly the same process is involved in VP-fronting and AP-fronting. But if the analysis of MC and SC predication proposed here is correct, then the two processes immediately reduce to a single one, since  $\alpha$  must be PrP in both cases. Furthermore, it is now possible to construct an independent argument in support of RO. Consider the following example:

(59) Proud of himself<sub>i/j</sub> John<sub>i</sub> doesn't consider Bill<sub>j</sub>.

Once again, the coreference facts show that the fronted constituent must contain the trace left by a raised internal subject. In this instance, however, the subject of the SC is not raised to [Spec, I] but rather to [Spec, V], that is, to the object position. If RO were not involved in the derivation of these SC constructions, then we would expect to find fronted PrP constituents of the following sort:

(60) \*Bill proud of himself John doesn't consider.

But such sentences are not even marginally acceptable, showing unequivocally that RO exists.<sup>18</sup>

### 3.1.3 Dative arguments and RO

It has often been noted in the literature that there is a small class of verbs in English which, though apparently transitive in form, cannot be passivized:

- (61) a. John went home/\*Home was gone by John.  
 b. Mary left the room angry/\*The room was left angry (by Mary).  
 c. John resembles Bill/\*Bill is resembled by John.  
 d. The package weighed 10 lb/\*10 lb was weighed by the package.  
 e. This book cost \$10/\*\$10 was cost by this book.  
 f. The book cost John \$10/\*John was cost \$10 by the book.

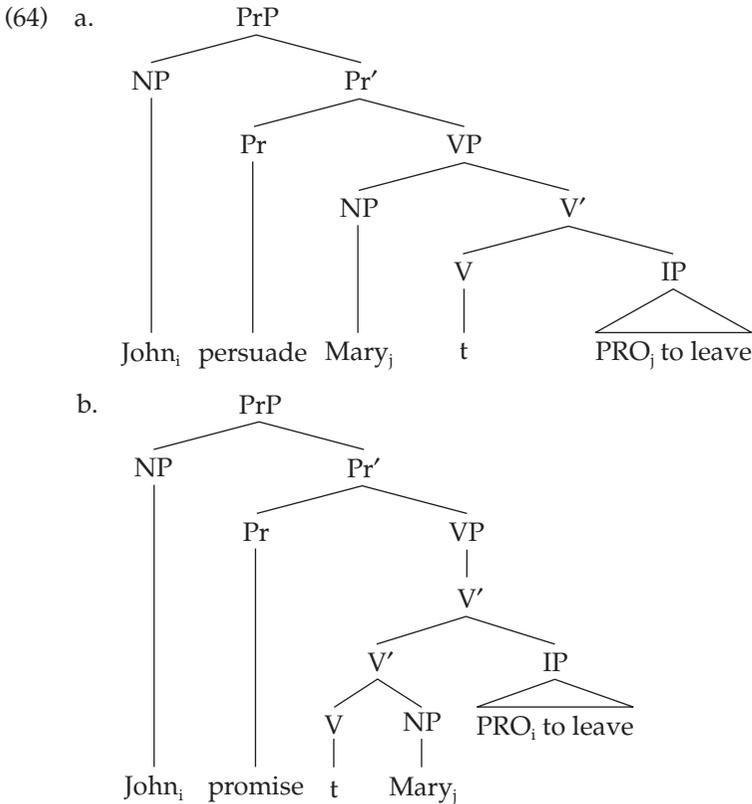
A related phenomenon (commonly referred to in the literature as "Visser's generalization," though the standard account is Bach 1979) is the fact that transitive subject-control verbs lack passives:

- (62) a. \*John is impressed (by Bill) as pompous.  
 b. \*The boys were made a good mother (by Aunt Mary).  
 c. \*The kids were failed (by Max) as a father.  
 d. \*The men were struck by the idea as nonsense.  
 e. \*The men were promised (by Frank) to leave.

Interestingly, it has been observed by Maling (1976) that the very same verbs that do not passivize also do not permit floated quantifiers associated with their objects:

- (63) a. \*He impresses his friends all as pompous.  
 b. \*Aunt Mary made the boys all a good mother.  
 c. \*Max failed the kids all as a father.  
 d. \*The idea struck the men all as nonsense.  
 e. \*Frank promised the men all to leave.

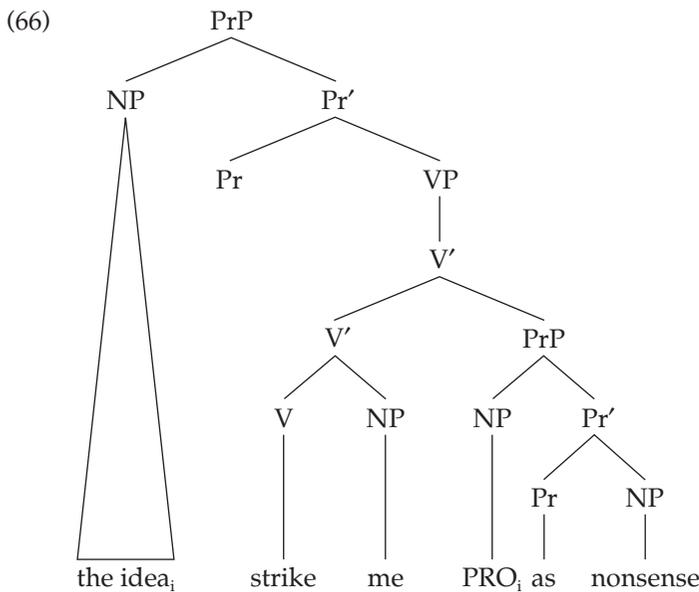
Clearly, this cannot be an accident, suggesting that there is a structural difference between direct objects and indirect objects. Let us assume the following structures for sentences with *persuade* and *promise*, respectively (see also Larson 1991, for a somewhat different analysis along the same general lines):



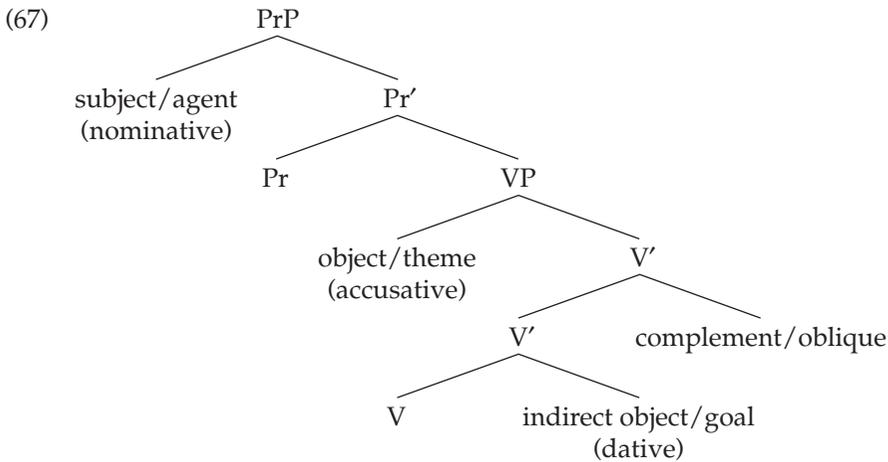
Assuming that *Mary* in (64b) receives inherent Dative case, Visser's generalization follows immediately, since only Accusative case (assigned in [Spec, V]) can be "absorbed" by the passive morphology. This analysis also explains the well-known control properties of these verbs:

- (65) a. John<sub>i</sub> persuaded Mary<sub>j</sub> [PRO<sub>i/j</sub> to leave]  
 b. John<sub>i</sub> promised Mary<sub>j</sub> [PRO<sub>i/\*j</sub> to leave]

Assuming the standard view that PRO must be controlled by the nearest c-commanding NP, the control properties indicated in (65) follow at once. Maling's observation concerning quantifier floating is simply a corollary of this solution to the control problem, since only in (64a) does the apparent object c-command the floating quantifier in the complement clause. The remaining examples in (62) are exactly like (64b) in structure except that they contain a SC complement with a PRO subject. An example such as (63d) would therefore be represented as follows:



Notice that the considerations discussed so far indicate that the argument structure of the PrP must have a fixed structure of the following form:<sup>19</sup>



Some further support for the correctness of (67) can be derived from the fact that there are sentences containing all three arguments, a direct object, indirect object, and SC or sentential complement:

- (68)
- a. They feed the meat<sub>i</sub> to the lions PRO<sub>i</sub> raw.
  - b. John put the patient<sub>i</sub> in bed PRO<sub>i</sub> drunk. (Roberts 1988: 708, n. 3)
  - c. I sent John<sub>i</sub> to the store PRO<sub>i</sub> to get the paper.

As predicted, the direct object, rather than the indirect object, controls the PRO subject of the complement.

Returning now to RO, let us consider its predicted interaction with dative arguments and V-licensed adverbs. As just shown, the latter both occur in positions subordinate to, and to the right of, the direct object. Therefore, if RO exists, the order of these elements must be as follows:

(69) V-Object-(Adverb)-(Dative)-Complement

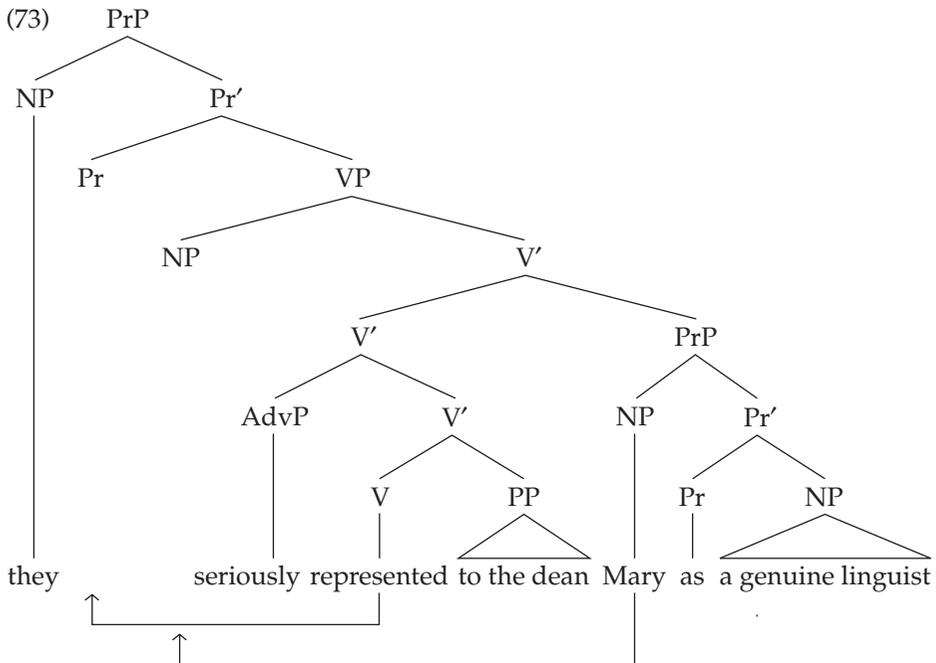
Remarkably, this prediction is borne out by the facts, as the following data shows:

- (70)
- a. \*We proclaimed to the public John to be a hero.
  - b. We proclaimed John to the public to be a hero.
  - c. \*We proclaimed sincerely John to be a hero.
  - d. We proclaimed John sincerely to be a hero.
  - e. \*We proclaimed sincerely to the public John to be a hero.
  - f. We proclaimed John sincerely to the public to be a hero.

- (71)
- a. \*They represented to the dean Mary as a genuine linguist.
  - b. They represented Mary to the dean as a genuine linguist.
  - c. \*They represented seriously Mary as a genuine linguist.

- d. They represented Mary seriously as a genuine linguist.  
 e. \*They represented seriously to the dean Mary as a genuine linguist.  
 f. They represented Mary seriously to the dean as a genuine linguist.
- (72) a. \*We proved to the authorities Smith to be the thief.  
 b. We proved Smith to the authorities to be the thief.  
 c. \*We proved conclusively Smith to be the thief.  
 d. We proved Smith conclusively to be the thief.  
 e. \*We proved conclusively to the authorities Smith to be the thief.  
 f. We proved Smith conclusively to the authorities to be the thief.

Historically, one of the main objections to admitting RO as a possible operation in the theory of grammar was the fact that it appeared to be string vacuous. As the following derivation shows, this particular objection to RO no longer carries any force:



Returning finally to the impassivizable verbs in (61), note that in each case there is at least some independent evidence in support of the view that the apparent direct object is really an underlying dative argument. The apparent object in examples (61a, b) is clearly a directional complement that idiosyncratically lacks a preposition, as revealed by related examples such as *John went to his/the home* (n.b. \**John went his/the home*), *Mary went out of/away from the room*, etc. The dative character of the apparent object in (61c) shows up in

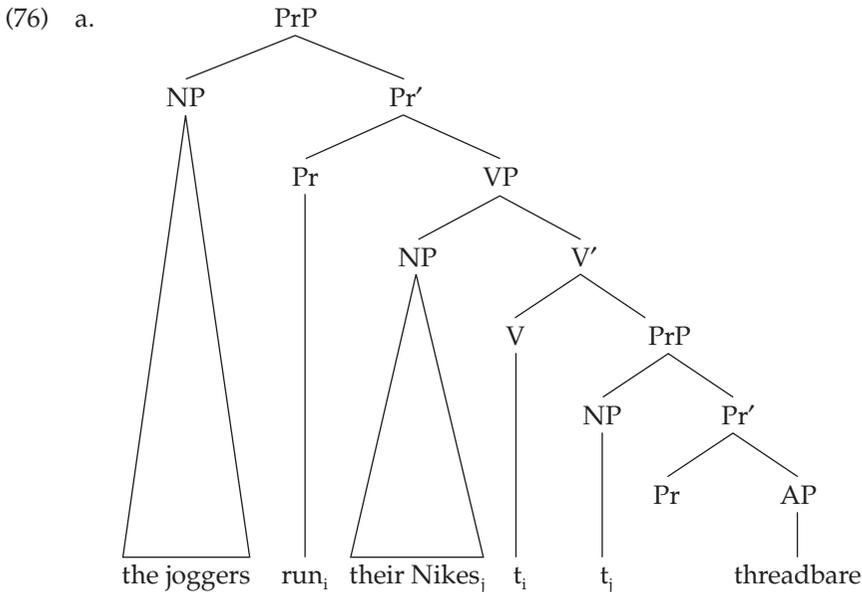
related nominal forms such as *John's resemblance to Bill/the resemblance of John to Bill*. In the case of examples (61d, e) it seems more plausible to suppose that the measure expressions *10 lb* and *\$10* are predicates of a SC complement. (61f) further supports this hypothesis, since the (impassivizable) dative object optionally occurs to the left of the measure expression.

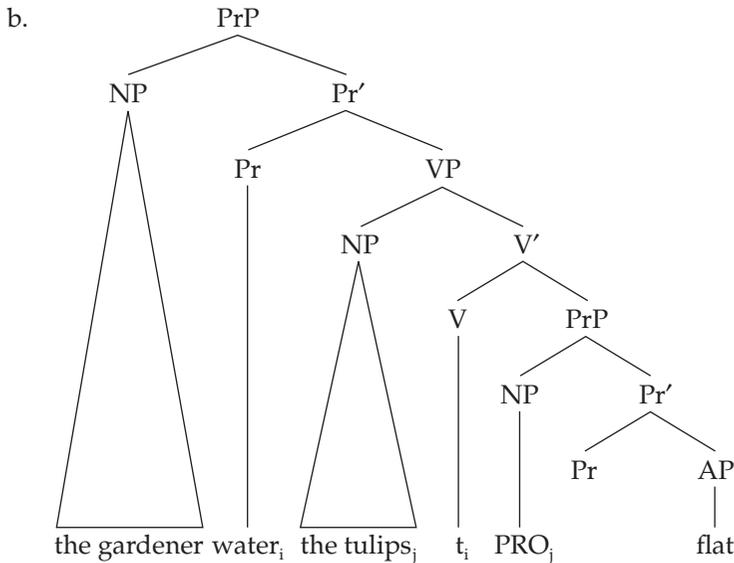
### 3.2 Resultatives

Having demonstrated that RO applies to the subjects of SCs as well as to the subjects of non-finite complement clauses, we might expect to find pairs of SCs that differ only in whether they contain trace or PRO in subject position. In fact, the difference between transitive and intransitive resultative constructions (Carrier and Randall 1992) can be explained in just this fashion. Consider, for example, the following sentences:

- (74) a. The gardener watered the tulips flat.
- b. The grocer ground the coffee beans (in)to a fine powder.
- c. They painted their house a hideous shade of green.
  
- (75) a. The joggers ran their Nikes threadbare.
- b. The kids laughed themselves into a frenzy.
- c. He sneezed his handkerchief completely soggy.

Bowers (1997b) shows that the syntactic properties of these constructions follow immediately if the former are treated as control constructions and the latter as raising constructions. Otherwise, their structures are identical:





Transitive and intransitive resultatives thus turn out to be exactly analogous to infinitival complements of verbs such as *persuade* and *believe*, respectively.<sup>20</sup>

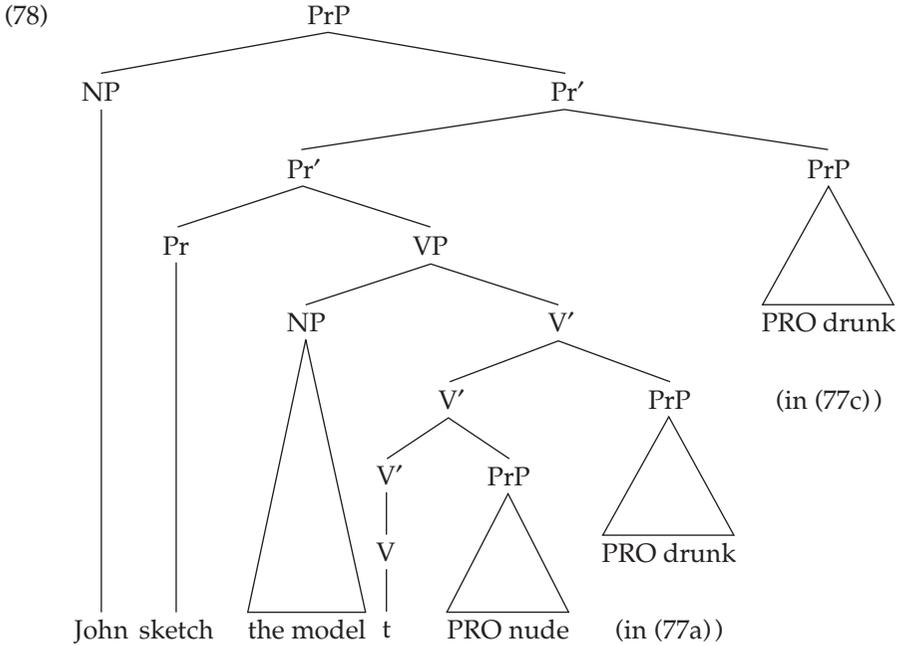
### 3.3 SC adjuncts

It was observed at the beginning of this chapter that there must be a way of representing “long distance” predication, since SC complements in postverbal position can, under certain conditions, be construed as predicated of the subject. Consider, for example, the following data from Carrier and Randall (1992) containing “depictive” SCs:

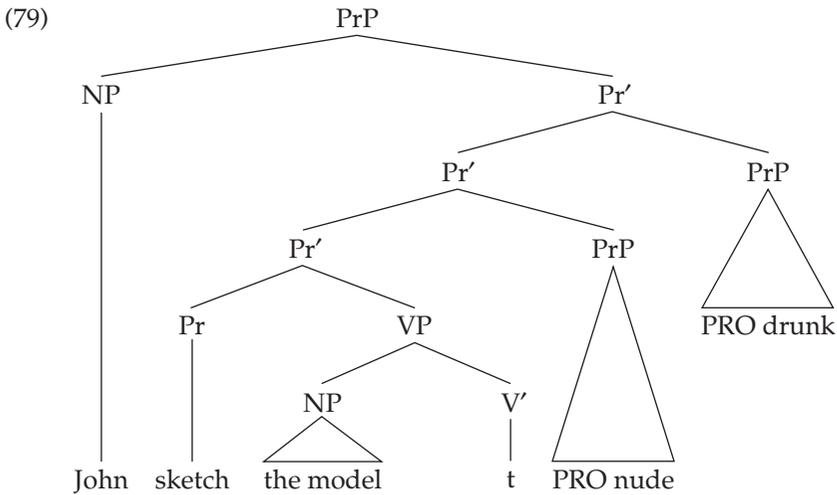
- (77) a. John<sub>i</sub> sketched the model<sub>j</sub> [nude]<sub>j</sub> [drunk as a skunk]<sub>j</sub>.  
 b. John<sub>i</sub> sketched the model<sub>j</sub> [nude]<sub>j</sub> [drunk as a skunk]<sub>i</sub>.  
 c. John<sub>i</sub> sketched the model<sub>j</sub> [nude]<sub>i</sub> [drunk as a skunk]<sub>j</sub>.  
 d. \*John<sub>i</sub> sketched the model<sub>j</sub> [nude]<sub>i</sub> [drunk as a skunk]<sub>j</sub>.

What this shows is that given two depictives, both may be subject oriented; both may be object oriented; the inner one may be object oriented and the outer one subject oriented; but the inner one may not be subject oriented and the outer one object oriented. The theory proposed here provides a straightforward account of these facts in terms of the usual assumption that PRO is controlled by the nearest c-commanding antecedent. Let us hypothesize that object oriented depictives are simply V'-adjoined PrPs with a PRO subject and that subject oriented depictives are Pr'-adjoined PrPs with a PRO subject. The facts can then be handled as follows. In (77a), shown in (78), the nearest c-commanding antecedent of both *PRO nude* and *PRO drunk* is the object *the model*. In (77b), also shown in (78), the nearest c-commanding antecedent of

*PRO nude* is the object *the model*, while the nearest c-commanding antecedent of *PRO drunk* is the subject *John*:



In (77c), shown in (79), the nearest c-commanding antecedent of both *PRO nude* and *PRO drunk* is the subject *John*. To get (77d), *PRO drunk* would have to be both c-commanded by *the model* and to the right of *PRO nude*, an impossible configuration:



Hence all the facts can be accounted for under standard assumptions about control.

Finally, note that the assumption that object oriented depictives are V'-adjuncts explains why they cannot in general be construed as predicated of PP-complements (Bowers 1993a: 97), given the usual c-command condition on control:

- (80) a. They fed the meat<sub>i</sub> to the lions<sub>j</sub> [<sub>PrP</sub> PRO<sub>i,\*j</sub> raw]  
b. \*The lions ate at the meat<sub>i</sub> [<sub>PrP</sub> PRO<sub>i</sub> raw]

Thus it appears that long distance predication can in general be reduced to control theory, given the PrP account of SCs.

## 4 Conclusion

There could hardly be a relation more fundamental to grammar than predication. Indeed, it could be argued that predication is, in a certain sense, *the* most fundamental relation in both syntax and semantics. Though there are many features of natural language systems that one could imagine eliminating without seriously impairing communication, predication is surely not one of them. Despite the obvious centrality of predication, syntacticians have seldom tried to approach it in a systematic and unified fashion. Instead, the feeling seems to have been that the right characterization of predication would simply fall out, once an adequate description of other more fundamental features of grammar had been attained. While agreeing with the fundamental mainstream assumption that the predication *relation* can be expected to be definable in terms of the more basic structures and categories of grammar, I believe that the work surveyed here shows that a descriptively and explanatorily adequate theory of predication requires positing a grammatical and morphological category Pr, whose function it is to relate subject to predicate. As is the case with other functional categories that have been proposed in recent years, discrete, easily identifiable phonetic reflexes of the category Pr are not always to be found. Instead, the presence of Pr must be inferred indirectly from the effects that it exerts on other categories and the syntactic patterns it induces. Once the category has been recognized, however, and its properties understood, a great many observations, some of them very well known yet never adequately explained, begin to fall into place. The result is, I believe, the beginning of a unified approach to predication, one that gives explicit recognition to the central role it plays in both syntax and semantics.

NOTES

- 1 An alternative proposed by Williams (1983a) is that adjacent phrases that stand in the predication relation differ only in terms of indexing: I found [John]<sub>i</sub> [a good psychotherapist]<sub>i</sub> (for the (a) interpretation of (5)) vs. I found [John]<sub>i</sub> [a good psychotherapist] (for the (b) interpretation of (5)). I do not deal with Williams's approach directly here other than to note that many of the phenomena described in this chapter, e.g. unlike category conjunction (section 1.4), VP conjunction (section 2.1), quantifier floating (section 3.1.1), VP fronting (section 3.1.2), and others, simply cannot be described adequately without assuming a SC constituent.
- 2 Categories partially similar to Pr that have been proposed recently in the literature include the "VP shell" (Larson 1988), Voice (Kratzer 1993), v (Chomsky 1995b), and Tr (Collins 1997). Unlike VP shell and v, Pr is required for predication and is therefore present regardless of how many arguments the verb requires. (See section 2.2 for discussion.) Note also that of these categories Pr is the only one that takes as its complement maximal projections of any lexical category. Hence it is the only one capable of unifying predication in both MCs and SCs.
- 3 This would then make it possible, as suggested by Chomsky (1981), Rothstein (1983), Chierchia (1989), and Bowers (1993a), to derive the Extended Projection Principle (EPP), which requires that clauses have subjects, from the more basic principle that functions must be saturated. Note, however, that the EPP, as refined in more recent

syntactic work, refers to an entirely different parameter, namely, whether or not a language requires that [Spec, T] be filled.

To account for the semantics of true expletives (e.g. the *it*-subject of the verb *seem*), I assume, following Chierchia (1989), that there is a type-shifting operation of "expletivization" E whose logical type is:  $p \rightarrow \pi$ , i.e., it turns propositions into properties. Applied to the proposition **seem**(p), E yields a property E(**seem**(p)) that predicated of an arbitrarily chosen funny object (indicated by " $\perp$ ") yields the proposition **seem**(p); applied to anything other than  $\perp$ , E is undefined. Chierchia shows that such a type-shifting operation is independently motivated in a number of different ways. This makes it possible to retain the assumption that clausal structure universally involves semantic predication, while at the same time avoiding an analysis such as that proposed in Williams (1983b), in which verbs such as *seem* are treated as adverbs semantically.

- 4 Another possibility, proposed independently by Baker (1997a) and Eide and Åfarli (1997), is to treat the copula *be* as a lexical realization of Pr itself. Lack of space precludes a thorough discussion of the problems with this proposal, but note, for example, that it would make it difficult to account for the difference in meaning between pairs such as *I made John a good teacher*/*I made John be a good teacher*. See also Rothstein (1997) for arguments that the copula makes an identifiable semantic contribution to the meaning of

- sentences, hence cannot be merely a semantically empty phonetic realization of a category such as T or Pr.
- 5 Notice, incidentally, that this analysis would also make it possible to distinguish structurally between unaccusative and unergative Adjectives, the former having an argument in [Spec, A], the latter an argument in [Spec, Pr]. It has been argued that such a distinction exists in both Italian (Cinque 1990a) and German (Moltmann 1989).
  - 6 In theories that assume a VP shell or "light" verb *v*, it is usually assumed that unergatives derive uniformly from underlying transitives with an incorporated "cognate object" and an underlying light verb in upper VP (Hale and Keyser 1993). However, the evidence for such derivations is weak at best, in my view. See Rubin (1990), for an interesting use of these structures to explain the properties of Italian experiencer predicates such as *preoccupare* and *piacere*. See also Bowers (1998) for a radically derivational approach to the problem of unergative versus unaccusative predicates, as well as to experiencer predicates in Italian and English.
  - 7 An apparent problem for the claim that *as* is a phonetic realization of Pr is the following example, pointed out to me by Mark Baltin: *I see him as quickly taking advantage of whatever opportunities come his way*. If *quickly* is, as I have argued, a Pr-licensed adverb and if the phrase *taking advantage of . . .* is a VP, then the order should apparently be: *\*I see him quickly as taking advantage . . .* Note, however, that the gerundive or participial complement in this example must evidently be a full TP (or perhaps DP), as shown by the presence of the perfect auxiliary in an example such as the following: *I see him as having quickly taken advantage of the situation*. Since T selects PrP, the adverb *quickly* can simply be analyzed as a Pr'-adjunct within the TP (or DP) complement of Pr. Alternatively, it might be the case that *as* in these examples is a complementizer rather than a realization of Pr. Further investigation of the multifarious uses of *as* is clearly needed.
  - 8 Furthermore, they show that the former occurs systematically with predicate nominals, suggesting that its function is to case mark predicate nominals.
  - 9 The only way to do so would be by means of Gapping. For arguments in favor of such an approach, see Jackendoff (1990a); for arguments against, see Larson (1990) and Bowers (1993a).
  - 10 I use the term "license" here in a loose fashion merely to indicate that there is a relationship of some sort between heads and the adverb classes associated with them. The traditional term "modifier" might well be more appropriate, in which case we could refer to "V-modifiers," "Pr-modifiers," etc.
  - 11 It is argued in Bowers (1993a) that the latter assumption is untenable.
  - 12 As noted in Bowers (1993a), an adverb may also belong to more than one class, in which case we expect to find subtle meaning differences depending on which position it occurs in.
  - 13 Adverbial modifiers of adjectives and prepositions, in contrast, never seem to be able to occur to the right of the head:
    - (i) a. John is (so) extremely angry (\*so) extremely) at Mary.
    - b. Mary shot the ball right through (\*right) the net.

Assuming a structure for (ia) of the sort discussed in section 1.3:

- (ii) John is [<sub>PrP</sub> t [<sub>Pr</sub> Pr [<sub>DegP</sub> so [<sub>QP</sub> extremely [<sub>AP</sub> angry at Mary]]]]]

it is immediately apparent that adjunction of A to Pr would produce the ungrammatical examples indicated above. A similar argument can be constructed for PP, assuming that *right* is a degree modifier of prepositions (Emonds 1976). It would thus appear that A and P, in contrast to V and N, never raise to Pr. Hence the A-features and P-features of Pr must be weak in English.

- 14 Apparent violations of these ordering restrictions will arise if there are processes that move objects rightward, as in the case of so-called Heavy-NP Shift (Bowers 1997a): *John spoke perfectly to Mary all the languages that he had learned at his mother's knee*, etc.
- 15 Under standard Minimalist assumptions, movement is only possible for the purpose of checking morphological features such as Case and Agreement (Last Resort), which can in turn only be checked in [Spec, Agr]. It follows that if RO exists, then either Agr<sub>o</sub>P must be located between PrP and VP (the "Split VP Hypothesis") or else Case Theory must be revised in such a way as to force raising of the complement subject directly into [Spec, V]. The first possibility has been explored by Koizumi (1993, 1995), Bowers (1993b), and Lasnik (1995a, 1995b, 1995c), while the second is proposed in Bowers (1997a, 1998). The Split VP Hypothesis is apparently inconsistent with the literature on Object Shift in Icelandic, which has been taken to show that object agreement features must be checked

in a position *above* whatever category it is that contains the internal subject (in our case, PrP). RO, on the other hand, for which we have amassed a considerable amount of evidence, must clearly raise subjects to a position *below* the Verb in its raised position adjoined to Pr. Hence it would appear that RO and Object Shift cannot both involve movement to Agr<sub>o</sub>P, or its equivalent.

- 16 For arguments against Sportiche (1988)'s assumption that the floated quantifier originates inside the moved DP, see Bowers (1993a), section 3.4.1, and Baltin (1995). Note that if the floated quantifier were treated as a Pr'/I'-adjunct, like the adverbs discussed earlier, it would not c-command the trace of the moved NP, making it difficult to assign the scope of the quantifier correctly without further movement. Not only is there no evidence for the required (obligatory) movement but it would also violate standard movement constraints.
- 17 A potential problem with treating directional and dative PP-complements as control constructions is that the direct object can be omitted with certain verbs that take dative complements, e.g. *he gave to the United Way*, thus apparently violating Bach's generalization that controllers do not delete. It is perfectly possible, however, that the object in such constructions is not deleted, but rather that there is an empty category such as *pro* in object position. In the case of agentless passives such as *the boat was sunk*, there is considerable support for the view that there is an "understood" agent in the syntax.
- 18 A number of potential problems with Huang's analysis have been

pointed out by Heycock (1995). One problem that is immediately obviated by the analysis proposed here is the fact that fronted predicate DPs behave exactly like other predicative complements with respect to reconstruction possibilities. Heycock assumes that such complements have a structure of the following sort:

- (i) His parents consider [<sub>DP</sub> Sally  
[<sub>DP</sub> Bill's best friend]]

from which it follows, contrary to fact, that a fronted predicate DP should have exactly the same reconstruction possibilities as a fronted argument. Under the analysis proposed here, however, the structure of (i) is exactly parallel to the structure of other predicative complements:

- (ii) His parents consider Sally [<sub>PrP</sub> t  
Pr [<sub>DP</sub> Bill's best friend]]

Since it is PrP, by hypothesis, that is fronted, it is correctly predicted that fronted predicate DPs should have exactly the same coreference possibilities as other predicative complements.

As for the other examples that Heycock cites, there are additional data that blunt considerably her criticisms of Huang's analysis. For example, she notes that there are grammatical cases of coreference that apparently should be ruled out by Huang's analysis:

- (iii) a. How pleased with the pictures Pollock<sub>i</sub> painted in his youth do you think he<sub>i</sub> really was?  
b. How afraid of the people Gore<sub>i</sub> insulted years ago do you think he<sub>i</sub> is now?

Note, however, that the predictions made by Huang's analysis do hold

for topicalized predicate APs (as opposed to *wh*-APs), as the following contrasts show:

- (iv) a. \*Very pleased with pictures Clemente<sub>i</sub> has painted recently I don't consider him<sub>i</sub>.  
b. Very pleased with pictures he<sub>i</sub> has painted recently I don't consider Clemente<sub>i</sub>.  
c. How pleased with pictures Clemente<sub>i</sub> has painted recently do you consider him<sub>i</sub>?  
(v) a. \*Afraid of people Gore<sub>i</sub> insults I don't consider him<sub>i</sub>.  
b. Afraid of people he<sub>i</sub> insults I don't consider Gore<sub>i</sub>.  
c. How afraid of people Gore<sub>i</sub> insults do you consider him<sub>i</sub>?

Though more work is clearly needed, these data suggest that topicalization of SC complements involves movement of the whole PrP, including the trace of a raised subject, whereas the corresponding *wh*-questions, in contrast, only involve movement of the predicate AP. Assuming Lebeaux (1988, 1990, 1991)'s analysis of adjuncts, the grammaticality of the (c) sentences in (iv)–(v) is then explained by the fact that there is a derivation in which the relative clause adjunct is only added after the phrase in question has been moved out of the c-command domain of the pronoun. There is, however, no comparable way of rescuing the (a) sentences, because the topicalized PrP contains a trace of raised pronominal subject of the predicate AP.

Another potential problem (noted also by Barss 1986), is that an R-expression inside a moved predicate is apparently incorrectly predicted

to be free to corefer with the subject of any higher clause. This, however, seems to be true of *both* topicalized PrPs and *wh*-APs:

- (vi) a. \*How afraid of Margaret<sub>i</sub> do you think she<sub>i</sub> expects John to be?
- b. \*Afraid of Margaret<sub>i</sub> I don't think she<sub>i</sub> considers John.

suggesting that reconstruction of both topicalized PrPs and *wh*-APs is necessary, contrary to what was assumed in the previous paragraph. How to resolve this apparent

contradiction is a question I leave to future research.

- 19 See Bailyn (1995a, 1995b, 1995c) and Bailyn and Rubin (1991) for work showing that structures identical to these are needed in so-called "free word order" languages such as Russian.
- 20 For another case in which SC complements may differ only in whether they involve Raising or Control, see the analysis of individual-level and stage-level predicates, respectively, in Bowers (1993b).