REVIEW ARTICLE


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1. INTRODUCTION. This book consists of the chapters 'developed from material presented at a conference held at The University of Chicago in July of 1985 ... to provide a forum for the exchange of ideas concerning the role, if any, of discontinuous constituency in grammar' (xi). The chapters are: Introduction (by Geoffrey J. Huck and Almerindo E. Ojeda), Degree complements (by Mark R. Baltin), Phrase structure, grammatical relations, and discontinuous constituents (by Pauline Jacobson), Redoing reduplication: A preliminary sketch (by Yoshihisa Kitagawa), Analyzing extraposition in a tree adjoining grammar (by Anthony S. Kroch and Aravind K. Joshi), Some extensions of the autolexical approach to structural mismatches (by Steven G. Lapointe), Some additional evidence for discontinuity (by James D. McCawley), Boolean properties in the analysis of gapping (by Richard T. Oehrle), Discontinuous constituents in a free word order language (by William O'Grady), Discontinuity, multidominance, and unbounded dependency in Generalized Phrase Structure Grammar: Some preliminaries (by Almerindo E. Ojeda), Discontinuity in autolexical and autosemantic syntax (by Jerrold M. Sadock), Grammatical hierarchy and linear precedence (by Ivan A. Sag), Constituency and Luiseño argument structure (by Susan Steele), Configurational variation in English: A study of extraposition and related matters (by Susan U. Stucky), Linear precedence in discontinuous constituents: Complex fronting in German (by Hans Uszkoreit), and Extraposition from NP as anaphora (by Kent Wittenburg).

In the introduction, Huck and Ojeda give a concise summary of each of the papers, so I will refrain from repeating the same thing. Furthermore, rather than discussing the papers one by one (which will require much

* I would like to thank Carol Rinnert and Michael Lazarin for suggesting improvements in this review article. Needless to say, responsibility for the present contents is entirely my own.
more space than is given here), I will consider major arguments offered by McCawley for discontinuous constituent structure.

In section 2, I will outline McCawley’s arguments for discontinuous constituent structure and Baltin’s counterarguments with respect to extraposition. The point of contention is whether transformations are permitted to yield discontinuous constituent structure or not. Section 2 provides a critical examination of Reinhart’s c-command constraint on pronouns upon which some of McCawley’s arguments crucially rely. It is shown that this constraint is empirically inadequate, as noted by several linguists. In section 3, an alternative principle is advanced. It is demonstrated that the proposed principle can account for the relevant range of data without recourse to extrinsic rule ordering or constraints on cyclic outputs. Section 4 consists of a reexamination of McCawley’s arguments for discontinuous constituency and tentative conclusions.

2. McCawley vs. Baltin on Discontinuous Constituency. McCawley 1982, 1987 argues that transformations should be allowed to yield discontinuous constituent structure on the basis of a variety of facts, including the following: 1

(1) John talked, of course, about politics, and Mary did too.
(2) John sold Mary, who had offered him $600 an ounce, a pound of gold, but Arthur refused to.
(3) *What kind of clothing did a man enter who was wearing?
(4) Tom talked, and is sure that everyone else talked, about politics, but of course you and I didn’t.
(5) a. *Who does Mary buy, and Bill know a man who sells, pictures of?
   b. Who does Mary buy, and Bill sell, pictures of?
(6) Historical and scientific knowledge are/*is different in nature.

1 Examples 1–5 and 6–9 are from McCawley 1982 and 1987, respectively, indicating his grammaticality judgements. (According to McCawley, the impossibility of extraction in 3 was noted by Ross 1966 and his argument about examples 5a, b is based on Wexler and Culicover’s 1980 argument and the argument about 7a is Levine’s 1984, 1985.) Throughout this review article, the grammaticality judgements in the examples are given by each of the authors’ mentioned there. In examples 7–9, the italicized pronoun and NP are meant to be anaphorically related and the asterisk indicates that these examples are ungrammatical with the intended reading. The same holds for other examples below.
(7) *I know that she said, and I happen to agree, that
   a. Mary
   b. Mary's brother needs a new car.
(8) *His recantation has just appeared of Chomsky's 1973 theory.
(9) a. On Rosa's orders, I tickled her.
    b. *With Rosa's feather, I tickled her.
More specifically, he proposes a structure such as 10 for example 1:

(10)
\[
\begin{array}{c}
S \\
\text{NP} \\
\text{John} \\
\text{V}' \\
\text{talked} \\
\text{of course} \\
\text{about politics} \\
\end{array}
\]

This structure, he argues, provides a natural account of the fact that the interpretation of the zero V' in 1 is *talked about politics* rather than *talked, of course, about politics*, or *talked*. A similar analysis holds for 2.

Example 3 and examples 4–6 concern Relative Clause Extrapolation and Right Node Raising (RNR), respectively. If these rules change constituent order without changing constituent structure and yield discontinuous structures, McCawley argues, his approach can account for why the extrapolated relative clause disallows extraction from it in 3, why the interpretation of the zero V' in 4 is *talked about politics*, why 5a, unlike 5b, is ungrammatical (since it involves extraction from a relative clause), and why the surface subject in 6 requires plural number agreement.

Examples 7, 8, and 9 concern the constraint that a pronoun cannot c-command its antecedent (Reinhart 1976, 1983). If RNR and P-extrapolation yield discontinuous structures, he argues, examples 7 and 8 can be accounted for by the c-command constraint. Similarly, if instrumental phrases are V-modifiers, as shown in 11, so his argument goes, the differ-

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2 Reinhart 1983 states the anaphora condition as in (i), defining c-\text{COMMAND} as in (ii):

(i) A given NP must be interpreted as non-coreferential with any distinct non-pronoun in its c-command domain (p. 43).

(ii) Node A c\text{-}\text{COMMAND}s node B iff the branching node \(\alpha_1\) most immediately dominating A either dominates B or is immediately dominated by a node \(\alpha_2\) which dominates B, and \(\alpha_2\) is of the same category type as \(\alpha_1\) (p. 23).
ence in grammaticality between 9a and 9b can be accounted for by redefining the notion C-COMMAND in such a way that a node will c-command those nodes dominated by its mother and also nodes dominated by modifiers of the bounding node:

(11) a. 

```
|--- S |
|     |
|     |
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on Rosa's orders

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|--- NP |
|     |
|     |
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I tickled

```
|--- NP |
|     |
|     |
```

er

b. 

```
|--- NP |
|     |
|     |
```

with Rosa's feather

```
|--- NP |
|     |
|     |
```

tickled

```
|--- v |
|     |
|     |
```

her

Given this redefinition of C-COMMAND, he argues, her c-commands Rosa in 11b, violating the c-command constraint, though her does not c-command Rosa in 11a; hence the difference in grammaticality between 9a and 9b, as predicted by the c-command constraint. On the basis of these facts, McCawley claims that there are transformations which change word order without causing any change in constituent structure.

Contrary to McCawley's claim, Baltin 1984, 1987 maintains that transformations should not yield discontinuous constituent structure. In particular, he argues that extraposition rules do not create discontinuous constituents, suggesting that the impossibility of extraction from extraposed relatives can be accounted for by the Condition on Extraction Domains (CED) (Huang 1982), as in 12:

(12) The Condition on Extraction Domains

Extraction is possible only from phrases that are properly governed.

Since extraposed relatives are not properly governed, so his argument goes, extraction from them is impossible, as in 3. Furthermore, he gives the following examples in support of his approach:

(13) a. Who did you see a picture of ____ yesterday?

b. *Who did you see a picture yesterday of ____ ?

If a picture and the extraposed PP form a discontinuous constituent, he argues, the CED cannot predict the ungrammaticality of 13b. If, on the
other hand, *a picture* and the extraposed PP do not form a discontinuous constituent, he maintains, the extraposed PP is not properly governed and the ungrammaticality of 13b, as opposed to the grammaticality of 13a, is predicted by the CED.

Although he does not permit transformations to create discontinuous constituents, he permits discontinuous base phrase markers. In particular, he suggests that dual representations such as 14a, b are required for degree-word complements:

\begin{center}
(14) \\
\begin{tikzpicture}[scale=0.8]
    \node (S) at (0,0) {S'};
    \node (S1) at (0,-1) {S};
    \node (VP) at (1.5,-1.5) {VP};
    \node (V) at (1.5,-2) {V};
    \node (AP) at (1.5,-2.5) {AP};
    \node (QP) at (2,-3) {QP};
    \node (Q) at (2,-3.5) {Q};
    \node (A) at (2,-4) {A};
    \draw[->] (S) -- (S1);
    \draw[->] (S1) -- (VP);
    \draw[->] (VP) -- (V);
    \draw[->] (V) -- (AP);
    \draw[->] (AP) -- (QP);
    \draw[->] (QP) -- (Q);
    \draw[->] (Q) -- (A);
    \draw[->] (A) -- (S');
\end{tikzpicture}
\end{center}

According to him, the representation 14a, a projection of thematic structure, governs the application of transformations, whereas 14b is the representation to which the binding theory applies. In 14a, he argues, the degree complement is properly governed by the degree word Q and hence extraction is possible in accordance with the CED, as in 15:

(15) Who was he too angry to visit?

The representation 14b, on the other hand, accounts for the difference in grammaticality between the following paired examples:

(16) a. *They were too partisan for each other to be convinced.

b. They were too partisan to convince each other.

If 16a, b are assigned structures such as 14b and if binding requires c-command, he argues, the grammaticality contrast in 16 can be accounted for by saying that the anaphor in 16a is not c-commanded by the matrix subject, whereas the anaphor in 16b is c-commanded by the complement subject, PRO.

The point of contention between McCawley and Baltin is whether transformations are permitted to yield discontinuous constituent structure or not. As seen above, McCawley provides a variety of facts in support of the claim that they are, whereas Baltin argues against such a claim on the basis of his analysis of extraposition. As seen above, both McCawley’s and Baltin’s approaches can account for the ungrammaticality of 3, but McCawley’s approach makes it impossible to account for the ungrammaticality of 13b by means of the CED, as pointed out by Baltin.
McCawley, on the other hand, maintains that Baltin’s approach makes it impossible to predict the ungrammaticality of 8 in terms of the c-command constraint, as shown by the following structures:

(17)  

\[
\text{S} \quad \text{S} \quad \text{P} \\
\text{NP} \quad \text{V} \quad \text{V} \\
\text{his} \quad \text{appeared} \\
\text{recantation} \\
\text{of Chomsky’s 1973 theory}
\]

In 17a, the pronoun *his* does not c-command its antecedent, and hence the c-command constraint cannot predict the deviance of 8, so his argument goes, whereas in 17b, *his* c-commands its antecedent, violating the c-command constraint. McCawley’s account of example 8 (and examples 7 and 9 as well) depends crucially on the validity of the c-command constraint on pronouns. Therefore, if this constraint turns out to be empirically inadequate, his arguments on the basis of the constraint will also be untenable. In the following section, I will consider this constraint, showing that it is not empirically adequate.

3. The c-command constraint on pronouns. Criticizing the precede-and-command approach to pronouns (Langacker 1969),³ Reinhart 1976, 1983 proposes an alternative approach in terms of the c-command constraint on pronouns. However, there are a number of facts incom-

³ Langacker 1969 states the constraint on pronominalization as in (i), defining command as in (ii):

( i ) \( \text{NP}^a \) may be used to pronominalize \( \text{NP}^p \) unless (1) \( \text{NP}^p \) precedes \( \text{NP}^a \); and (2) either (a) \( \text{NP}^p \) commands \( \text{NP}^a \), or (b) \( \text{NP}^a \) and \( \text{NP}^p \) are elements of separate conjoined structures (p. 171).

( ii ) A node A “commands” another node B if (1) neither A nor B dominates the other; and (2) the S-node that most immediately dominates A also dominates B (p. 167).
compatible with this constraint, as pointed out by several linguists, including Solan 1978, 1983, Carden 1986, and Hasegawa 1983. Let us begin by considering the following examples:  

(18) a. *I spoke about him with John’s wife.
   b. I spoke with John’s wife about him.
(19) a. Mary showed John’s picture to him.
   b. *Mary spoke to him in Ben’s office.
(20) a. *I sent his book to George.
   b. I sent George to his home.
Solan (1983: 66) points out that the c-command constraint cannot rule out examples like 18a since the pronoun in the PP does not c-command its antecedent. This problem is also noted by Carden (1986: 329-30), who goes on to say that ‘if dative PPs do not count as bounding nodes, as suggested by Reinhart (1981: 631f),’ the pronoun him c-commands John in 19a and Ben in 19b and hence the c-command constraint will permit neither 19a nor 19b (cf. Reinhart 1983: 176). See also Hasegawa 1983 for similar arguments. Solan, Carden, and Hasegawa note that contrary to Reinhart’s claim, linear order is relevant in examples like 18-20.

Furthermore, the c-command constraint is also inadequate with respect to the following examples:

(21) a. *How fond of Ben’s wife do you think that he is?
   b. *It was George’s books that we sent him.
(22) a. *Near John, he saw a snake.
   b. *It was near John that he saw the snake.
(23) a. *Whether John was here he doesn’t like to admit.
   b. *How angry that John came is he?
   c. *How angry that John came did that make him?
In any version of the definition of C-COMMAND, Hasegawa argues, the pronoun does not c-command its antecedent at S-structure in 21a, b, and hence the c-command constraint permits these ungrammatical examples. According to him, these examples require that noncoreferential relations be determined before movement rules such as wh-movement. Carden gives some examples, including 22b, as evidence that a coreference rule applies to abstract structures distinct from surface structures. McCawley

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4 Examples 18, 19, and 20 are from Solan 1983, Carden 1986, and Hasegawa 1983, respectively.
5 Examples 21, 22, and 23 are from Hasegawa 1983, Carden 1986, and Solan 1983, respectively.
1984 also advances a condition on pronoun-antecedent relations in cyclic outputs as well as conditions on surface structures. See also Solan 1983 for relevant discussion.

We can add examples like the following as further evidence against the c-command constraint: 6

(24)  a. *It bothered her that Rosa failed.
      b. *What bothered her was that Rosa failed.
      c. *Mary said that a woman appeared before him who threatened to kill the judge.

To account for the deviance of 24a in terms of the c-command constraint, it is necessary to assign it a structure in which the pronoun c-commands its antecedent (see Reinhart 1983: 49). 7 Next, compare 24a with 24b. It is reasonable to hold that 24a and 24b are one and the same phenomenon and this is confirmed by the grammaticality of both 25a and 25b below:

(25)  a. It bothered Rosa that she failed.
      b. What bothered Rosa was that she failed.

It should be noted that in 24b, her does not c-command Rosa in any version of the definition of C-COMMAND. Thus, Reinhart's approach in terms of the c-command constraint fails to account for the ungrammaticality of 24a and 24b in a unified way, thereby missing this generalization concerning them.

Let us consider next 24c. To account for its ungrammaticality in terms of the c-command constraint, one will have to assign it a structure in which him c-commands the judge, but such a structure is incompatible with Baltin's 1984 suggestion that PPs and relatives extraposed from subject position are adjoined to S. Furthermore, if one assigns it a structure containing a discontinuous constituent along the lines suggested by McCawley, the pronoun does not c-command its antecedent in that structure and hence one cannot use the c-command constraint to account for the ungrammaticality of 24c.

To summarize, we have seen that a variety of examples such as those in 18 through 24 argue against the c-command constraint, which suggests

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6 Examples 24a and 24c are from Reinhart 1983 and Lakoff 1968, respectively. Examples similar to 24b and 25b below are discussed by Higgins (1973: 169) and according to him, the ungrammaticality of examples like 24b was noted by Postal 1971.

7 It should be noted that such a structure is incompatible with Stowell's (1981: 397) suggestion that postverbal clauses in examples like 24a are not properly governed. See also Baltin (1984: 161) and Reinhart (1983: 57 fn. 8).
that this constraint should be replaced by a more adequate principle or approach. In the next section, I will advance an alternative approach without recourse to the c-command constraint.

4. The Prominence Principle. Criticizing Reinhart's approach, Carden 1986 notes that there are cases requiring that a coreference rule apply to abstract structures rather than surface structures. McCawley 1984 also proposes a condition on pronoun-antecedent relations in cyclic outputs as well as surface conditions. Hasegawa 1983 explicitly maintains that a distinction should be made between two rules of pronoun interpretation, PI1 and PI2, and that PI1, ordered before movement rules, applies to examples 26 in which movement rules do not affect the possibilities for anaphoric relations, whereas PI2, ordered after movement rules, applies to examples 27 in which movement rules alter the anaphoric possibilities:

(26) a. *You think that he is fond of Ben's wife.
   b. (=21a) *How fond of Ben's wife do you think that he is?
   c. *We sent him George's books.
   d. (=21b) *It was George's books that we sent him.

(27) a. *You think she liked some of the boys Betty visited.
   b. Which of the boys Betty visited do you think she liked best?
   c. *Mary insulted him in John's apartment.
   d. In John's apartment, Mary insulted him.

To account for these examples as well as other relevant examples, I propose the following principle, defining Prominence as in 29: 8

8 I have borrowed the term Prominence from Lakoff 1968, who uses the term in the following sense: 'Preposed adverbs, topics and clefted elements are all elements that are being focussed upon by the speaker, or given special prominence' (14). He uses the term Prominent in stating output conditions on pronoun-antecedent relations (14). Furthermore, Reinhart 1983 writes that although 'the terms Prominence or Primacy have not been rigorously defined', 'it has been supposed (e.g. Langacker 1969, and Ross 1967) that the antecedent has primacy over a (coreferential) pronoun' (26). 'Following Keenan 1974', she continues, 'we may describe an expression a as having prominence over an expression b, if the assignment of reference to a is independent of the reference of b, but the assignment of reference to b may depend on that of a' (26). According to her, 'if one NP is in the domain of the other, the 'prominent', or the referentially independent, node should be the D-head node' (42). I use the term Prominent in the sense defined as in 29. Furthermore, I use the term Complement in the sense of X-theory (Chomsky 1970, 1981, 1986, Jackendoff 1977) (cf. McCawley 1984: 229). For arguments for the relevance of a clausemate condition, see McCawley 1984, Hasegawa 1983, Carden 1986, and references cited there.
The Prominence Principle
A pronoun cannot be more prominent than its antecedent.

(29) \( \alpha \) is more prominent than \( \beta \)
(a) if \( \alpha \) c-commands \( \beta \) in its original place or \( \alpha \) is a nominative NP and \( \beta \) is originally (a part of) a complement or a clausemate of \( \alpha \). (Cf. Lakoff 1968, McCawley 1984)
(b) i. if \( \alpha \) asymmetrically commands \( \beta \) in its original place, or
ii. if \( \alpha \) precedes \( \beta \). (Cf. Langacker 1969)

This definition of PROMINENCE should be interpreted in such a way that if \( \alpha \) is more prominent than \( \beta \) by 29a, this prominence relation is not affected by 29b. In other words, there is a hierarchy here. But there is no hierarchical relation between 29bi and 29bii. Thus, if \( \alpha \) is more prominent than \( \beta \) by 29bi, this prominence relation is nullified if \( \beta \) is more prominent than \( \alpha \) by 29bii and vice versa.

The Prominence Principle applies after movement rules, at S-structure. To see how it works, let us consider examples such as the following:

(30) a. His apartment, Bill always talks to Mary about t.
b. *Bill's apartment, he always talks to Mary about t.
c. It was his dog that John bit t.
d. *It was John's dog that he bit t.
e. *It's John who he admires t the most.
f. *He loves John's mother.
g. *What he denied t is that John is a crook.
h. It was the diamond that John had bought that he kept t in the safe.
i. *It was John's diamond that he kept t in the safe.
j. *How obnoxious to Ben's friends he is t.
k. How obnoxious to his friends Ben is t.

In 30a, Bill c-commands his in its original place and the pronoun his is a part of the complement in the following sense:

(31) \( \alpha \) is a part of a complement if \( \alpha \) is c-commanded by the head of the complement.

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9 Examples 30a–d, 30e–h, and 30j, k are from Lakoff 1968, McCawley 1987, and Reinhart 1983, respectively. According to Lakoff, the contrasts between 30a and 30b and between 30c and 30d were noted by Postal and Ross, respectively.
Hence Bill is more prominent than his by the definition 29a and this prominence relation is not affected by 29b, as mentioned above. Hence 30a is grammatical in accordance with the Prominence Principle. In 30b, the pronoun and its antecedent have changed places and it is predicted to be ungrammatical. The same account holds for 30c, d, e, f. In 30g, the that-clause is the complement of the verb deny, and John is a part of the complement in the sense of 31. According to Chomsky 1981, 1986, the head of a that-clause is the complementizer that, which ccommands all the constituents in the clause. Since John is a part of the complement and he ccommands John in its original place according to the extraction analysis of pseudo-clefts (cf. e.g. Chomsky 1970), the pronoun is more prominent than its antecedent, violating the Prominence Principle.

Let us compare next 30h with 30i. The latter is ungrammatical for the same reason that 30d is. With respect to 30i, I hold, essentially following McCawley 1987, that modifiers appear in the context [XP XP ____]. For instance, restrictive relatives have structures of the form [NP NP CP] in which CP modifies its head NP (see e.g. Ross 1967, Reed 1975), as distinct from NP complement constructions of the form [NP ... N CP]. In 30h, therefore, John, in the relative clause of the form [NP NP CP], is not ccommanded by the head N, diamond. This means that John is not a part of a complement in the sense of 31, and the definition 29a is not applicable, but 29bi, bii apply. According to the extraction analysis of clefts (see fn. 10), he asymmetrically commands John in its original place and is more prominent than John. This prominence relation, however, is nullified (since John precedes and is more prominent than he), and hence neither he nor John is more prominent than the other. The Prominence Principle predicts the grammaticality of 30h. The same account holds

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10 I adopt the extraction analysis of clefts, following Bach and Horn 1976, Bresnan 1977, and others. If, on the other hand, one adopts Chomsky's 1977 wh-movement analysis, clefts are derived from structures of the form 'it is [S TOP S]' in terms of wh-movement. This wh-movement analysis, however, is problematic, as noted elsewhere (Iwakura 1980). The point here is that even if one adopts the wh-movement analysis, the proposed approach can account for 30c-e if one can only determine, by associating the focus constituent with the trace (left by wh-movement), that the focus constituent is (a part of) a complement. For instance, in 30c, John (a nominative NP) and his (a part of the complement) are subject to 29a. The same is true in 30d, e. 11 If, on the other hand, one assumes that the that-clause is base-generated in situ (cf. e.g. Higgins 1973), one need only determine that the that-clause is a complement. Then he (a nominative NP) and John (a part of the complement) are subject to 29a.
for Hasegawa's example 27b.

Let us turn next to 30j. The pronoun c-commands Ben in its original place and Ben is a part of the complement. Hence, the pronoun is more prominent than its antecedent, violating the Prominence Principle. The opposite is the case in 30k; hence the grammaticality contrast between them. Similarly, the proposed analysis can account for examples 21–23 and 26.

Let us consider next the following examples:12

(32) a. *For Zelda, she says that Zalman would give his life.
   b. For her, Zelda says that Zalman would give his life.
   c. *In John's apartment, he smokes pot.
   d. In his apartment, John smokes pot.
   e. In Mary's apartment, a thief assaulted her.
   f. *In her apartment, a thief assaulted Mary.
   g. *In Mary's apartment, she was assaulted by a thief.
   h. In her apartment, Mary was assaulted by a thief.
   i. Bill's apartment, Mary always talks to him about t.
   j. *His apartment, Mary always talks to Bill about t.

In 32a, the preposed PP is originally within the that-clause and hence Zelda is a part of the complement in the sense of 31. The pronoun she c-commands Zelda in its original place and is more prominent than Zelda. The pronoun and Zelda have changed places in 32b. The Prominence Principle predicts the grammaticality contrast between 32a and 32b. In 32c, he c-commands John in its original place and John is originally a clausemate of the pronoun. Thus he is more prominent than John. The opposite is the case in 32d; hence the grammaticality contrast between 32c and 32d. Let us next compare 32e, f with 32g, h. In 32e, the preposed PP is base-generated outside the VP containing her (Hasegawa 1983) and her does not c-command Mary in its original place (cf. Reinhart 1983, McCawley 1987). The definition 29a is not applicable but 29bii applies. Mary precedes and is more prominent than her in 32e and the opposite is the case in 32f. Hence 32e is grammatical and 32f is not. The same is true in 27c, d. In 32g, h, the grammaticality patterns are reversed. This is due to the fact that she in 32g and Mary in 32h are nominative NPs. According to 29a, the pronoun is more prominent than its antecedent in 32g and the reverse is the case in 32h. Thus, the

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12 Examples 32a, b and 32c–j are from Reinhart 1983 and Lakoff 1968, respectively.
grammatical contrasts between 32e and 32g and between 32f and 32h are predicted by the Prominence Principle. Turning next to 32i, we see that him does not c-command Bill in its original place because of the presence of the node PP. Hence Bill is more prominent than him by 29bii and the reverse is the case in 32j. The same account holds for examples 18–20.

Let us proceed to consider examples such as the following13 which fall under the PRECEDE AND COMMAND condition (Langacker 1969):

(33) a. That he was unpopular didn’t disturb Oscar.
    b. That Oscar was unpopular didn’t disturb him.
    c. The woman who rejected him hates Peter.
    d. The woman who rejected Peter hates him.
    e. After he woke up, John Adams was hungry.
    f. After John Adams woke up, he was hungry.

In 33a, he precedes and is more prominent than Oscar but this prominence relation is nullified since Oscar asymmetrically commands and is more prominent than he. Thus, neither he nor Oscar is more prominent than the other, and 33a and 33b are both grammatical. The same account holds for 33c, d, e, f.

Finally, let us consider examples 24a–c and 25, repeated here as 34:

(34) a. (=24a) *It bothered her that Rosa failed.
    b. (=25a) It bothered Rosa that she failed.
    c. (=24b) *What t bothered her was that Rosa failed.
    d. (=25b) What t bothered Rosa was that she failed.
    e. (=24c) *Mary said that a woman t appeared before him who threatened to kill the judge.

If the that-clause is originally in the matrix subject position, as assumed by Rosenbaum 1967, the pronoun is more prominent than Rosa by 29bi. Furthermore, the pronoun precedes and is more prominent than Rosa. Thus her is twice as prominent as Rosa (regardless of where the that-clause is adjoined), violating the Prominence Principle. If, on the other hand, one assumes, following Emonds 1970, that the that-clause is base-generated in situ, her asymmetrically commands and precedes Rosa. In this case again, her is twice as prominent as Rosa. The opposite is the case in 34b. In 34c, if one assumes that the that-clause is originally in the place indicated by the trace (cf. e.g. Chomsky 1970), her is more promi-

13 Examples 33a, b, e, f and 33c, d are from Ross 1969 and Langacker 1969, respectively.
nent than *Rosa by 29bi. Furthermore, the pronoun precedes and is more prominent than *Rosa. If, on the other hand, one assumes that the *that-clause is base-generated in situ (cf. e.g. Higgins 1973b), the definition 29bi is not applicable. However, *her precedes and is more prominent than *Rosa by 29bii, violating the Prominence Principle. The reverse is the case in 34d. Thus the proposed approach can account for these examples in a unified way. Turning next to 34e, we see that *him not only asymmetrically commands *the judge in its original place but also precedes *the judge at S-structure; hence the pronoun has double prominence. The Prominence Principle predicts the deviance of 34e.

The discussion in this section has shown that the proposed approach in terms of the Prominence Principle can account for all the relevant examples without recourse to extrinsic rule ordering or constraints on cyclic outputs.

5. REEXAMINATION AND CONCLUSIONS. Having demonstrated how the proposed approach can account for anaphoric relations without using the c-command constraint, we are now in a position to reexamine McCawley’s arguments for discontinuous constituency. As mentioned above, McCawley gives examples 7–9 as evidence for discontinuous derived structures:

(35)(=7) *I know that she said, and I happen to agree, that
  \{ a. Mary \\
  b. Mary’s brother \} needs a new car.

(36)(=8) *His recantation has just appeared of Chomsky’s 1973 theory.

(37) a.(=9a) On Rosa’s orders, I tickled her.
    b.(=9b) *With Rosa’s feather, I tickled her.

In 35, the *that-clause is the complement of the verb *said (as well as the verb *agree), and *Mary is a part of the complement. According to the definition 29a, she is more prominent than *Mary, violating the Prominence Principle. In 36, *his c-commands Chomsky in its original place and Chomsky is a part of the complement of recantation, and hence the pronoun is more prominent than its antecedent, violating the Prominence Principle. The Prominence Principle can predict the ungrammaticality of 35 and 36, irrespective of what derived structures are assigned to them.

Let us consider next 37a, b. Example 37a is grammatical for the same reason that 32e above is. The crucial difference between 37a and 37b is
that the preposed PP in the latter is a V'-modifier (Reinhart 1983, McCawley 1987). To account for the deviance of 37b, we need only assume, following Reinhart 1983 and McCawley 1987, that a V'-modifier is c-commanded by a head V and hence by an object NP. Given this assumption, her in 37b c-commands Rosa in its original place and the definition 29a is applicable to them. According to 29a, the pronoun is more prominent than its antecedent, violating the Prominence Principle.

Let us consider examples 1, 2, 4 again, comparing them with 38:

(38) a. That is the girl who John is said to love t, although he actually does not.
   b. It was a pound of gold that John sold Mary t, although Arthur would not.

The interpretation of the zero V' is love the girl, not love in 38a and sold Mary a pound of gold, not sold Mary in 38b. If one adopts Emonds' 1976 approach to parentheticals, assuming that the moved constituents leave traces behind, example 1 will have a derived structure such as the following:

(39) John talked t, of course, about politics, and Mary did too. Just as one can give the correct interpretations to 38a, b in terms of trace, one can also give the correct interpretation to 39 in terms of trace. A similar analysis holds for examples 2 and 4 (cf. Emonds 1979).

What is left unexplained is the ungrammaticality of 3 and 5a. Baltin's approach can account for the ungrammaticality of 3 but cannot predict the difference in grammaticality between 5a and 5b.

As for example 6, McCawley assumes that it is derived by application of RNR. Another possibility is that it is generated by deletion of the first knowledge in 40a and has a derived structure such as 40b, as suggested by Banfield 1981:

(40) a. Historical knowledge and scientific knowledge are ...
   b. [NP [NP Historical φ] and [NP scientific knowledge]] are ...

Incidentally, compare 37b with the following example:

(i) *With Rosa's feather, she tickled Dan. (Reinhart 1983: 82)

Example 37b is much better than this example. In fact, my informants find 37b almost as acceptable as 37a.

Baltin's account of examples like 3 relies crucially on the validity of the CED. This condition, however, is not unproblematic. For instance, if Stowell is right (see fn. 7 above), postverbal clauses in examples like 24a are not properly governed and the CED predicts that extraction out of them is impossible, but this prediction is not empirically borne out (cf. e.g. Ross 1967).
If this analysis is adopted, if discontinuous structure is not required here.

In conclusion, we have seen that most of the relevant facts McCawley has offered as evidence for discontinuous constituency, when examined more closely, do not constitute real evidence. Although some relevant facts (such as the ungrammaticality of 5a, as opposed to the grammaticality of 5b) remain unexplained, it is far from clear whether McCawley's approach in terms of discontinuous derived structure provides the best way to account for them. The preceding discussion has shown that there is not sufficient evidence offered to justify the claim that syntactic transformations should be allowed to yield discontinuous constituent structure.

However, this is not to deny the significance of the present book on discontinuous constituency but rather it is hoped that further research will be continued along the lines suggested in this book to determine the role of discontinuous constituency in a theory of grammar and there is no doubt that the present book will provide a valuable and important basis for future research in this field.

REFERENCES


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16 One crucial difference between 6 and clear instances of RNR such as 4 is that knowledge in 6, unlike about politics in 4, cannot be set off by a comma (indicating comma intonation) (cf. Emonds 1976). Incidentally, it is difficult to see how McCawley's discontinuous structures for examples 1, 2, 4, 5, and 7 can represent the fact that the constituents in question (e.g. about politics in 4) are set off by commas (cf. Emonds 1976).


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