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tion classes of stems combining with them, the adjective-forming suffixes found, their word-class stems, the classes of nouns used in the presentation ([±count], [±concrete] etc.), the distribution of definition types ('abounding in', 'derived from', 'smeared with' etc.), and the distribution of gross semantic types (HAVING, PRODUCING, RELATED to etc.) Finally, there is a four-page bibliography containing mostly recent transformational-grammatical literature. Few of the various misprints seem too difficult to decipher.

It is hard to say succinctly what is accomplished by Ljung's study of English denominal adjectives. But it is hardly likely that any spectacular progress will ever be made in our understanding of the semantic aspects of language unless patient investigators continue to contribute detailed studies, such as this one, for various languages.

From deep to surface structure: an introduction to transformational syntax.

By MARINA K. BURT. New York: Harper & Row, 1971. Pp. xi, 256.

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It must be said at the outset that this book breaks new and important ground for linguistic pedagogy. Never before has there been an introductory book on transformational grammar that so uncompromisingly forces the reader to recognize that the rules of grammar are defined not on sentences, but on the structures that underlie them. Thus, opening the book at random, one finds almost nothing but tree diagrams, with bits and pieces of prose stuck in between (in a type which, unfortunately, is almost painfully small). Moreover, the text consists almost exclusively of questions and answers about what happens to the preceding diagram if such-and-such a rule is applied.

The purpose of the book is to reveal, IN DETAIL, how a selected fragment of English transformational syntax works, given a previously agreed-upon set of rules for generating deep structures (these are given as an appendix on pp. 243-4), and assuming that there is some coherent way of inserting lexical items into deep structures. In fact, except in a couple of cases, the transformational rules are also given; the bulk of the exposition is devoted simply to figuring out in what order these rules apply to generate grammatical English sentences. Although this may seem to be a limited goal—and, given current concepts of generative grammar, a quixotic one—nevertheless it does provide a very useful framework for learning how to evaluate and to construct linguistic arguments—something which no other text, to my knowledge, has ever done.

The book has four parts. Part I examines many of the transformations discussed in Chomsky's *Syntactic structures* (1957), but uses basically the framework of his later *Aspects* (1965). Part II deals with relative clauses, and Parts III and IV with complement structures. Besides the list of phrase-structure rules for generating deep structures, there are appendices: critical examples for the arguments given in the text to establish the order of transformations; abbreviations and notations; and finally the transformations themselves in their presumed order of

applicability. A brilliantly conceived design, this—but alas, rather badly flawed in its execution.

Mistakes and infelicities abound—not so much in the diagrams, which appear to have been lovingly and painstakingly drawn, but in the statement of the transformational rules and in the descriptions of how they work. In the hope of sparing some readers needless agony and of insuring a better subsequent edition, I will now point out a number that have come to my attention in the course of teaching from this book on two separate occasions.

Page 12, middle. In the statement of the Structural Description (S.D.) of the Imperative transformation, the symbol ## appears. This is defined in the appendix as ‘sentence boundary’, but it is not introduced into linguistic structures by any of B’s rules. In fact the symbol is not needed, either in this rule or in any of the others where she uses it, viz. Passive, Neg-(ative)-Emp(hasis) Placement, Adverb Preposing, and Subject–Verb Inversion. To make matters worse, she sticks in an irrelevant #, defined as ‘word boundary’, in the S.D.’s to Tag Formation and *There*-Insertion.

P. 12, bottom, and elsewhere. The symbol PRES is used in trees to stand for both the categories ‘Pre-Sentence’ and ‘Present Tense’. This is needlessly confusing.

P. 14, bottom. The statement of the rule of Affix Hopping is very strange. It is given as follows:

S.D.	X	–	[Affix]	–	[verb]	–	Y	
	1		2		3		4	
								⇒ oblig
S.C.	1		#	3	2		#	4

First of all, none of B’s rules generate the symbols ‘[Affix]’ and ‘[verb]’; so, technically, Affix Hopping is never applicable by virtue of never having anything to apply to. Her intent is to let the symbol [Affix] stand for the list of symbols {Pres(ent), Past, *en*, *ing*}, and [verb] for {M(odal), V(erb), *have*, *be*}. But then why aren’t these symbols listed directly in the statement of the S.D. of the rule? Presumably to make the rule look simpler than it really is (Chomsky’s motivation for doing roughly the same thing in *Syntactic structures* was admittedly this, but at least he said what he was doing and why.) Second, the elements of the Structural Change (S.C.) are misaligned. The alignment should be:

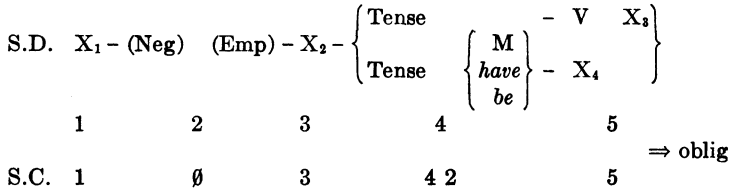
S.D.	1	2	3	4			
					⇒ oblig		
S.C.	1	0	#	3	2	#	4

This is not a trivial notational matter: it is only from the arrangement of the parts of the S.D. and the S.C., relative to each other, that one can determine exactly what changes take place. If a number appears in the S.C. directly below the same number in the S.D., then no change takes place. If a zero appears directly below a number in the S.D., it means that the string of constituents indexed by that number is deleted, together with everything which that string dominates. Finally, if below a given number in the S.D. a different number appears, or if there is a string of elements different in some way from the given number, then the elements indicated by the S.C. are substituted for the elements indicated by the S.D. Thus, in the case of Affix Hopping, one deletes the element indicated by 2 in the S.D., and replaces the element indicated by 3 by the configuration indicated by #3 2#. If one examines B’s tree diagrams, this is precisely what she does; but unfortunately one cannot determine this by inspection of her rule. In fact, the text badly needs some sort of exposition such as this on how to interpret the basic transformational operations, as well as a careful writing of all the rules so that it is crystal clear how they are intended to operate.

P. 15, middle. In the statement of Neg-Emp Placement, the brackets labeled PreS are not needed. Also, the material indexed by the integers 1 and 3 could be indicated by variable

letters, so that the rule will read as follows (I use X_1, X_2 etc. for the variable letters):

NEG-EMP PLACEMENT:



This amendment of the rule is not as trivial as it seems, since it is motivated by the general principle, underlying all good transformation-writing, that one should use variable letters to label all those parts of structures that play no role in the operation of transformations.

P. 19, bottom. There is a typo in Tag Formation; the right bracket immediately following the double mention of Tense should be deleted. Also, the symbols of the S.C. are misaligned: 1-5 should be directly below 1-5 of the S.D.; and under 6 of the S.D. should appear 6 plus the extra material added by Tag Formation. Moreover, if the rule is called obligatory, one cannot obtain simple imperative sentences like *Come!*, but only *Come, won't you?* (but see p. 48, where B does declare that Tag Formation is optional with imperatives).

P. 22, middle. The fact that B's rule of *There*-Insertion fails to deal with the facts of English might not be so bad, because the correct formulation of the rule has so far not been found. However, her formulation fails in silly ways; e.g., it incorrectly predicts that *There might be a devil among us* and *There arose a clatter around the corner* are not sentences of English, but that **There is a man nice* and **There are some people farmers* are. Also, she follows the well-worn but false claim that the underlying subject of sentences undergoing *There*-Insertion must be indefinite; if the claim is correct, then the *there* of *There's the satisfaction of doing a good job* is not introduced by this rule, which seems wrong. A final problem is the status of *there* itself; for various reasons (see p. 237 for a list), one wants to categorize it as a noun phrase (in B's diagrams it is so characterized). But by her rule, it receives no categorization at all. *There*, in her formulation, is substituted for an NP (which in turn is copied elsewhere in the sentence). But the process of substitution wipes out the category symbol of the substituent, so that the information that *there* is an NP must be contained in the S.C. of the transformation.

I leave it as an exercise to patch up the rule to cover the objections I have just raised. The resulting rule will not be 100% correct, however, and there is still a nasty problem of derived constituent structure. Consider the sentence *What is there a cow sitting on?* Following B's rules, one obtains Figure 1 as a surface structure for this sentence.

Note here that the phrase *a cow* is categorized not only as an NP but also as Aux. This is patently absurd; but it follows inexorably from the rules, which otherwise seem reasonably well-motivated.

P. 25, top. The consequence of B's formulation of Question Formation is that simple yes-no questions like *Did Sheila go to the movies?* cannot be generated. In fact, from the deep structure that one would be inclined to associate with that sentence, one obtains instead the tag-question *Sheila went to the movies, didn't she?* This deficiency is easily rectified—(1) by

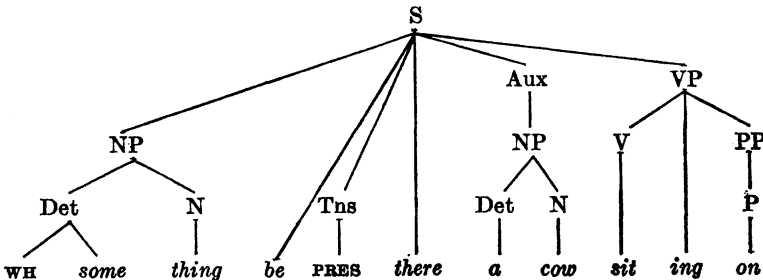


FIGURE 1

adjoining the interrogative NP to the abstract question element Q, rather than substituting the NP for Q; and (2) by formulating Subject-Verb Inversion (p. 26, top) in terms of Q instead of the interrogative NP (see below).

There is also a problem with preposition-stranding. B begins her illustration of the rule by saying that *Whom should we speak to about this?* will be derived, but she winds up deriving *To whom should we speak about this?* instead. Both versions are of course grammatical (see p. 45 for a statement of this, which of course belongs here on p. 25); but B's method of permitting both to be generated is incorrect. To see this, we must refer to the S.D. of the rule:

QUESTION FORMATION:

S.D. Q - X - [PP (P) [NP [Det WH some] Det N] NP] PP - Y

By putting the preposition (P) in parentheses in the S.D., B claims to be expressing (1) that no preposition need be present (and also, perforce, no preposition phrase, despite the fact that she does not put the brackets labeled PP in parentheses) for the S.D. of the rule to be satisfied; and (2) that even if the preposition is present, it may be ignored—or, more precisely, be contained in the preceding variable string labeled X. But these are two separate notions, and it is a mistake to use the same notation to cover them both. Consider French, where preposition-stranding is disallowed (i.e. *À qui voulez-vous parler de ceci?* but not **Qui voulez-vous parler à de ceci?*), but where interrogation may occur even if there are no prepositions (*Qui voyez-vous?*) There would seem to be no notation to distinguish between the English and French situations if we allow the use of parenthesized elements following a variable to play the double function that B suggests. The solution is to allow the use of parentheses in S.D.'s to express only the first condition, namely that the parenthesized element need not be present for the S.D. to be satisfied. We then express the second condition in the statement of the S.C., as follows:

QUESTION FORMATION:

S.D. Q - X₁ - (P) - [NP [Det WH some] Det N] NP - X₂

1 2 3 4 5 ⇒ oblig

S.C. 1 0/34 2 3/0 0 5

In the S.C. the diagonal slash plays the role of numbered curly braces in the text—one chooses either above or below the slash in any given derivation.

Finally, B puts too stringent requirements on the form of the interrogative NP that is fronted by the rule (and then she violates these requirements in some of her illustrative derivations, as on pp. 28-9!) All one need say is that the fronted NP contains the WH-element:

QUESTION FORMATION:

S.D. Q - X₁ - (P) - [NP X₂ WH X₃] NP - X₄

1 2 3 4 5 ⇒ oblig

S.C. 1 0/34 2 3/0 0 5

P. 26, top. As in the case of Tag Formation, there is a typo in the statement of Subject-Verb Inversion involving a right curly brace. The one that appears following the double mention of Tense should be deleted, and one should be added at the very end of the rule; moreover, the S.C. is wrongly aligned (again!) Also, in line with my suggestion above concerning the retention of the symbol Q as a result of Question Formation, the rule should be restated in somewhat the following terms:

SUBJECT-VERB INVERSION:

S.D. $\left\{ \begin{array}{l} Q \left((P) [NP X_1 WH X_2] NP \right) \\ \\ (P) [NP X_3 Neg X_4] NP \end{array} \right\} - X_5 - \left\{ \begin{array}{l} \text{Tense} \quad - V X_6 \\ \\ \text{Tense} \left\{ \begin{array}{l} M \\ have \\ be \end{array} \right\} - X_7 \end{array} \right\}$

1 2 3 4 ⇒ oblig

S.C. 1 3 2 0 4

Here I have explicitly separated out the two conditions for inversion in English, the one involving the presence of Q (with or without a following interrogative NP or preposition phrase), and the other involving the presence of a fronted negative NP or preposition phrase.

It turns out, however, that this formulation has the following bizarre defect (in common with B's formulation): of the following four grammatical English sentences, only the last one can be generated: *Who didn't you see?*, *Who did you not see?*, *Who haven't you seen?*, *Who have you not seen?* To rectify this, one must explicitly mention Neg in the S.D. of Subject-Verb Inversion, and allow it to be optionally fronted along with that part of the auxiliary that is fronted. I.e., we must state the rule as follows (I now drop the term that deals with fronted negative NP's and preposition phrases, since for various reasons that aspect is probably best handled by a separate rule anyway):

SUBJECT-VERB INVERSION (FOR QUESTIONS):

$$\begin{array}{r}
 \text{S.D. } Q (P) \left[\text{NP } X_1 \text{ WH } X_2 \right]_{\text{NP}} - X_3 - \left\{ \begin{array}{l} \text{Tense} \quad - (\text{Neg}) (\text{Emp}) - V X_4 \\ \text{Tense} \left\{ \begin{array}{l} M \\ \text{have} \\ \text{be} \end{array} \right\} - (\text{Neg}) (\text{Emp}) - X_5 \end{array} \right. \\
 \begin{array}{cccccc}
 & 1 & & 2 & & 3 & & 4 & & 5 \\
 \text{S.C.} & 1 & 3 & \emptyset/4 & & 2 & & \emptyset & & 4/\emptyset & & 5 & \Rightarrow \text{oblig}
 \end{array}
 \end{array}$$

Note that B's derivation of *What doesn't John like?* (30-32) works only when my formulation is used.

P. 37, bottom. The statement of Passive suffers from the same double fault of underutilization of variable letters and misalignment of the S.C. Also, since the transformational introduction of the preposition *by* also creates a new preposition phrase, that structure must specifically be mentioned in the S.C. Thus a better formulation of the rule is:

PASSIVE:

$$\begin{array}{r}
 \text{S.D. } X_1 - \text{NP} - X_2 \text{ Passive } V (P) - \text{NP} - X_3 \\
 \begin{array}{cccccc}
 & 1 & 2 & & 3 & & 4 & & 5
 \end{array}
 \end{array}$$

⇒ oblig

$$\begin{array}{r}
 \text{S.C. } 1 \quad 4 \quad \quad 3 \quad \quad \emptyset \quad 5 \text{ [P [P by]P 2]PP}
 \end{array}$$

Pp. 39-41, discussion of the interaction of Dative and Passive. Rather uncharacteristically, B does not discuss all the evidence bearing on the relative ordering of Dative, the rule that interchanges the positions of indirect and direct objects (stated on p. 38), and Passive. She argues that Dative must precede Passive so that sentences like *A package was sent to Jane by Charlotte* can be generated. What she does not point out is that this ordering of the rules prevents the derivation of *A package was sent Jane by Charlotte*, since a *package* does not directly follow the verb at the point of application of Passive. To generate sentences such as these using the ordering Dative-Passive, the S.D. of Passive must be revised to read:

PASSIVE:

$$\begin{array}{r}
 \text{S.D. } X_1 - \text{NP} - X_2 \text{ Passive } V \left(\left(\begin{array}{l} P \\ \text{NP} \end{array} \right) \right) - \text{NP} - X_3
 \end{array}$$

The interaction of Dative and Question Formation (along with other rules which move NP's to the beginning of sentences) is also problematic. It is a generally accepted piece of grammatical wisdom that one cannot front an indirect object NP unless Dative has applied so as to mark it with a preposition; thus it is held that *Who did Jane send a package to?* and *To whom did Jane send a package?* are both grammatical, but that *Who did Jane send a package?* is not. This patterning of grammaticality judgments cannot be handled by rule ordering; one must impose a condition either on Dative, to the effect that the rule is obligatory in case the indirect object contains WH; or on Question Fronting, to the effect that the rule is inapplicable in case the verb is immediately followed by two NP's, the first of which contains WH. Either way, the solution seems inelegant and ad hoc, and one is

led to question the grammaticality judgments which motivated them in the first place. Perhaps B was wise to pass over in silence this interaction of two of the rules of her grammar, but on the other hand it raises fundamental questions of data interpretation that could be profitably explored in a work of this sort.

P. 54, middle. In the statement of Agent Deletion, B's failure to make maximum use of variable letters leads her into substantive error. According to her formulation, only agent phrases that immediately follow the verb are subject to deletion. But this falsely predicts that a sentence like *John was talked to about his attitude* cannot be obtained by Agent Deletion from its source *John was talked to about his attitude by someone*. (Note that B's Passive rule puts the agent phrase at the very end of the sentence. This in itself yields false predictions, since there are a number of constituents within a sentence that agent phrases may precede. To deal with such facts about freedom in the order of constituents in English, however, would require a much more extensive discussion than would be profitable here.) Therefore the correct S.D. for Agent Deletion must be:

AGENT DELETION:

S.D. X_1 Passive X_2 - *by* NP - X_3

The condition that B imposes on this rule, namely that the deleted agent phrase must be either *by someone* or *by something*, falsely predicts that a sentence like *John was pushed* is ambiguous between the interpretations that John was pushed by someone or by something (it is in fact unspecific or vague about the character of the agent). This observation leads to the conclusion that the deleted agent phrases of such sentences contain lexically unspecified NP's (which we may, following Chomsky 1965, symbolize as Δ).

P. 71, middle. The statement of Relative Clause Formation (a misleading name—it would be better dubbed Relative Pronoun Formation) is fraught with numerous difficulties. First, the PS rule that Relative Clause Formation presupposes, namely NP \rightarrow NP S, is not given in the appendix. Second, the possibility of stranding a preposition is indicated by the use of parentheses, which we have already seen (above, in the discussion of Question Formation) to be illegitimate. Third, the S.C. is misaligned. Fourth, B makes no provision for the use and distribution of the relative particle *that* (as in *the person that met me*). Fifth, the condition that there must be identity between the NP which the relative clause modifies and an NP within the relative clause is wrong; they must be identical except for determiners and quantifiers (in fact, in the derivation of the very first example, *The nut whom I was kissing laughed*, the determiners of the two NP's are given as different). Sixth, no distinction between restrictive and non-restrictive relative clauses is drawn (the examples are all of the restrictive variety). Seventh, no provision is made for relative pronouns being formed within larger NP's, as in *The man whose eyes sparkled was chosen*; *The mountain the top of which no one can see is sacred*; *The mountain which no one can see the top of is sacred*. It is possible, though not particularly illuminating, to rewrite Relative Clause Formation so as to satisfy the objections just given. The tremendous complexity of the result suggests that the rule has been designed to deal with too much at once, and that there must be at least two separate rules—one adding the relative pronoun or particle at the beginning of the relative clause, and one deleting the shared NP within the relative clause—plus a convention, akin to Ross's (1967) pied-piping convention, for dealing with the fronting of NP's that include the relative pronoun within them.

P. 72, bottom. The first variable letter in the rule of Extraposition from NP should be X, rather than Y, and the division between items 3 and 4 of the S.D. should precede the right-bracket labeled NP, rather than follow it. Thus the rule should read:

EXTRAPOSITION FROM NP:

S.D. X - [_{NP} NP - S -]_{NP} Y

1	2	3	4	
				\Rightarrow opt

S.C. 1 2 \emptyset 4 3

In her illustrations of this rule, B gives no examples of its application to NP's which are not surface subjects. This may mislead some readers into thinking that the rule applies

only to subjects; but that it is not so restricted can easily be seen from examples like *We looked at a house yesterday which had everything we wanted*. There is also some question as to the applicability of the rule to move relative clauses around other NP's. Consider, e.g., the rule's applicability to the structure underlying the sentence *A man who is sick should see a doctor*. The result is *A man should see a doctor who is sick*. If we now consider the latter sentence by itself, our natural interpretation of it is such that the relative clause *who is sick* modifies *doctor*, not *man*. But, it may be argued, it could be interpreted the other way, as predicted by the unrestricted version of Extraposition from NP. In other words, our natural, or preferred reading of sentences like *A man should see a doctor who is sick* is based on the perceptual principle that relative clauses modify the nouns they immediately follow, but other readings are possible, based upon the applicability of Extraposition from NP (for further discussion, see Jackendoff & Culicover 1971).

P. 78, top. In the S.C. of Relative Clause Reduction, replace the second occurrence of 2 by 4. A more serious objection to the rule is that, as formulated, it fails to apply to many structures to which it should be applicable. To see this, consider its S.D., which is given as follows:

RELATIVE CLAUSE REDUCTION:

$$\text{S.D. } X - \underset{1}{\text{NP}} \underset{2}{\text{NP}} - \left[\begin{array}{c} \text{NP} \\ +\text{Pro} \\ +\text{WH} \end{array} \right] \underset{3}{\text{Tns } be} - \underset{4}{\text{VP}} \underset{5}{\text{]}_{\text{NP}} - Y$$

According to B's PS rules, either the element *be* is part of the auxiliary, or it is the first member of the VP. In the former case, *be* is followed in deep structure by one of the affixes *ing* or *en*; but since Relative Clause Reduction is said to follow Affix Hopping, *be* will be followed by the VP if no other elements of the Aux besides these affixes follow *be*, and the rule will be applicable. But if another element of the Aux should intervene, then the S.D. of Relative Clause Reduction can never be satisfied, falsely predicting that the structure underlying a sentence like *The box which is being sent contains oranges* cannot be reduced to the structure *The box being sent contains oranges*. Even worse, if *be* is the first member of the VP, there is no possible way for it to be followed by VP; and so the rule as falsely written predicts that *Someone who is crazy must have done this* cannot be reduced to *Someone crazy must have done this*.

The remedy for this defect is strikingly simple: replace VP by a variable letter, and make other simplifications in the statement of the rule, so that it reads:

RELATIVE CLAUSE REDUCTION:

$$\text{S.D. } X_1 \underset{1}{\text{NP}} - \left[\begin{array}{c} \text{NP} \\ +\text{PRO} \\ +\text{WH} \end{array} \right] \underset{2}{\text{Tns } be} - \underset{3}{X_2}$$

$$\text{S.C. } 1 \quad \quad \quad \emptyset \quad \quad \quad 3 \quad \Rightarrow \text{opt}$$

P. 79, bottom. There is a glaring typo in the condition on the Modifier Shift transformation—an inequality sign has been omitted. Other modifications in the rule are also necessary; but rather than arguing for them here, let me simply present the rule in a more appropriate form:

MODIFIER SHIFT:

$$\text{S.D. } X_1 \underset{1}{\text{NP}} - (\text{Det}) - \underset{2}{\text{N}} - \left[\underset{3}{\text{VP}} \underset{4}{\left\{ \begin{array}{c} \text{Adj} \\ \text{V} \end{array} \right\}} \right] \underset{5}{\text{]}_{\text{NP}} X_3$$

$$\text{S.C. } 1 \quad 2 \quad 4 \quad 3 \quad \quad \quad \emptyset \quad \quad \quad 5 \quad \Rightarrow \text{oblig}$$

Condition: 2 3 ≠ some $\left\{ \begin{array}{c} \text{one} \\ \text{thing} \end{array} \right\}$

Pp. 84-6, discussion of the interaction of Extraposition from NP and Relative Clause Reduction. B appeals to rule ordering to handle the ungrammaticality of sentences like **Someone must have done this crazy*, in which the reduced relative clause *crazy* is separated

from the noun or pronoun (*someone*) which it modifies. Unfortunately for this approach, there are perfectly grammatical sentences in English which contain extraposed reduced relative clauses, e.g. *Someone arrived eager to pick a fight with anyone who would pay attention to him; A casket was brought in all draped in black.* To generate such sentences, we must allow either for the extraposition of certain reduced relative clauses, or for the reduction of certain extraposed clauses. For various reasons, again too lengthy to expound here, it is probably better to allow for the extraposition of certain reduced clauses, which means that Extraposition from NP follows, rather than precedes, Relative Clause Reduction.

Pp. 88-91, discussion of the interaction of Question Formation and Extraposition from NP. In the derivation of sentences like *Whom do we know, who is unfair?*, B declares that there is necessarily an intermediate stage: *Whom, who is unfair, do we know?* She supports this contention simply by referring to Ross 1967. This claim is probably wrong. First of all, sentences in which the relative clause is not separated from the question word (except for those derived from the surface subject) are unacceptable for many persons—thus making Extraposition from NP obligatory, or practically so, in such cases. Second, the claim fails to account for grammatical sentences in which the relative clause does not turn up at the end of the clause containing it, e.g. *What did you send that was alive to Tom?* As far as I can determine, the only way to derive this sentence is to allow Question Formation to front just the question word *what*, leaving the relative clause behind. To obtain *What did you send to Tom that was alive?*, one fronts both the question word and the relative clause (in the manner described by B), and then extraposes the relative clause (again in the usual manner). But this means that B's example *Whom do we know, who is unfair?* has two derivations, each starting from the same deep structure and each terminating in the same surface sequence (but with slightly different surface structures—in one case the relative clause is part of the surface VP, in the other it is not).

P. 91, middle. The statement of Possessive Formation is incoherent. It should read:

POSSESSIVE FORMATION:

$$\begin{array}{rcccccc}
 \text{S.D.} & X_1 & [_{\text{NP}} \text{NP} - [_{\text{S}} & \begin{array}{c} \text{NP} \\ +\text{Pro} \\ +\text{WH} \end{array} & - \text{NP} - \text{Aux } \textit{have}]_{\text{S}} -]_{\text{NP}} & X_2 \\
 & 1 & & 2 & 3 & 4 & 5 \\
 & & & & & & = \text{opt} \\
 \text{S.C.} & 1 & & \emptyset & \textit{of 3 Poss} & \emptyset & 5
 \end{array}$$

Unfortunately, B fails to provide a derivation of a sentence in which Possessive Formation applies without the further application of Possessive Shift (discussed below). Such an example would be *John found a picture of Harry's underneath the rubble*, presumably from *John found a picture which Harry had (has?) underneath the rubble*. The basis for the decision to derive such possessive genitives from relative clauses with *have* is not given; presumably it is because the latter expressions are felt to be both synonymous with and more basic in structure than the former.

P. 93, top. The statement of Possessive Shift leaves out the crucial requirement (duly noted in B's discussion in the middle of the page) that the determiner which is replaced by the possessive genitive must be definite.

At this point in the text, it would have been opportune for B to have pointed out that Possessive Shift is but a special case of a more general rule of Prenominal Genitive Formation. Thus, not only does *the picture of Harry's* become *Harry's picture*, but so does *the picture of Harry*, in which the *of*-phrase is directly generated by the PS rules.

P. 96, bottom. B raises here the possibility of applying a transformation with no structural change resulting. The rule in question is Extraposition (p. 94), which requires a couple of minor changes so as to read:

EXTRAPOSITION:

$$\begin{array}{rcccc}
 \text{S.D.} & X_1 & [_{\text{NP}} [\textit{it} - \text{S} -]_{\text{NP}} & X_2 \\
 & 1 & 2 & 3 \\
 & & & \Rightarrow \text{opt} \\
 \text{S.C.} & 1 & \emptyset & 32
 \end{array}$$

What if X_2 is null? The rule then invites one to move a clause around nothing, which is to say not to move it at all. But such a vacuous movement could have a structural effect, such as removing the S from the NP and, let us say, adjoining it as a constituent to the main clause. Given that Extraposition is an optional rule, and given B's formulation of *It-Deletion* (p. 95) in which *it* is deleted obligatorily if S follows within an NP, such an interpretation of vacuous Extraposition would incorrectly predict **Someone proved it that Andy smoked pot* to be grammatical. But there are well-known cases in which *it* is retained before object-complement clauses, e.g. *Everyone appreciates it that you're helping out*, which could be derived if vacuous but structure-changing Extraposition were allowed in this case.

Pp. 102-6, 106-9, discussion of the interaction of Extraposition with Relative Clause Formation and with Question Formation. B here argues fallaciously that the ordering of Extraposition before Relative Clause Formation and Question Formation accounts for the ungrammaticality of sentences like **The hat which that Tom bought is obvious is made of gold* and **What hat is that Tom bought obvious?* (cf. grammatical *The hat which it is obvious that Tom bought is made of gold* and *What hat is it obvious that Tom bought?*) Her argument depends on Extraposition being obligatory, but of course it is not—i.e., the ungrammatical sentences result from the FAILURE to apply Extraposition; but since the rule is optional, she cannot require it to be applied. It is perhaps worth pointing out that there is no obvious solution to the problem of accounting for the foregoing grammaticality judgments (but see Ross 1967).

Pp. 109-11, schematic discussion of how the transformational cycle works. In general, B does an excellent job of showing how one applies transformations in a cyclic fashion (essentially, the last 120 pages of the text are devoted to such demonstrations), and of showing why certain transformations must apply cyclically (see in particular pp. 157-65). What she leaves undetermined, however, is whether all the 27 transformations discussed in the text are cyclic—and if not, which ones are not. The fact that she lists all 27 transformations in Appendix 5, p. 253, 'Ordering of all rules given,' suggests that she views all these rules as being in the cycle. On the other hand, in her derivations of sentences, she consistently treats Affix Hopping as applying only after the cycle has been completed, so that this rule and those that follow it (seven in all) are treated as post-cyclic. But no basis for this decision is given.

P. 111, middle. B states correctly that Complementizer Placement—the rule that inserts *that* in *that*-clauses, *for* and *to* in infinitive clauses, and *Poss* and *ing* in gerundial clauses—never applies to unembedded sentences. But one cannot determine that by inspection of the S.D. and Conditions of the transformation as stated. She also claims that the rule does not apply to relative clauses, and I disagree with that claim. First, it seems quite reasonable to view the relative particle *that* in the relative clause of *the man that I talked to yesterday* as a complementizer rather than as a relative pronoun (Bever & Langendoen 1971). Second, there are gerundial relative clauses, and possibly also infinitival ones as well: consider *students knowing the answer to that question*, which derives from *students* [_S *students know the answer to that question*]_S; and *a movie to see*, which plausibly derives from *a movie* [_S *one should see the movie*]_S.

This last example raises a further problem with Complementizer Placement as B formulates it. If *for-to* or *Poss-ing* is chosen, the elements *to* and *ing* replace the underlying string Tense (Modal). But, clearly, one does not want to derive the infinite clause in *I expect John to leave* from all deep structures of the form *I expect* [_S *John TENSE (MODAL) leave*]_S; rather, only *I expect* [_S *John PRES will leave*]_S seems reasonable as a source. Similarly, *John denied, watching television* comes only from *John denied* [_S *John PAST watch television*]_S. Thus, what sequence of Tense and Modal is replaced by *to* and *ing* depends on the choice of the verb in the next higher clause and on the tense of the next higher clause, a fact not even hinted at in B's discussion.

P. 121, middle. B formulates Equi-NP Deletion, the rule that deletes subjects of infinitive and gerundive complements under identity with another NP in the next higher clause, in a

way which permits it to apply in cases where it should not. Earlier (p. 119), she states informally the condition that 'the subject NP of the embedded sentence must equal either the subject NP of the matrix sentence, or the object NP of the matrix sentence.' But this condition per se is not built into her formal statement of the rule; rather, all she says is that the identical NP must occur either before or after the embedded sentence. Thus it would be possible to derive, from *The boy wanted it* [_S a moment PAST elapse]_S for a moment, the anomalous sentence **The boy wanted to elapse for a moment*.

However, if we build into the S.D. of Equi-NP Deletion the requirement that the NP's triggering the deletion be subject or objects of the clause in which they occur, we will considerably complicate the statement of the rule, and will in fact violate one of Chomsky's proposed universals of linguistic theory, namely that information about grammatical relations is never used by transformational rules. The alternatives would seem to be simply either to abandon Chomsky's proposed universal, or to give up the idea that Equi-NP Deletion is a transformation of English (but see the discussion just below).

Pp. 129-35, discussion of the Principle of Minimal Distance (PMD). The S.D. of Equi-NP Deletion is also inadequate as it stands, since it falsely predicts that, if there is both a subject and an object NP together with a complement, the identity of EITHER NP with the subject of the complement would be sufficient to trigger Equi-NP Deletion. In the vast majority of cases, it is identity with the object NP that is required. E.g., a sentence like *The mediators couldn't persuade the two parties to reach an agreement* [_S the two parties AUX reach an agreement]_S, not from NEG *the mediators could persuade the two parties* [_S the mediators AUX reach an agreement]_S. To handle this, B (following Rosenbaum 1967) proposes that, in addition to Equi-NP Deletion, there is a principle requiring that the NP which is identical with the subject of the complement be the closest NP to it—where degree of closeness is measured by counting the number of nodes that intervene between the complement and the identical NP. This is the PMD.

The incorporation of such a principle into linguistic theory, however, is an even more radical step than allowing grammatical relations to enter into the S.D.'s of transformations. Furthermore, it is factually wrong, since (as both Rosenbaum and B have admitted) it fails in the case of such a sentence as *John promised Mary to shave himself*, which palpably cannot come from *John promised Mary* [_S Mary AUX shave John]_S, but rather must come from *John promised Mary* [_S John AUX shave John]_S. Such counter-examples to the PMD, furthermore, are not as isolated as they may seem at first glance; the PMD also fails for a wide variety of other cases, such as *John made Mary an offer to shave himself*; *John received instructions from Mary to shave himself*; *John asked Mary what to shave himself with*; *John found out from Mary what shaving himself meant to her*, etc. Apparently what is required, instead of the PMD, are specifications in the lexical entries of items such as *persuade*, *promise*, *ask*, *offer*, *receive*, *find out* etc., as to what grammatical relation the identical NP must have in order for Equi-NP Deletion to apply.

P. 137, first diagram. Here, for the first time, B uses the PS rule which directly introduces the constituent S as an element of the VP. Up to this point, all complement sentences have been introduced as elements of NP's, by the rule NP → (Det) N (S). Why such a distinction between complements is drawn is never explained or justified—a particularly galling situation in view of the fact that the sentence under discussion, *Mary forced John to be examined*, contains the same main verb (*force*) as an earlier example (p. 129), *Jason forced the Hollanders into going*, in which the complement is analysed as belonging to an NP.

The distinction in question, historically, comes from Rosenbaum, who attempts to justify it on the basis of rather subtle (and controversial) distinctions in grammaticality judgments. The distinction has not been widely accepted, since the grammaticality judgments can be explained on independent grounds. Most practitioners have chosen, therefore, to view all complements as originating within NP's, eliminating the possibility of having S introduced directly as such.

P. 141, top. The acronym END for Equi-NP Deletion is here introduced without explanation. The explanation is given on p. 142, bottom.

P. 154, top, and p. 172, bottom. As an illustration of the sloppiness with which this book was produced, consider how the technical notions of 'daughter-adjunction' and 'sister-adjunction' are introduced. On p. 154, it is noted that, in the application of the Passive transformation, the underlying subject of the clause becomes a derived constituent of the VP of the clause. If we think, for a moment, of tree-diagrams as representations of kin-relations, the underlying subject becomes a 'child' (arbitrarily, let us say a 'daughter') of the VP. Given that it is useful to have such terminology, why was it not introduced at the beginning of the book, or at least back on p. 37, where the Passive transformation was defined? Furthermore, B makes two mistakes which can only succeed in making the concept appear totally incoherent. First she says that the underlying subject is daughter-adjoined to the verb; but as the diagrams quickly reveal, it is daughter-adjoined to the VP, and (in keeping with the metaphor) sister-adjoined to the verb. Second, from her definition of daughter-adjunction (given in a footnote on p. 154) it follows that the underlying subject NP is not daughter-adjoined to the VP at all. The problem is not with B's definition, which is correct, but with the fact that the underlying subject is immediately dominated by the node PP, which is created by the Passive transformation. It is this PP which is daughter-adjoined to VP, not the underlying subject NP.

On p. 172, the companion notion 'sister-adjunction' is defined, again in a footnote. What none of B's discussion succeeds in pointing out is the simple fact that ALL adjunction in her grammar is sister-adjunction. E.g., the underlying subject in the Passive transformation is adjoined to the right of the verb; hence it is sister-adjoined to the verb. In Extraposition, the complement is adjoined to the right of a variable; hence it is sister-adjoined to whatever the sentence containing the complement happens to end with, and consequently is daughter-adjoined to the sentence as a whole.

In general, sister-adjunction, as B uses it, is better motivated than daughter-adjunction. It would have been extremely useful to have had a discussion of the various modes of adjunction, together with an explanation of the superiority of sister-adjunction, at the beginning of the text.

P. 157, middle. The sentence just generated is *Pete imagined to be being bribed to be persuaded to kiss Liberace*, not *Pete imagined being bribed . . .*

P. 168, middle. The sentence to be generated is *John is likely to blab*, not *John is certain to blab*.

P. 169, bottom. B chooses not to state *It*-Replacement (a rule sometimes referred to in the literature as Raising or Subject-Raising) 'because it is complicated'. It isn't really. The transformation consists simply of the substitution of the subject of an infinitive for *it*, deletion of the preposition *for* associated with that subject, and sister-adjunction of the rest of the infinitive to the VP of the next higher sentence. Formally, it looks like this:

IT-REPLACEMENT:

S.D.	X_1	[$NP - it -$	$[_S - for -$	$NP - X_2 -$	$[_S - X_3]$	$VP - X_4$				
	1	2	3	4	5	6	7	8	9	
										⇒ oblig
S.C.	1	5	∅	∅	∅	∅	∅	8	6	9

The one thing awkward about our formulation of this rule is our treatment of the S-node dominating the underlying infinitive. In the labeled-bracket notation used for writing S.D.'s, it must be mentioned twice (terms 3 and 7). Here I have chosen to delete it; however, if it is to be moved along with the variable X_2 (term 6), as seems reasonable, it is not clear how that movement should be stated. Of course, if S.D.'s were given in tree-diagrammatic form, this problem would not arise.

Pp. 188-9, discussion of the interaction of Passive and *There*-Insertion. This is redundant: a practically identical discussion may be found on pp. 41-2.

P. 196, bottom. B claims to have derived the sentence *Some ants were believed by Mary to have been eaten by John*. She has not; rather she has given the derivation of *Some ants*

were believed to have been eaten by John by Mary. To obtain the desired sentence, a rule not discussed by B will be necessary to shift the infinitive clause to the end of the sentence containing it.

Pp. 218-35. Throughout, B derives pairs of sentences in tandem. To know what is going on, one must pay close attention to the numbers in parentheses, which indicate what sentence is under derivation at that point.

P. 236, top. On p. 22, *There*-Insertion was defined as optional. Here, 214 pages later, it is revealed that the rule is obligatory in case *be* is intransitive—i.e., followed by no other constituents. This observation, obviously, should have been made in connection with the original discussion of *There*-Insertion.

This concludes my detailed examination of the text. It represents the kind of scrutiny that the work should have received prior to publication. Assuming that the book is corrected along the lines suggested, the question remains how it can be used by student and instructor. As Burt herself notes, it is definitely not usable by itself for a course either in English syntax or in transformational theory. Rather, she tells us, it should be used as a supplementary workbook for an introductory course.

But what work? There are no exercises. The rules are presented—nothing more—and the arguments for rule ordering are painstakingly worked out. There is nothing for the reader, instructor or student, to do except to note (or be confused by) the mistakes. One must therefore use one's ingenuity. I have found, for example, that the mistakes in the book provide useful bases for problem exercises. Even with the corrections I have suggested, many of the rules continue to make false predictions about English sentences. Moreover, it is possible to ask students to work out other rules of English grammar, such as Particle Movement and Cleft-Sentence Formation, using the formalisms of the book, and to integrate these into Burt's grammar. For teaching current issues, however, the book is not very useful, since none of the critical problems now under intensive investigation are considered—e.g., the interactions of quantifiers and negation, how NP's are introduced, and phenomena dealing with conjunction. In spite of its deficiencies, however the book is a landmark achievement, and once corrected should remain useful for years to come.

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