GLOBAL RULES

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During the past five years it has become clear that phrase structure rules and transformations provide a grossly inadequate characterization of the notion 'rule of grammar'. The problem is this: phrase structure rules and transformations are local; they define well-formedness conditions on individual phrase-markers and on pairs of successive phrase-markers. However, certain rules of grammar are global in nature; they extend over entire derivations, or parts of derivations, and cannot be stated in full generality (if at all) by local operations. I have proposed that rules of grammar be considered as well-formedness conditions on derivations (or 'derivational constraints'). In the most general case, rules of grammar will be global in nature. Phrase structure rules and transformations turn out to be special cases of derivational constraints. From the point of view of linguistic description, the theory of derivational constraints is as much an innovation over transformational grammar as transformational grammar was over phrase structure grammar. In this paper a few of the phenomena that require the postulation of global derivational constraints will be considered. Some of these are purely syntactic in nature; others involve the interaction of syntax and phonology. The cases that involve the interaction of syntax and semantic representations are not considered here, nor is the formal characterization of such constraints included.[1]

It has become clear over the past five years that transformational generative grammar is nowhere near being an adequate theory of human language. Those of us who have tried to make transformational grammar work have attempted to patch up the classical theory with one ad hoc device after another: my theory of exceptions (Lakoff 1965), Ross' constraints on movement transformations (1967), the Ross-Perlmutter output conditions,[2] Postal's crossover principle (1968) and anaphoric island constraints (1969), Jackendoff's surface interpretation rules (1969), Chomsky's lexical redundancy rules and his analogy component (MS a), and so on.[3] In a recent paper called 'On generative semantics' (Lakoff, MS), I suggested that most, if not all, of these ad hoc patching attempts were special cases of a single general phenomenon: global derivational constraints.

The trouble with phrase-structure and transformational rules is that they are local; they define well-formedness conditions on individual phrase-markers and on pairs of successive phrase-markers in a derivation. There do, undoubtedly, exist local rules in grammar. However, as I will try to show, there are also global rules in grammar, rules that extend over more than one part of a derivation.

Incidentally, the notion of a derivational constraint is by no means new. Transformations are essentially local derivational constraints, in that they filter out those pairs of successive trees which are transformationally related from those

[1] This paper was presented at the annual meeting of the Linguistic Society of America, December 1969.

[2] Ross 1967, ch. 3; Perlmutter 1968. Cases involving pronominalization can be found in Lakoff 1968.

[3] For further examples of phenomena which cannot be handled by the classical theory, see Baker 1970 and Lakoff 1970.

which are not. Transformations state well-formedness conditions on configurations of corresponding nodes in two adjacent trees in a derivation. Global derivational constraints state well-formedness conditions on configurations of corresponding nodes in non-adjacent trees in a derivation. In other words, global rules may apply to trees which are widely separated. Let us turn to some examples.

1. In Classical Greek,[4] as in many other languages, participles and adjectives agree in person, number, and case with certain noun phrases. Let us consider the question of just how the general principle governing such agreement—in particular, case agreement—is to be stated. As a first approximation, we might say that adjectives and participles agree with their subjects:

(1) *Taûta díkaiá estin.*
These things (nom. pl.)—just (nom. pl.)—be.
These things are just.

Here the adjective *díkaia* is in the nominative, agreeing with its subject, *taûta*. However, the 'subject' involved in the rule of agreement cannot be the deep structure subject:

(2) *Taûta légetai díkaia eînai.*
These things (nom. pl.)—are said—just (nom. pl.)—be.
These things are said to be just.

Here we find *légetai* agreeing with *taûta*, even though *taûta* is a derived, not underlying, subject of that verb. Since the rules putting *taûta* in subject position (subject-raising and passive) are both cyclic rules, we might, as a second approximation, propose that agreement is a cyclic rule, applying to the output of the other cyclic rules. Adjectives and participles could then be considered as agreeing with their derived subjects, rather than with their underlying subjects. However, this is not quite right either, at least for case agreement:

(3) *Ísmen taûta legómena díkaia eînai.*
We know—these things (acc. pl.)—being said (acc. pl.)—just (acc. pl.)—be.
We know these things to be said to be just.

Here *taûta* has undergone subject-raising and been converted to the accusative case, as is normal with objects of *ísmen*. Since the accusative and the nominative endings have the same form, it is not clear just from this example that *legómena* and *díkaia* are in the accusative rather than the nominative case. However, there are examples which show that adjectives and participles agree in case with the DERIVED case of their 'subjects':

(4) *Emménomen toútois hà ísmen legómena díkaia eînai.*
We abide—by those [things] (dat. pl.)—which (acc. pl.)—we know—being said (acc. pl.)—just (acc. pl.)—be.
We abide by those things which we know are said to be just.

[4] The difficulty that Greek case agreement poses for the classical theory of transformational grammar was first brought to my attention by Avery Andrews. Robin Lakoff and Gregory Nagy assisted me in finding the examples to show that a rule essentially like the one proposed in 6 is necessary (see Lakoff and Perlmutter, MS, and Casagrande 1970 for a similar case).

Here *toútois*, the object of *emménomen* 'abide by' is in the dative, while the relative pronoun *há* is, like *taûta* in 3, in the accusative. As before, *legómena* and *díkaia* agree. Now there is a rule in Classical Greek which deletes the antecedent pronoun (*toútois* in 4) of a relative pronoun (*há* in 4); the relative pronoun then goes into the case otherwise taken by the antecedent pronoun. Thus in 5 we get *hoís*, rather than *há*:

(5) *Emménomen hoîs ísmen legoménois dikaíois eînai.*
We abide—by what (dat. pl.)—we know—being said (dat. pl.)—just (dat pl.)—be.
We abide by what we know is said to be just.

Note that the participle and adjective must now be in the dative, *legoménois* and *dikaíois* agreeing with *hoîs*; *legómena* and *díkaia* would be impossible in 5.

Let us now ask what the general principle governing case agreement is. It is clear that there cannot simply be a cyclical case agreement rule which says that adjectives and participles agree with their derived subjects. Those derived subjects can be moved out of subject position by later rules; in fact, they can be moved indefinitely far away by the rule of relative clause formation. Their case may be determined by a rule that applies after they have been moved. Still, the adjective must agree in case with the noun phrase that USED TO BE its derived subject at the appropriate earlier point in the derivation. The appropriate earlier point is at the end of the cycle on the innermost S containing that participle or adjective. Thus, the general agreement rule is:

(6) In surface structure, an adjective or participle must agree in case with the noun phrase that was its derived subject at the end of the first cycle on the innermost S containing that adjective or participle.

This principle must mention two distinct stages of the derivation: that point which determines the notion 'derived subject' (the end of the relevant cycle), and some later stage in the derivation that determines case assignment. Note that no ordinary transformational rule can be stated for case agreement in Classical Greek, since the NP that determines the agreement can be indefinitely far removed from the item it agrees with, and there is no way for such a rule to pick out the appropriate NP from among the others in the sentence without being able to look back to a prior point in the derivation. Thus, it should be clear that the rule of case agreement in Greek cannot be stated as a transformation, but instead must be stated in terms of conditions on corresponding nodes at widely separated points in a derivation.

2. Consider the following examples:[5]

(7) a. I bought the car from England and Sam bought the one from Spain.
b. *I met the king of England and Sam met the one of Spain.

A constraint of this approximate form must operate:

(8) **one of NP* is blocked.

[5] The facts of 7 were first discovered, to my knowledge, by Leroy Baker. Paul Postal observed that the constraint must mention some level before pseudo-adjective formation, as 9 shows.

This constraint must mention a stage after *one*-pronominalization. Moreover, it must precede certain transformational rules:

(9) a. I bought the English car and Sam bought the Spanish one.
b. *I met the English king and Sam met the Spanish one [where *the Spanish one* means 'the king of Spain', as opposed to the king from Spain'.]

In order to be able to say that the same constraint is at work in both cases, constraint 8 must be stated before pseudo-adjective formation. In addition, the constraint must be stated before still another rule. Consider the following:

(10) a. *I knew six girls from England and Irv knew five ones from Spain.
b. I knew six girls from England and Irv knew five from Spain.
(11) a. *I knew six kings of England and Irv knew five ones of Spain.
b. *I knew six kings of England and Irv knew five of Spain.

There is a general rule deleting the pronoun *one*(*s*) after a numeral. It is an obligatory rule; hence the ungrammaticality of 10a, but the grammaticality of 10b. But even the operation of this rule does not save 11b from ill-formedness; it must be ruled out by constraint 8. But this can only be done if that constraint holds before the rule deleting *one*(*s*) after numerals.

So far, all we have shown is that there is some blocking constraint, namely 8, that must hold at some intermediate stage of a derivation—after *one*-pronominalization, but before pseudo-adjective formation and *one*(*s*)-deletion. The constraint is, however, somewhat more complex. Consider the following:

(12) a. Max knew the girls from England and I knew the ones from Spain.
b. Max knew the girls from England and I knew those from Spain.

There is an optional morphophonemic rule 13, converting *the ones* to *those*:

(13) the ones ⇒ those
(14) a. *Max had known the kings of England and I had known the ones of Spain.
b. Max had known the kings of England and I had known those of Spain.

But note that *those* in 14 cannot be the demonstrative pronoun:

(15) a. *Max knew THÓSE kings of England and Sam knew THÉSE of Spain.
b. *Max knew THÉSE kings of England and Sam knew THÓSE of Spain.

Demonstratives *these* and *those* are impossible in sentences like 15. The occurrence of *those* in 14b is used non-demonstratively, and is understood only as a reflex of *the ones*. The remarkable thing about 14b is that it is grammatical, whereas 14a, from which it is derived, is not. That is, constraint 8, which blocks 14a, is not operable when *the ones* turns out in surface structure to be spelled *those*. Thus, it would appear that constraint 8 cannot be stated at a single level: it must refer to some intermediate level of the derivation and, in addition, to surface structure—in particular, to the output of the morphophonemic rules.

So far, we have seen that this constraint must be stated in terms of two separate points in a derivation. It is, however, even more complex. We will not go into the full complexity of the constraint here, but will discuss just enough to indicate that it must mention at least three separate points in a derivation.

Consider the following:

(16) a. *I saw the lover of Raquel Welch and Irving saw the one of Lana Turner.
b. I saw the picture of Raquel Welch and Irving saw the one of Lana Turner.

In 16a, the sequence *the one of Lana Turner* is blocked by our constraint, while in 16b the same sequence is not blocked. This shows that the constraint is sensitive to certain aspects of the source underlying the sequence *one(s) of NP*; that is, it depends upon either the semantic class of the pronominalized noun or, more likely, the semantic relationship between the pronominalized noun and the NP following *of*. In any event, the constraint must mention some stage in the derivation prior to the rule of *one*-pronominalization, in addition to a stage after *one*-pronominalization and a stage after certain morphophonemic rules. Unless there is some non-ad-hoc way around this account of the facts, it would appear that this constraint, however it is ultimately to be formulated, must mention at least three separate points in a derivation. This is rather unusual, since all the other known constraints mention two at most.

3. A particularly interesting example involving syntax and phonology has been brought to my attention by King 1970. The contraction of *be* in English is quite regular:

(17) a. There's THIS MUCH WINE in the bottle.
b. Harry's ON THE JOB in the afternoons.
c. I'm READY to help you.
d. It's THAT WAY in real life.
e. Bill's VERY RICH these days.
f. The concert's HERE at two o'clock.

King observes that there is, however, a general condition under which contraction cannot take place. If there is a constituent immediately following *be*, and if by any transformation that constituent is deleted, then the *be* cannot contract. The constituents following *be* are in small capitals in 17. Compare 17 to 18, where the constituents in small caps have been moved or deleted:

(18) a. I wonder how much wine there $\left\{\begin{matrix}\text{is}\\ \text{*'s}\end{matrix}\right\}$ in the bottle.
b. Sam's on the job in the mornings and Harry $\left\{\begin{matrix}\text{is}\\ \text{*'s}\end{matrix}\right\}$ in the afternoons.
c. Ready I $\left\{\begin{matrix}\text{am}\\ \text{*'m}\end{matrix}\right\}$ to help you.
d. That's the way that it $\left\{\begin{matrix}\text{is}\\ \text{*'s}\end{matrix}\right\}$ in real life.
e. Sam's richer than Bill $\left\{\begin{matrix}\text{is}\\ \text{*'s}\end{matrix}\right\}$ these days.
f. Tell Harry where the concert $\left\{\begin{matrix}\text{is}\\ \text{*'s}\end{matrix}\right\}$ at two o'clock.

In each of these cases a different transformational rule has operated to delete the constituent immediately following *be*, and this keeps the *be* from contracting.

The following pair illustrates this even more clearly:

(19) a. *Tell Harry where the concert's at two o'clock.
b. Tell Harry that the concert's at two o'clock.

Here the locative adverb *where* has moved from a position following *be*, and the *be* cannot contract. In 19b, there is no locative at all; and since no deletion has occurred, contraction occurs freely.

Now let us just consider what these facts mean. Since contraction is presumably an automatic consequence of a rule lowering the stress on the auxiliary *be*, and since contraction is a phonological process, the stress-lowering and contraction rules occur in the phonology. Deletion and movement rules, however, occur in the syntax. The above facts show an interaction between the rules of the syntax and those of the phonology. If, at any point in the syntax, a constituent immediately following *be* is deleted, then, later in the phonology, that *be* cannot undergo stress-lowering (and subsequent contraction). Thus we have a constraint operating at two separate points in the grammar, and it involves the notion 'corresponding nodes': the same *be* must be picked out in both places.

It should be noted, incidentally, that the constraint is more general than I have indicated, and applies to other auxiliaries and to the complementizer *to* as well. For example, Larry Horn has pointed out (personal communication) the following minimal pair:

(20) a. Teddy is the man I want to succeed.
b. Teddy is the man I wanna succeed.

Here 20a is ambiguous, and can be understood as either of the following:

(21) a. I want Teddy to succeed.
b. I want to succeed Teddy.

But 20b can only be understood in the sense of 21b, since *want to* cannot contract to *wanna* if there is an intervening NP between *want* and *to* at an earlier point in the derivation, as there is in 21a.[6]

4. Ross has pointed out still another class of examples requiring global derivational constraints. In a recent paper, 'Guess who' (1969), he observes that his constraints on movement transformations (1967) hold only if the island-forming node is present in surface structure. However, if a transformation subsequently deletes that node, then the constraints do not hold. For example,

(22) a. *Irv and someone were dancing, but I don't know who Irv and were dancing.

[6] Other examples of this phenomenon have been brought to my attention by Jerrold Sadock and Charles Fillmore. The auxiliary *have* normally contracts when it follows the pronoun *you: You've been seen.* However, in cases like *You should have hit Harry*, where there is an intervening auxiliary which can be preposed, bringing *you* and *have* together (*Should you have hit Harry?*), then *have* may be reduced to /əv/, but /yuw əv/ may not contract to /yuwv/: **Should you've hit Harry?* Similarly, as Fillmore has observed, the contraction of *have to* to *hafta* is an instance of the same rule: (a) *What does Irving have to eat?* is ambiguous, and can be answered either with (b) *Irving has bagels to eat*, or (c) *Irving has to eat bagels.* Note that in (b) there is an NP between *have* and *to*, which is moved to the front in (a). In this case, *have to*, by King's rule, may not contract to *hafta*. *What does Irving hafta eat?* can be understood in the sense of (c), but not (b).

b. Irv and someone were dancing, but I don't know who.

(23) a. *Mary met a man who had worked for someone famous, but she wouldn't tell me who she met a man who had worked for.

b. Mary met a man who had worked for someone famous, but she wouldn't tell me who.

Thus Ross' constraints must not only mention the point in the derivation at which the movement rule applies, but they must also mention surface structure, since they depend on whether the island-forming node is present in surface structure.

5. A somewhat different sort of case has been brought to my attention by Robin Lakoff. She observes that no single lexical item may take a *for-to* complementizer and undergo both the passive transformation and equi-NP-deletion. For example,

(24) a. Minnie desired to kick Sam in the shins.

b. *To kick Sam in the shins was desired by Minnie.

(25) a. Sam tried to escape from America.

b. *To escape from America was tried by Sam.

(26) a. Sarah expected to have a party the following day.

b. *To have a party the following day was expected by Sarah.

At first, these data might lead one to suggest that the passive transformation be constrained in some way—for example, that it be restricted so that the object NP could not be an infinitive. However, any such constraint would block the following sentence, which is perfectly grammatical:

(27) To leave at 10 o'clock would be considered by the hostess to be impolite of you.

Here the infinitival NP *to leave at 10 o'clock* has been passivized and winds up in subject position. However, Robin Lakoff's constraint does work in 27, since passive and equi-NP-deletion are governed there by different lexical items. The remote structure of 27 is Figure 1.

In the derivation, equi-NP-deletion applies on the S_2-cycle and is governed by *impolite*. Then, on the S_1-cycle, subject-raising moves *to leave at 10 o'clock* into

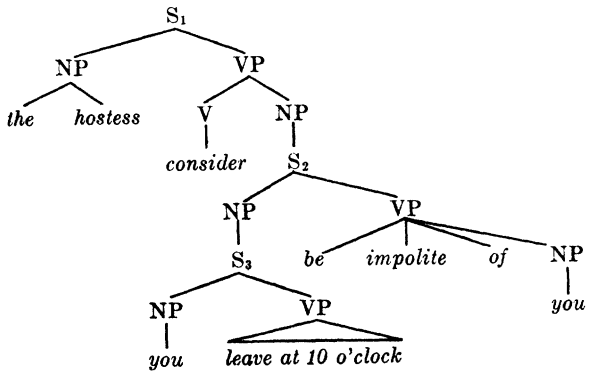


FIGURE 1

position of the derived object of *consider*. Passive then applies, and it is governed by *consider*. There is no single lexical item that governs both passive and equi-NP-deletion. Thus, it would appear that R. Lakoff's constraint is basically correct, and that passive and equi-NP-deletion may not apply to THE SAME LEXICAL ITEM. Such a constraint, in effect, keeps track of certain aspects of the derivational history of individual lexical items; thus one would expect that it would have to be formulated as a global derivational constraint. However, given my theory of exceptions (Lakoff 1965), in which the derivational history of all governed rules is kept track of on the governing lexical item, it is possible simply to state this constraint as an output condition at the end of the grammar. The reason for this is that the mechanism for keeping track of the history of governed rules in part duplicates the work of global derivational constraints. What this suggests is that the theory of exceptions, like many other additions to the theory of grammar since 1965, needs to be reformulated in terms of global derivational constraints.

6. Rules of lexical insertion are also global in nature. Consider the verb *say*, for example:

(28) a. Sam said that John was tall.
b. *Sam said for John to be tall.
c. *Sam said John to be tall.
d. *John was said to be tall by Sam.
e. John was said to be tall.

I.e., *say* may take either a *that* or a *for-to* complementizer; but if it takes a *for-to* complementizer, then it must undergo the rules of subject-raising, passive, and agent deletion. If the theory of exceptions is to be reformulated in terms of global derivational constraints, then it should be clear that verbs like *say* require global conditions on their occurrence. That is, one must specify constraints on the history of the derivations in which *say* can occur.

7. The conditions determining the occurrence of *say* happen to mention only governed rules, and so such cases could be handled by my theory of exceptions. However, Michael Geis (MS) has recently discovered a case where lexical insertion interacts with a global condition involving UNGOVERNED rules. Geis has argued persuasively that sentences like

(29) John left $\left\{\begin{matrix}\text{earlier than}\\ \text{before}\end{matrix}\right\}$ Bill left

involve an understood time adverbial, and that they are to be analysed as reduced from either 30 or 31:

(30) John left AT A TIME WHICH WAS $\left\{\begin{matrix}\text{earlier than}\\ \text{before}\end{matrix}\right\}$ THE TIME AT WHICH Bill left.

(31) THE TIME AT WHICH John left was $\left\{\begin{matrix}\text{earlier than}\\ \text{before}\end{matrix}\right\}$ THE TIME AT WHICH Bill left.

The portions of these sentences in small caps would be deleted by a rule of COMPARATIVE SIMPLIFICATION.

Geis has observed that *earlier than*, but not *before*, requires a rather interesting identity condition when the rule of comparative simplification applies:

(32) John left AT A TIME WHICH WAS {earlier than / before} THE TIME AT WHICH Sam slugged Pete.

(33) John left {*earlier than / before} Sam slugged Pete.

With *earlier than*, though not with *before*, the rule of comparative simplification can apply only if the verb on the right of the comparative is identical to the verb on the left (compare 33 and 29.) Actually, as Geis has pointed out, the facts are more complicated, and the ill-formedness of *earlier than* in 33 follows from an independently needed and even more interesting constraint. Consider the following:

(34) John left AT A TIME WHICH WAS {earlier than / before} THE TIME AT WHICH you said that Pete left.

(35) John left {earlier than / before} you said that Pete left.

Here 34 is ambiguous with both *earlier than* and *before;* the time adverb may be understood as modifying either *say* or *leave*. In 35, the same ambiguity occurs with *before* but not with *earlier than*. The sentence with *earlier than* is unambiguous, since the implicit time adverb can be understood as modifying only *leave*, not *say*. The constraint involved can be stated informally as follows:

(36) With *earlier than*, the rule of comparative simplification can apply only if the verb modified by *at a time* is identical to the verb ORIGINALLY modified by *at which*.

The word 'originally' is what is important here—since, at the point in the derivation where comparative simplification applies, *at which* has already been moved away from the verb that it originally modified. In order to find out what that verb is, one must check back into the history of the derivation, to a point prior to the application of relative clause formation. Thus 36 involves references to two separate points in a derivation, and implicitly uses the notion of 'corresponding nodes' at those two points. Consequently 36 is a global derivational constraint. What is especially curious about it is that it must mention the lexical difference between *earlier than* and *before*.

8. The examples I have given are but a small number of those known to require global derivational constraints.[7] They were chosen partly for their variety, partly at random, and partly because they could be discussed in a short paper such as this. But there is one substantive reason why examples of this kind were chosen for presentation here. Chomsky (MS b) has claimed recently that such phenomena as topic, focus, presupposition, negative- and quantifier-crossing,

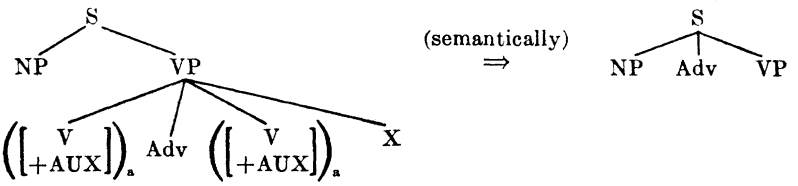
[7] A larger number are discussed in Lakoff, MS.

and identity of reference require what have been called surface structure interpretation rules. The form of these rules has never been specified, and adherents of this position have thus far given little indication of how they would specify the form of the output of such rules, that is, the form of semantic representations.[8] In 'On generative semantics', I have shown how all these phenomena could be described by global derivational constraints, and have presented a tentative formalism for doing so. All these phenomena involve the basic ingredients of global derivational constraints, i.e. conditions on configurations of corresponding nodes in non-adjacent trees in a derivation. The global rules mentioned in the generative semantics paper happen to involve semantic phenomena such as quantifiers and presuppositions, since the paper is about semantics. In the present paper, I have attempted to present a wide variety of cases NOT INVOLVING SEMANTICS, where global derivational constraints are necessary. The idea is to show that such constraints are needed on independent grounds, having nothing to do with semantics, and that a wide range of apparently disparate phenomena can be shown to be instances of the same general phenomenon. The derivational constraints involving semantics—those dealing with topic, focus, presupposition etc.—are just special cases of such rules.

As was mentioned above, some of the phenomena involving global rules are susceptible to ad hoc solutions. For example, Postal (MS) has found evidence to the effect that the deletion involved in equi-NP-deletion cannot take place at the time when the structural description of equi-NP-deletion is met, and that a pronoun has to be kept around until fairly late in the derivation before being deleted. He proposes to break equi-NP-deletion into two rules, one placing the arbitrary feature [+DOOM] on the appropriate pronoun early in the derivation, and another later deleting pronouns marked [+DOOM]. Such a use of arbitrary features does no more than code certain aspects of derivational history into transformations; they are ad hoc solutions to global syntactic phenomena. In retro-

[8] Jackendoff is one of the few adherents of this position to attempt to state a few such rules, though he has not discussed their general form. For example, in his discussion of the adverb scope rule (216), he offers Figure 2 as 'one way to state the rule'.

(49) (Adverb Scope Rule)



Conditions: If *a* present, obligatory, otherwise optional.

FIGURE 2

Note that the output of the rule is given in the same form as a SYNTACTIC PHRASE-MARKER, with the same type of hierarchial structure and even the same node labels. If the output of such 'semantic interpretation rules' are taken to be semantic representations, and if Jackendoff's example is taken seriously, then semantic representations, for him, must be given in terms of syntactic phrase-markers. But this is exactly the major claim of generative semantics.

spect, it seems clear that Postal's rule of [+DOOM] deletion should be stated as a global derivational constraint. Solutions such as the early introduction and late deletion of arbitrary markings in one case, constraints on movement transformations in another case, surface interpretation rules in still another case, and elsewhere anaphoric island constraints—all such ad hoc solutions are of limited interest. What is important is the general solution. All these are instances of global derivational constraints.

It should be obvious that general solutions are preferable to lists of ad hoc solutions. However, since this is not obvious to all contemporary linguists, some comment is required. One of the linguists who has most vehemently questioned the preferability of general solutions over lists of ad hoc solutions in such cases is Noam Chomsky. In his paper 'Credo 1969' at the 1969 Texas Conference on the Goals of Linguistic Theory,[9] Chomsky correctly pointed out that all the derivational constraints proposed to date were of somewhat different forms. This is not surprising, since if they were all of exactly the same form, they would be the same rule. Ignoring their similarities, Chomsky concluded that there was no reason to consider derivational constraints as a single unified phenomenon. For each different case he would propose not a different rule, but a different KIND of rule, adding a new type of theoretical apparatus to the theory of grammar for each new global rule discovered.

It is sad and strange to encounter such remarks. If such criteria were applied to transformational rules, they would wipe out the whole idea of transformations. After all, the passive transformation is of a very different form from WH-movement; the latter has a variable, the former does not. Conjunction reduction is another very different type of rule, and so is imperative formation, etc. There are many different types of transformational rules: some perform copying operations, some perform chopping operations; some involve deletions, others involve movements; some deletion rules delete constituents under identity, while others delete constants. If one applied Chomsky's argument concerning derivational constraints to transformations, there would be no unified phenomenon of transformational grammar. Only a lot of different types of rules of different forms would remain, each an ad hoc addition to the theory of phrase structure grammar.

But of course, there is a very good reason to believe that transformations do exist. As Chomsky himself put it (1964:131, fn. 28): 'For each particular case, some ad hoc adjustment or principle can be employed to cope with the problem. But a general alternative to the transformational approach to this matter has not yet been suggested.' There is a very good reason for believing that transformations are a unified phenomenon: they have certain things in common, and they provide a general solution to a wide range of problems. What transformations have in common is that they state well-formedness conditions on configurations of corresponding nodes in two adjacent trees. Global rules have at least as much in common: they state well-formedness conditions on configurations of corresponding nodes in non-adjacent trees.

[9] At the time this paper was presented, Chomsky's Texas Conference paper had not yet appeared in written form. However, it may be available on tape from the University of Texas Linguistics Department.

It seems to me beyond question that global rules exist as a unified phenomenon. If so, then we require a theory of global grammar. This is as much an innovation over transformational grammar as transformational grammar is over phrase structure grammar. But even more is involved. Suppose it is correct to suggest that phenomena such as topicalization, presupposition, quantifier-crossing, etc., are to be handled by global derivational constraints, which are independently motivated for cases not involving semantics.[10] Since global derivational constraints are constraints involving pairs (or perhaps sometimes triples) of SYNTACTIC PHRASE-MARKERS, such a proposal would require that semantic representations be given in the same terms as syntactic phrase markers. This is exactly what is claimed by the theory of generative semantics. Thus, the issue of whether global rules constitute a unified phenomenon goes far beyond the question of whether they provide a necessary new mode of linguistic description. The issue at stake ultimately is the nature of semantic representation.

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[10] Note that semantic interpretation rules could not handle the phenomena discussed in this paper, since such phenomena do not involve semantics. Global rules are necessary, whatever position one takes on the relative merits of generative and interpretive semantics. However, such rules make surface interpretation rules unnecessary, since they will handle the same range of phenomena for which such rules were proposed.

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