

# Acceptable conclusions from unacceptable ambiguity

D. Terence Langendoen  
*City University of New York Graduate Center*

Hankamer (1973) has proposed the following convention as a hypothesis of universal grammar.

- (1) Structural Recoverability Condition (SRC)  
Rules involving variables are universally subject to a derivational condition which prevents them from applying in such a way as to introduce structural ambiguity.

By subjecting only rules involving variables to the condition, Hankamer's proposal is a refinement of a principle originally proposed by Klima (1970), and discussed at length in Ruwet (1973), prohibiting the transformational introduction of structural ambiguity in general, a principle dubbed the Constraint against Relational Ambiguity Principle (CRAP) in Langendoen, Kalish-Landon, and Dore (1974). Hankamer's refinement is surely

I thank Constantine Kaniklidis and Barbara Lust for helpful discussions on many points of this paper.

in the right direction, because many of our criticisms of CRAP do not go through against SRC, and Hankamer himself gives an effective argument against the cases covered by CRAP but not covered by SRC (pp. 60-63).<sup>1</sup> It is useful, therefore, to put Hankamer's hypothesis to the test, since its correctness bears crucially on the issue of whether transderivational constraints should be a part of the theory of grammar.

Hankamer considers two types of rules involving variables: deletion rules and movement ("chopping") rules. (If other types of rules, such as "feature changing" rules, also involve variables, Hankamer speculates that they too would participate in SRC (p. 63).) He discusses one variable deletion rule at length, Gapping, and derives the bulk of his motivation for SRC from consideration of that rule. Gapping, as Hankamer effectively argues, is not limited to cases in which material is deleted from the middle of a conjunct, but is responsible for all deletions under identity in conjuncts, in which Regrouping has not applied. Thus Gapping is allowed to delete nonmedial (peripheral) elements as well as medial ones, and for this reason I shall refer to the rule in question henceforth not as Gapping, but as Coordinate Deletion (CD; the term is due to Koutsoudas (1971)). Hankamer goes on to argue that in case a given structure could be viewed as the output of CD applied to two or more different inputs, it will in fact only be the result of applying the rule to one of those inputs, namely, the one in which the deleted material constitutes the beginning (the left periphery) of the conjunct(s) to which it is applied (p. 29). The following illustration (Hankamer's example (38)) is typical of the many different kinds of examples he considers. (I follow Hankamer's notation of indicating a permitted application of CD by enclosing the deleted material in brackets preceded by a check mark, and a disallowed application of that rule by enclosing the deleted material in brackets preceded by an asterisk; the long dash indicates the first conjunct.)

- (2) a. Max gave Sally a nickel, and Harvey a dime.  
 b. \_\_\_\_\_ and ✓ [Max gave] Harvey a dime.  
 c. \_\_\_\_\_ and Harvey \*[gave Sally] a dime.

Within a theory that does not permit transderivational

<sup>1</sup> Wherever page references alone are given, they refer to pages in Hankamer (1973).

constraints, in particular within standard theory, it would appear that some sort of condition on CD is required to prevent its application to (2c) to derive (2a). From a consideration of various of the sentence types in which CD would have to be blocked, Hankamer concludes that it may not even be possible to specify coherently all of the different sorts of conditions that it would be necessary to impose on CD. Moreover, even if they could be specified, there would be no explanation, within such a theory, for the existence of such a large body of apparently unrelated conditions. On the other hand, if transderivational constraints are permitted in linguistic theory, one could eliminate this collection of conditions in favor of a single, unified generalization, namely SRC.

This move, however, backfires. First, recall that SRC, by itself, merely prohibits the introduction of structural ambiguity by rules involving variables; it does not indicate how this prohibition is to be effected. One still needs, for each rule, a condition governing which derivations involving its application are to be allowed and which are to be blocked. As we have already seen, Hankamer asserts that when CD would introduce structural ambiguity, just that derivation in which CD deletes left-peripheral material is allowed. But sometimes more than just left-peripheral material can be deleted by permitted applications of CD, as is illustrated by Hankamer's own example (42) (repeated here as (3)).

- (3) a. Max wanted Ted to persuade Alex to get lost, and Walt, Ira.  
 b. \_\_\_\_\_ and Walt \*[wanted] Ira [to persuade Alex to get lost].  
 c. \_\_\_\_\_ and Walt \*[wanted Ted to persuade] Ira [to get lost].  
 d. \_\_\_\_\_ and ✓ [Max wanted] Walt [to persuade] Ira [to get lost].

Suppose, however, there is more than one derivation in which left-peripheral material could be deleted by CD. In that case, the one in which CD deletes no nonleft-peripheral string that contains NP is allowed, as is illustrated in examples like those in Hankamer's (64)-(67); consider (4).

- (4) a. Max sent Sally the messenger last week, and Susan yesterday.

- b. \_\_\_\_ and ✓ [Max sent Sally] Susan yesterday.  
 c. \_\_\_\_ and \*[Max sent] Susan [the messenger] yesterday.

A more dramatic illustration of this point is provided in (5).

- (5) a. Max wanted Ted to persuade Alex to see Mary, and Walt, Ira.  
 b. \_\_\_\_ and Walt \*[wanted] Ira [to persuade Alex to see Mary].  
 c. \_\_\_\_ and Walt \*[wanted Ted to persuade] Ira [to see Mary].  
 d. \_\_\_\_ and Walt \*[wanted Ted to persuade Alex to see] Ira.  
 e. \_\_\_\_ and \*[Max wanted] Walt [to persuade] Ira [to see Mary].  
 f. \_\_\_\_ and \*[Max wanted] Walt [to persuade Alex to see] Ira.  
 g. \_\_\_\_ and ✓ [Max wanted Ted to persuade ] Walt [to see] Ira.

In (5e, f, g), the deleted material includes left-peripheral material, yet only (5g) is grammatical ((5f), for some reason, does not seem quite as unacceptable as (5e); I suspect this has to do with the complexity of the examples). What distinguishes (5e, f) from (5g) is that the former contain NPs in the nonleft-peripheral material to be deleted, and the latter does not.

Thus, Hankamer is in the position of claiming that the applicability of CD is governed by SRC and the condition that CD cannot apply so as to delete nonleft-peripheral strings that contain NP. Let us call this latter condition the Nonleft-peripheral NP Condition (NLPNPC). But now, if we go back and examine all of Hankamer's examples, such as (2), that lead up to his positing SRC for CD, we observe that they *all* obey NLPNPC. For example, (2b) does not involve the deletion of a nonleft-peripheral string containing NP, while (2c) does. Thus NLPNPC, by itself (i.e., without SRC), handles all of the cases considered by Hankamer, whereas the converse is not true: SRC (as we have already seen) alone cannot handle all of those cases. Therefore NLPNPC, not SRC, provides the more significant generalization concerning the applicability of CD. Moreover, since NLPNPC, unlike SRC, is a condition on a transformation, and as such is expressible in standard theory, it is also to be preferred on the grounds that its introduction does not increase

the power of the theory of grammar (I return to this point later).

Since NLPNPC is more general than SRC in limiting the applicability of CD, we would expect it to be able to block applications of CD even in cases where structural ambiguity is not introduced. And, indeed, such is the case. Consider first examples (6)–(8), which illustrate the point that CD cannot delete just an object NP or PP.

- (6) Jackendoff despises bassoonists and McCawley admires \*[bassoonists].  
 (7) Show Rafael that you love him and tell \*[Rafael] that he's wonderful.  
 (8) Leave the car in the garage and put the bus \*[in the garage].

CD is blocked in these cases, not because there are other derivations of the reduced sentences involving CD, but because NLPNPC is violated. Second, NLPNPC predicts that CD may delete sentence-final adverbs not containing NP, but not those that do. As (9)–(10) show, this prediction is borne out.

- (9) Laurie washed the car yesterday and ✓ [Laurie] mowed the lawn [yesterday].  
 (10) Laurie washed the car in the early afternoon and \*[Laurie] mowed the lawn [in the early afternoon].

Thus, NLPNPC receives very strong independent support.

Furthermore, in section 1.4, Hankamer in effect appeals to NLPNPC to account for what he takes to be apparent counterexamples to SRC. They are, however, real counterexamples to SRC, and apparent counterexamples only to NLPNPC. To see this, consider how Hankamer tries to explain away the counterexample in (11) (modeled on Hankamer's example (89)), in which CD *does* introduce structural ambiguity.

- (11) a. Marlene told me that Arnold left, and Dave that Ilse stayed.  
 b. \_\_\_\_ and Dave ✓ [told me] that Ilse stayed.  
 c. \_\_\_\_ and ✓ [Marlene told] Dave that Ilse stayed.

Concerning such counterexamples, Hankamer says (p. 35):

This type of exception to [SRC] would disappear if there were a cliticization rule in English, whereby pronouns in immediate post-verbal position become cliticized to the verb.

By this, Hankamer apparently means that the object pronoun *me* in (11) is not to be analyzed as NP for purposes of limiting the applicability of CD. This, however, can only be interpreted as a way of preventing NLPNPC from blocking the derivation of (11a) from (11b), not of preventing SRC from doing so. As far as SRC is concerned, (11) is a counterexample, even if object pronouns in immediate postverbal position in English were to be transformed into carrots.

Moreover, if object pronouns in English are not NPs, how is NLPNPC to block the applicability of CD to (12)?

- (12) Sam will sell me steaks and \*[Sam] might buy [me] roasts.

To account properly for the fact that CD is applicable in (11b) but not in (12), NLPNPC must be modified so as to allow application of CD to delete nonleft-peripheral strings that contain both a verb and its immediately following clitic pronoun but no other NPs.

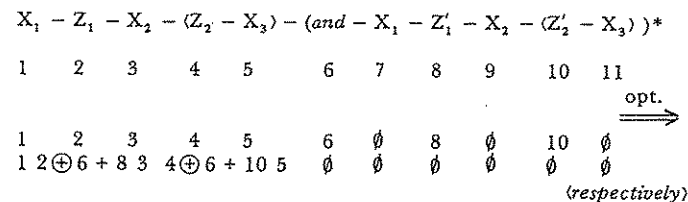
This completes our reanalysis of CD. Before we can give formal statement of the rule, however, we must show how to handle another class of apparent counterexamples, namely, those derivations in which the application of CD would result in the reduction of noninitial conjuncts to a single constituent other than VP. As (9) shows, reduction to VP alone is permitted. In all other cases, the remaining single constituents must be regrouped, as (13)-(15) show.

- (13) a. Buzhardt objected strenuously and St. Clair \*[objected strenuously].  
 b. [NP Buzhardt and St. Clair] NP objected strenuously.  
 (14) a. I admire Solzhenitsyn and \*[I admire] Sakharov.  
 b. I admire [NP Solzhenitsyn and Sakharov] NP.  
 (15) a. We went to the country last week and \*[we went to the country] last month.  
 b. We went to the country [AdvP last week and last month] AdvP.

Assuming, with Hankamer and with Harries (1973), and again Ross (1968, 1970), Tai (1969, 1971), and Koutsoudas (1971)

that CD (or Gapping) always operates on noninitial conjuncts and that it does so in one step at its point of application, and assuming a theory, such as standard theory, that disallows global rules, we must conclude that Regrouping either precedes or applies simultaneously with CD.<sup>2</sup> Since the structural analyses of the two rules can be collapsed and since there are no rules known to intervene between them, we present them together, formally, under the heading Conjunction Reduction.<sup>3</sup>

(16) Conjunction Reduction (CR)



<sup>2</sup>If CD precedes Regrouping and the former operates only on noninitial conjuncts then, in the case of (13) and (14), one would be unable to tell which NP (subject or object) in the first conjunction is the regrouping site. This may be obviated either by making Regrouping a global rule, so that it has access to the stage in the derivation immediately prior to CD, or by formulating CD so as to delete into left conjuncts when the nonidentical material is on a right branch and into right conjuncts when the nonidentical material is on a left branch, and by requiring CD to reapply to its own output. I reject the former as resulting in needless increased power in the theory of grammar, and the latter on simplicity grounds.

<sup>3</sup>Circled plus-signs indicate Chomsky-adjunction. The asterisk on the right conjunct indicates iteration. Option A in the structural change is CD, option B is Regrouping. The angled brackets are to be read so that *respectively* is added transformationally just in case Regrouping is applied and two categories are simultaneously regrouped. To complete this account of CR, we would have to add another operation, namely, that of extracting a single identical rightmost constituent (what is sometimes called Node Raising (NR)). NR operates independently of CD and Regrouping, to derive (ib) from (ia).

- (i) a. [S [S John built [NP the tower] NP] S] and [S Harry destroyed [NP the tower.] NP] S  
 b. [S [S John built] S] and [S Harry destroyed] S [NP the tower.] NP] S

It operates on the output of CD to derive (iib) from (iia).

- (ii) a. John built the tower and [John] then destroyed the tower.  
 b. John built and then destroyed the tower.

NR also operates on conjoined noun phrases (which may themselves result from Regrouping), as illustrated in (iii); note that the raised noun remains singular, with the verb showing plural agreement.

- (iii) a. [NP [NP A young [N man] N] NP] and [NP an old [N man] N] NP] NP are here.  
 b. [NP [NP A young] NP] and [NP an old] NP [N man] N] NP are here.

It is beyond the scope of this paper to provide an adequate explicit statement of NR.

*Conditions:*

- (1) 2 and 8; 4 and 10 are the same major category, and  $2 \neq 8$ ;  $4 \neq 10$ .
- (2) Option A is precluded if:
  - a.  $4 \sim 5 = \emptyset$  and 2 is not VP, or
  - b. 3 or 5 contain NP other than a clitic pronoun adjoined to its V.

Condition (1) is familiar from all previous discussions of CR, for example Chomsky (1965, p. 212), Schane (1966), Ross (1968), and Hankamer (1971) to name a few. Condition (2a) specifies that only Regrouping (option B) is permitted if the reduction of conjunctions is to a single category other than VP. Condition (2b) is NLPNPC.

To summarize: Close examination of Hankamer's argument for a transderivational constraint on CD to eliminate derivations that would result in structural ambiguity reveals that that argument fails, and that there is an alternative analysis within standard theory that not only accounts for the facts noted by Hankamer, but many others as well. Therefore, his argument for SRC, based on CD, must be rejected. We turn now to his other arguments for SRC, based on other variable deletion rules, and on chopping rules. These arguments are derived from cases from a variety of languages, including, besides English, Japanese, Turkish, Navaho, French and Slovenian. His discussion of the non-English cases, however, is inconclusive, and fails to provide real support for SRC.<sup>4</sup> I therefore restrict myself to consideration of his English cases.

Most of the English cases discussed, it turns out, involve the interaction of variable deletion and movement rules with the rule of Dative Movement. For example, Hankamer considers the interaction of this rule with the variable deletion rules of Comparative Deletion and "Ready Socks" (pp. 42-44),<sup>5</sup> and the chopping rules of Relativization, Question Movement, and Topicalization (pp. 51-53). Concerning the latter interaction, Hankamer argues that any derivation involving the application of a

<sup>4</sup>Hankamer never shows, for example, that the conditions on the rules discussed in these languages cannot straightforwardly be stated in terms of standard theory. His only objection to such statements is that they "would merely state the facts" (p. 51). I cannot take this objection very seriously.

<sup>5</sup>It is not clear to me why these rules are called variable deletion rules; they both seem to involve the deletion of a constituent, namely NP. This is of no consequence, however, since one can reformulate the problem to be whether SRC is appropriate to constituent-deletion rules.

chopping rule to an NP affected by Dative Movement (that is, either the direct or the indirect object) must be blocked. Hankamer's examples (128)-(129) and (133)-(134), given here as (17)-(20), illustrate this restriction (I use "#" to indicate 'unacceptable to Hankamer').

- (17) #Sally is a girl I would give my last dime.
- (18) #The bastard I lent my pipe tool never brought it back.
- (19) #The pipe tool I sold Jeremy was rusty.
- (20) #The book I was reading Susan is on the table.

These judgments confirm SRC, he argues, since application of any of the chopping rules in English to a direct or indirect object in a sentence in which Dative Movement has applied would introduce structural ambiguity. Concerning (19)-(20), Hankamer admits "the judgments are delicate" (p. 52) and points out in footnote 18 (p. 53) that he has learned from B. Schapiro that some people find sentences like (19)-(20) acceptable. He need not have had to consult Schapiro on this point, however, if he had examined the transformational literature on Dative Movement, such as Fillmore (1965), Kuroda (1968), and Jakendoff and Culicover (1971), in which such sentences are uniformly considered acceptable. As Hankamer points out, the acceptability of (19) and (20) is consistent with SRC, as long as (17) and (18) remain unacceptable, since one need only add to the SRC that, for some English speakers, in the case of chopping rules applying to the configuration V NP NP, only the peripheral NP (the direct object) can be chopped.

Unfortunately, Hankamer has mistaken what Schapiro told him. What Schapiro actually found was that some people (himself included) accept only sentences like (19) and (20), but also sentences like (17) and (18); it never occurred to Schapiro that anyone would not accept the former type of sentence. In a carefully controlled study, Langendoen, Kalish-Landon, and Dore (1974) found exactly the same thing as Schapiro; we go on to argue that in fact all sentences like (17)-(20) are grammatical, and that the unacceptability of (19)-(20) for those that find them unacceptable is due to perceptual principles. But regardless of the success of our arguments in support of this contention, the existence of a dialect of English in which chopping rules introduce acceptable structural ambiguity is sufficient to refute SRC.

Concerning Hankamer's treatment of the interaction of Dative Movement and the variable deletion rules of Comparative Deletion and "Ready Socks," much the same point can be made. Hankamer contends that the deletions indicated in (21) and (22) (his examples (97) and (99)), result in unacceptability.

- (21) Jack persuaded more millionaires to go on diets than Harry sold #[millionaires] Cadillacs.  
 (22) Jack stole more Cadillacs than Harry sold millionaires #[Cadillacs].

In my judgment, whatever lack of acceptability these examples have is due to lack of parallelism between the two clauses, a performance matter, rather than to some degree of ungrammaticality due to the inapplicability of Comparative Deletion whenever structural ambiguity would be introduced (see also pp. 63-64, where Hankamer acknowledges the possibility effects of lack of parallelism on acceptability in similar cases). To see this, compare (21) and (22) with the following examples.

- (23) a. Jack sold more millionaires Cadillacs than Fred gave [millionaires] Continentals.  
 b. Jack sold more millionaires Cadillacs than Fred gave Continentals to ?[millionaires].  
 (24) a. Jack sold millionaires more Cadillacs than Fred gave the poor [Cadillacs].  
 b. Jack sold millionaires more Cadillacs than Fred gave ?[Cadillacs] to the poor.

Thus, I conclude that there is no blocking of Comparative Deletion affecting direct or indirect objects in sentences in which those NPs are affected by Dative Movement, again disconfirming SRC.

Hankamer illustrates the Dative Movement-"Ready Socks" Interaction with the following examples (his (104)-(105)).

- (25) These socks are ready for you to take Harry #[these socks].  
 (26) Harry is ready for you to take #[Harry] these socks.

Whatever unacceptability these examples have, however, is due not to the inapplicability of Ready Socks, but to the choice of the main verb in the infinitive. By substituting for *take* a verb more prone to Dative Movement, such as *bring* or *give*, one

improves the acceptability of examples like (24) and (25). Thus this case, too, rather than confirming SRC, disconfirms it.

Hankamer's remaining examples in English involve the application of the rightward chopping rule of Heavy-NP Shift. He argues that SRC is needed to account for the contrast in acceptability between (27) and (28), which are analogous to his examples (151)-(155).

- (27) \*We expect to be executed everyone who was arrested in front of the palace.  
 (28) We sent to be executed everyone who was arrested in front of the palace.

Concerning this contrast, Hankamer says (p. 55):

Note that the inability of the immediate postverbal NP to undergo Heavy-NP Shift correlates with the ability of the verb involved to have the subject of a sentence embedded as its object deleted by Equi. All Equi verbs have the restriction, all non-Equi verbs lack it.

This is a correlation which can only be stated in transderivational terms. Heavy-NP Shift is blocked just in case its output is a sentence which looks like a product of Equi with an extra NP tacked on at the end.

This statement is extraordinary on two accounts. First, the "terms" of the proposed statement are hardly transderivational, since, as Hankamer admits (p. 56), there is no derivation in English in which one generates a sentence with an extra NP tacked on at the end. We have here an instance of a proposed constraint, call it transnonderivational, that blocks derivations on the basis of derivations of ungrammatical strings. Since the latter do not exist, neither can the constraint. Second, Hankamer states in the first part of the passage just quoted a condition on the applicability of Heavy-NP Shift that is straightforwardly expressible in standard theory. Namely, Heavy-NP Shift is inapplicable in case the verb preceding the NP to be shifted is marked as requiring Equi to apply when the subject of the object complement is identical to its own subject. Why Hankamer believes that the correlation can only be stated in terms that transcend standard theory escapes me.<sup>6</sup>

<sup>6</sup>The possibility remains that (27) is grammatical, but unacceptable because it contains a perceptual "garden path." Such an explanation would be correct for a sentence like (i)

(i) ?We expect to be executed will be no fun.

Even if one could somehow get around the objection just raised, there is a further problem that is raised by the fact that Heavy-NP Shift is blocked even if the part preceding the shifted NP is not by itself a grammatical sentence, as (29) illustrates.

- (29) \*You can't expect to pay you every one who borrows money and promises to pay you back.

A similar case arises in connection with CD, which Hankamer alleges may be blocked by SRC even though the nonblocked application of CD is in a "derivation" that results in an ungrammatical string. This is illustrated in (30) (Hankamer's (52)).

- (30) a. \*Jack asked Mike to wash himself, and Sue to shave himself.  
 b. \*\_\_\_\_\_ and ✓ [Jack asked] Sue to shave himself.  
 c. \_\_\_\_\_ and Sue \*[asked Jack] to shave himself.

Again, since there is no derivation of (30b), one can hardly call the principle that blocks (30c) transderivational. The existence of other derivations (even of ungrammatical strings) is simply irrelevant to the correct account of the ungrammaticality of sentences like (29) and (30).

This concludes my examination of Hankamer's empirically based arguments for SRC. However, Hankamer in section 2 of his paper gives a number of purely theoretical arguments for SRC as well, based on such notions as recoverability of deletion, the power of linguistic theory, and the status of perceptual strategies. Suppose, then, for purposes of discussion, the empirically based arguments did not weigh so heavily against SRC, so that if the theoretical arguments for it were strong, we might be led to consider it seriously as a hypothesis of universal grammar. Unfortunately, Hankamer's theoretically based arguments backfire as badly as do his empirically based ones.

Consider first Hankamer's argument concerning the notion of recoverability of deletion. He first points out that Chomsky's proposal (1965, pp. 144-145) concerning recoverability is inadequate, because it does not permit the existence of variable deletion rules. The question then becomes how best to extend Chomsky's proposal to deal with variable deletion rules. One way to do it in terms compatible with standard theory is to specify that the variable strings that act as deleter and deletee be

nondistinct (as defined in Chomsky (1965, p. 182)), and be presented as terms in a fixed position in the structural analyses of such transformations, as is the case in my version of CD in (16). Hankamer's suggestion is that SRC is needed to capture the notion of recoverability for such deletions. First of all, he asks, what is the notion of recoverability? Hankamer defines it as follows (p. 30).

[A] deletion is recoverable if, given only the statement of the rule effecting the deletion and the output of a particular application of the rule, the input to the rule can be uniquely determined. In order to meet this condition, a deletion rule would have to be so formulated or so constrained that it could never map two distinct inputs into the same output. Any rule which so neutralized the distinction between two different underlying structures would introduce ambiguity, and a deletion which introduces ambiguity is not recoverable.

Hankamer goes on to argue that if deletions are recoverable in this sense, and if it is not possible to impose a set of restrictions on such rules so as to insure recoverability, then "it must be because there are independent constraints which block these rules when there is a possibility of nonrecoverable application" (p. 40). This argument does not go through, however, because the first premise is false. I have already considered a case, example (11), in which Hankamer himself must admit that a variable deletion rule applies nonrecoverably in his sense. The fact that constituent-deletion rules can apply nonrecoverably (in Hankamer's sense) in cases where "sloppy identity" is sufficient is another instance in which the first premise of the argument is falsified. Thus, Hankamer's notion of recoverability cannot be what is meant when we say that deletion rules must satisfy a condition on recoverability. A much weaker condition, such as the alternative suggested above, must be what is required, and SRC receives, accordingly, no support from considerations of recoverability of deletion.

Hankamer also tries to show that the incorporation of a transderivational condition like SRC, rather than broadening the scope of the theory of transformational grammar, in fact narrows it. He says the following (p. 37).

Note that the proposed condition [SRC] has the effect of *reducing* [original emphasis] the number of possible derivations; that is, it reduces the generative capacity of transformational grammars.

Here, Hankamer reveals himself as totally confused about the meaning of reducing the generative capacity of a theory of grammar. That notion has nothing to do with the number of possible derivations in a grammar; generative capacity, rather, is defined as the class of languages that may be generated by all the grammars expressible in a given theory. The generative capacity of transformational grammars without SRC includes all those languages in which application of variable deletion rules introduces structural ambiguity, and includes no languages in which application of such rules fails to do so (except by accident). On the other hand, transformational grammars with SRC includes all those languages in which variable deletion rules fail to introduce structural ambiguity by virtue of the filtering effect of SRC, and no languages in which application of such rules does introduce structural ambiguity. Thus, the generative capacity of transformational grammars with SRC is distinct from, but not comparable with, the generative capacity of transformational grammars without SRC.<sup>7</sup> Hence, SRC receives no support from consideration of generative capacity.

Finally, there is the matter of the difference between rules of grammar and rules of performance, such as perceptual strategies. Here again, I quote Hankamer (p. 36, fn. 12).

[SRC], it should be noted, represents an explicit formulation of what has been called a "perceptual strategy." There has been some speculation about perceptual strategies and the role such devices might play in determining interpretations of ambiguous sentences and levels of acceptability. . . . One reason for the general neglect of this phenomenon is no doubt the widespread assumption that perceptual strategies belong in some as yet unexplored "performance model" and have nothing to do with "competence." Yet I know of no empirical test which could tell us whether a given sentence. . . is actually ungrammatical or only "unacceptable for performance reasons."

Until such a test is suggested, it is vacuous to attribute some cases of ungrammaticality to violations of rules "in the grammar" and others to "performance constraints."

Concerning this passage, I observe first of all that SRC is not a formulation of a perceptual strategy. A perceptual strategy is a rule that listeners employ as they hear a sentence, in order to assign it a representation (e.g., of its meaning). SRC cannot possibly be such a rule, since it is not a principle for

constructing linguistic representations in real-time. Now it is certainly true that listeners generally do not notice structural ambiguities when presented with sentences that are structurally ambiguous, but that fact is certainly not due to their applying a rule that says in effect "don't notice structural ambiguity"; rather it is a by-product of the application of applying *bona fide* perceptual strategies. Take, for example, the set of strategies discussed in Langendoen (in press) by which the structurally ambiguous sentence (31a) is heard only as (31b), never as (31c).

- (31) a. Several of my children's friends are here.  
 b. [<sub>NP</sub> Several [<sub>PP</sub> of [<sub>NP</sub> [<sub>Det</sub> [<sub>NP</sub> my children] <sub>NP</sub>'s] <sub>Det</sub> friends] <sub>NP</sub> ] <sub>PP</sub> ] <sub>NP</sub> are here.  
 c. [<sub>NP</sub> [<sub>Det</sub> [<sub>NP</sub> Several [<sub>PP</sub> of [<sub>NP</sub> my children ] <sub>NP</sub> ] <sub>PP</sub> ] <sub>NP</sub>'s ] <sub>Det</sub> friends ] <sub>NP</sub> are here.

The apparent unambiguity of (31a) is due to the particular way that the perceptual parsing strategies in English work; it is not due to the application of a pseudostrategy that instructs listeners not to construct a left-branching parsing of a string of a certain sort when that string can also receive a right-branching parsing.

Second, concerning Hankamer's requirement of an "empirical test" for the difference between grammaticality and acceptability before any decision can be made about how to classify sentences along these dimensions, it should be pointed out that this amounts to the requirement of a discovery procedure. Short of lapsing into empiricism, there can be no discovery procedure for the distinction; what we have, rather, is a much weaker decision procedure for the distinction, having to do with whether it is possible to formulate independently motivated performance rules (to handle whatever cases we happen to be dealing with), and with the question of whether the incorporation of the rules that handle the phenomena in the grammar results in a weakening of the theory underlying it (see Langendoen, Kalish-Landon, and Dore (1974) for further discussion). Hankamer's own suggestion of a possible discovery procedure, namely that judgments that reflect acceptability are subject of semantic and morphological manipulation, whereas judgments that reflect grammaticality are absolute, certainly does not work, as one can convince oneself by considering a grammatical, but unacceptable, sentence with degree 100 of

<sup>7</sup>I thank G. Sanders for clarifying my thinking on this point.



center-embedding. Thus, SRC receives no support from the consideration of perceptual strategies, either.<sup>8</sup>

To summarize the findings of our investigation of Hankamer's theoretically based arguments for SRC, we see that they fare no better than his empirically based arguments. There is no way that SRC can be justified as a principle of universal grammar, and therefore the hypothesis that it is such a principle is disconfirmed.

<sup>8</sup>In Langendoen (1972), I suggested that the unacceptability of sentences like (2c), (3a, b), (4c), (5b, c, d, e, f), etc., is due to the difficulty of interpreting such sentences using perceptual strategies for recovering deleted material, rather than to ungrammaticality as a result of violating condition (2b) on CR. I changed my mind on this matter, because I found I could express the restriction straightforwardly in terms of grammar (a restriction that also generalized to such cases as (6)-(8), which can only be out for grammatical reasons), and I could not see any straightforward characterization in terms of perceptual strategies. This does not mean, of course, that some such characterization cannot be found which is superior to the formulation given in grammatical terms. In support of the contention that the phenomena are to be described outside the grammar, S. Greenbaum (personal communication) argues that the acceptability judgments in many of these cases are not as clear-cut as Hankamer and I make them out to be, and that the variation may be explainable on extralinguistic grounds. That may be so, but it does seem clear that the examples are not fully acceptable when contextual support is not provided. Greenbaum also correctly notes a difficulty with NLPNPC, which may cast some doubt on its general validity, namely, that CD is also blocked if a nonleft-peripheral string consisting of a manner adverbial (not containing NP, at least in surface structure) is deleted. This is illustrated in (i).

- (i) a. Mary entered the room carefully and turned on the light.  
 b. \_\_\_\_\_ and [Mary] turned on the light [Ø].  
 c. \_\_\_\_\_ and \*[Mary] turned on the light [carefully].

One might want to argue that at the point at which CD applies, *carefully* is still represented as *in a careful manner* (i.e., as a string that contains NP; such a solution would of course be feasible only if *yesterday* does not receive the analysis *the day before today* and if CD is not the last rule in the syntax, contra Koutsoudas (1971)). Alternatively, one could add various types of adverb constructions to the list of constituents that, if nonleft-peripheral, cannot be deleted by CD. Without much further detailed investigation, this question cannot be decided one way or the other. See also Kuno (forthcoming).

## REFERENCES

- Chomsky, N. (1965) *Aspects of the Theory of Syntax*. Cambridge, Mass.: M.I.T. Press.  
 Fillmore, C. J. (1965) *Indirect Object Constructions and the Ordering of Transformations*. The Hague: Mouton.  
 Hankamer, J. (1971) "Constraints on deletion in syntax." Unpublished doctoral dissertation. New Haven, Conn.: Yale University.  
 \_\_\_\_\_ (1973) "Unacceptable ambiguity." *Linguistic Inquiry*, 4: 17-68.

- Harries, H. (1973) "Coordination reduction." *Stanford University Working Papers on Language Universals*, 11: 139-209.  
 Jackendoff, R. and P. Culicover (1971) "A reconsideration of dative movements." *Foundations of Language*, 7: 397-412.  
 Klima, E. S. (1970) "Regulatory devices against functional ambiguity." Unpublished paper.  
 Koutsoudas, A. (1971) "Gapping, conjunction reduction, and coordinate deletion." *Foundations of Language*, 7: 337-386.  
 Kuno, S. (forthcoming) "Gapping: A functional analysis." *Linguistic Inquiry*.  
 Kuroda, S-Y. (1968) Review of Fillmore (1965). *Language*, 44: 374-378.  
 Langendoen, D. T. (1972) "The problem of grammaticality." *Peabody Journal of Education*, 50: 20-23.  
 \_\_\_\_\_ (in press) "A case of apparent ungrammaticality," Bever, T. G., J. Katz, and D. T. Langendoen (eds.), *An Integrated Theory of Linguistic Ability*. New York: T. Y. Crowell.  
 \_\_\_\_\_, N. Kalish-Landon, and J. Dore (1974) "Dative questions: A study in the relation of acceptability to grammaticality of an English sentence type." *Cognition*, 2: 451-478.  
 Ross, J. R. (1968) "Constraints on variables in syntax." Mimeographed. Indiana University Linguistics Club, Bloomington.  
 \_\_\_\_\_ (1970) Gapping and the order of constituents," in Bierwisch, M. and K. Heidolph (eds.), *Progress in Linguistics*, pp. 249-259. The Hague: Mouton.  
 Ruwet, N. (1973) "How to deal with syntactic irregularities: Conditions on transformations or perceptual strategies?" in Kiefer, F. and N. Ruwet (eds.), *Generative Grammar in Europe*, pp. 419-444. Dordrecht, The Netherlands: D. Reidel Publishing Co.  
 Schane, S. (1966) *A Schema for Sentence Coordination*. Bedford, Mass.: MITRE Corp.  
 Tai, J. (1969) "Coordination reduction." Unpublished doctoral dissertation, Bloomington: Indiana University.  
 \_\_\_\_\_ (1971) "Identity deletion and regrouping in coordinate structures," in *Papers from the Seventh Regional Meeting, Chicago Linguistic Society*, pp. 264-273. Department of Linguistics, University of Chicago, Chicago, Ill.