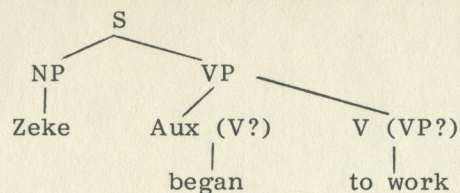# 1

THE TWO VERBS BEGIN

David Perlmutter

Introduction. Perlmutter's 'The two verbs *begin*' is a good example of classic syntactic argumentation. He wishes to show that *begin* must occur in two sorts of deep structures, with two very different sorts of subject. Of course, there should be a difference in semantic interpretation correlated with this difference in deep structure, and for *begin* no such difference is ever discussed. We raise this issue in the questions following the article. If the article were to be rewritten today, semantic arguments would probably be much more prominent. When the article was written, however, it was believed that if syntax and semantics were not exactly independent of each other, still the drawing of a syntactic distinction should be supportable on syntactic evidence alone. Many people still believe that this is the proper approach.

The arguments Perlmutter uses, then, are mainly syntactic, and, in the section on intransitive *begin*, they are arguments that are universally accepted and very frequently used in transformational work. Every student of syntax should know how to use arguments based on selectional restrictions or distributional properties, *There*-Insertion, and the synonymy or nonsynonymy of active/passive pairs.

The organization of the syntactic arguments is very clear. There are two sections: five arguments that *begin* can appear as an intransitive V in the deep structure, followed by six arguments that *begin* can appear as a transitive V in the deep structure. Nowhere in the article, however, does Perlmutter consider a deep structure in which *begin* appears as an auxiliary verb to the following infinitive, all within one S, as shown here.

```
                    S
              ┌─────┴─────┐
             NP           VP
              |       ┌────┴────┐
            Zeke   Aux (V?)   V (VP?)
                      |          |
                    began     to work
```

(Note that the details of the deep VP here need not be worked out as far as we are concerned, since we will see that this deep structure is untenable.)

The hypothesis that only one S node is involved even when two Vs are present in the surface could be called the 'null' hypothesis, since it is based on the assumption that the deep structure is essentially identical to the surface structure and that no significant structure-changing transformations have applied. In this hypothesis *begin* would be treated as something akin to an auxiliary. Undoubtedly, Perlmutter does not discuss the null hypothesis because he found it inadequate and assumed his reader could test it on his own and discard it for himself. But Perlmutter probably considered this as the very first hypothesis when first approaching the problems posed by *begin*. It is important that every student of syntax recognize the value and develop the habit of testing the null hypothesis for any given problem. Clearly, if the null hypothesis will account for all the data, it is the preferred hypothesis in that it is the simplest account we can give. Abstract deep structures should not be proposed unless the data make such proposals unavoidable. For this reason we suggest that the reader consider the 11 sets of data given in Perlmutter in light of the null hypothesis. The questions following the article also direct attention to this proposal.
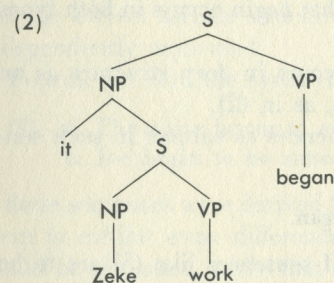
The Two Verbs *Begin*[1]

DAVID M. PERLMUTTER

In the current theory of syntax[2] there are two ways available to represent the deep structure of sentences like

(1)   Zeke began to work.

Begin might be an intransitive verb like *seem* and *happen*, which take abstract (sentential) subjects in deep structure, so that the deep structure of (1) would be something like[3]

```
(2)                         S
                    ┌───────┴───────┐
                   NP               VP
              ┌────┴────┐           |
             it         S         began
                  ┌─────┴─────┐
                 NP           VP
                  |           |
                Zeke        work
```

with the subject NP *Zeke* being substituted for *it* by *it*-replacement and the rest of the embedded S being moved to the right and brought under the domination of the matrix VP,[4] yielding the correct derived constituent structure of (1).

On the other hand, *begin* might be a verb like *try*, which takes object complements. Since there are no sentences like

(3)   * Zeke began for Oscar to work.

3

if we accept Perlmutter's assumption (which you uncovered in Question 1) that nominalizations such as those in (i) come from underlying sentences. However, even if it could be shown that such nominalizations do not have their source in deep structure sentences, (i) would only show that *begin* can also occur in an intransitive deep structure with a *nonsentential* subject NP.

Given the comparative explanatory powers of the three analyses for the data discussed thus far, in which structure(s) would you now say *begin* can appear in deep structure?

Question 8. The first argument that *begin* must also be able to appear as a *transitive* verb in deep structure is based on the fact that *begin* can form an agentive nominalization, as in (i).

(i) Pete is a beginner.

Perlmutter claims that this is an argument that *begin* must be able to take animate subjects in deep structure. Remember that Perlmutter is considering only the two possibilities: that *begin* takes either a sentential subject or a sentential object. How does it, then, follow from (i) that *begin* can occur as a transitive V in deep structure? (Recall *seemer, *happener.*) Is it true that only Vs that can take animate subjects in deep structure can form agentive nominalizations? Consider the nominalization *mover* in (ii).

(ii) Pete's a real mover.

Here *mover* does not mean that Pete moves things, but only that he himself moves in an especially skillful way. Thus *mover* here corresponds semantically to the intransitive rather than the transitive V *move*. If we find an agentive nominalization, then, we can conclude that the corresponding V must allow animate subjects in deep structure but not that that V need be transitive in deep structure. Thus Perlmutter's argument holds only if the intransitive V *begin* can take sentential subjects but cannot take animate subjects in deep structure. None of the data presented so far require the intransitive *begin* to allow nonsentential deep subjects, according to Perlmutter. As you noted in Question 7, however, if nominalizations such as that in (i) in Question 7 do not have an underlying sentential source, we must allow the intransitive *begin* to allow nonsentential deep subjects. Can any of these nonsentential subjects be animate?

Can the null hypothesis account for *a beginner*? Try to form agentives from other auxiliary elements.

Note that Perlmutter is claiming that there is a transformation which turns the V *begin* into the agentive nominal *beginner*. His argument does not rely on that claim, however. For even if no such transformation exists, one can still use the fact that any V which does have a corresponding agentive of this type

can take animate subjects in deep structure, when one is arguing about the types of deep subjects a verb may take, and hence what types of deep structures it may appear in.

In fact, there is a question as to whether there is indeed a transformation turning the V *begin* into the agentive *beginner*. Note that there is no straightforward semantic relationship between (iii) and an S with *John* as the surface subject of the V *begin*.

(iii) John is a beginner at skiing.

Probably the closest relationship is with Ss with progressive aspect, like (iv).

(iv) John is beginning skiing.

But here the relationship does not always go through: compare (v) and (vi).

(v) John is a beginner at love.
(vi) John is beginning??loving/*love.

Furthermore, some agentives lack corresponding V forms (*grocer/*groce*), and many agentives do not have the *-er* ending (*cook, wastrel, repairman, typist*). In Chomsky's article in this volume you will see arguments that there is an idiosyncratic relationship of such nominalizations to the V. The transformational relatedness of *begin* and *beginner* cannot be used as an axiom, but the distributional properties of *beginner* itself are still relevant.

*Question 9.** The next argument is based on the fact that Vs like *try, condescend,* and *refuse* can take *begin* in their complements, as in (i).

(i) I tried to begin to work.

Perlmutter claims, citing Perlmutter (1968) for arguments, that such Vs manifest the like-subject constraint, which requires that the subject of the S embedded immediately beneath them be identical to their own subject in deep structure. Thus in (i) the deep structure subjects of both *try* and *begin* must be *I*. Therefore, *to work* in (i) must come from a sentential object.
However, consider Ss like (ii).

(ii) Mary always tries to be seen in the most chic restaurants.

If Passive has applied on the lower cycle in this S, what aspect of the like-subject constraint does this example call into question? Now consider (iii) and (iv).

(iii) Mary usually tries to appear to understand, even when
     she misses the point entirely.
(iv) Mary always tries to be tough to convince, but Jack can
     win her over every time.

What rule has applied on the *appear* cycle in (iii)? What rule
has applied on the *be tough* cycle in (iv)? Is the like-subject
constraint a deep structure constraint, in light of (ii)-(iv)?
How might we state it? If the like-subject constraint is not a
deep structure constraint, does Perlmutter's argument about
begin hold?

   Question 10. The next argument uses the fact that *begin* can
be embedded immediately under *force*. Perlmutter claims, again
citing Perlmutter (1968) for arguments, that Vs like *force* re-
quire the subject of the S embedded immediately beneath them
to be identical to their own subject in deep structure. Thus in
(i), both the deep structure object of *force* and the deep struc-
ture subject of *begin* must be *Tom*.

   (i) I forced Tom to begin to work.

   Again, this argument rests on the claim that the constraint
as Perlmutter states it is a deep structure constraint. What
kinds of evidence would you look for in order to test whether
or not this constraint is a deep structure constraint? Give
some relevant examples.

   *Question 11. The fourth argument is based on the fact that
begin can be the matrix V of an imperative S, as in (i).

   (i) Begin to work.

Perlmutter claims that imperative Ss require *you* as their sub-
ject in deep structure. If this is true, what problem arises in
the analysis of the imperatives in (ii)-(iv)?

   (ii) Don't be hurt by his rudeness.
   (iii) This time at least appear to understand what she says.
   (iv) This time be tough to convince.

Are the following imperative sentences? What are their deep
structure subjects?

   (v) Somebody turn off the light!
   (vi) Nobody move!

If it is not the deep subject of an imperative but rather the
subject at the time of Imperative Subject Deletion which must
be animate, does Perlmutter's argument about *begin* hold?
   Could the null hypothesis account for (i)?

**Question 12. The next argument uses the fact that *begin*
can take simple NP objects in the surface, as in (i).

   (i) Sam began the job.

Perlmutter concludes that it can therefore be transitive in deep
structure. Up to this point, the only transitive structure
Perlmutter has argued for is that which has an underlying sen-
tential object. Ss like (i) raise the question of whether or not
transitive *begin* can also take nonsentential objects. Perlmutter
assumes in his article that *begin* takes a nonsentential object in
(i). He argues that if *begin* takes two kinds of objects, we
have all the more reason to believe that it takes at least one
kind of object. In footnote 11, however, Perlmutter suggests
that it may be possible to argue that Ss such as (i) have a
sentential object underlyingly and that the V of that sentential
object for some reason does not appear in the surface. Note
that (ii) can mean (iii) but not (iv).

   (ii) I began dinner.
   (iii) I began preparing/cooking/eating dinner.
   (iv) I began throwing dinner on the floor/ruining dinner/
        cleaning up after dinner/digesting dinner, etc.

The way in which we understand *begin* NP then, is one of the
strongest arguments for an analysis in which *begin* takes a full
S object complement with an abstract (transitive) V, as in
example (v).

   (v) $_S[I \begin{bmatrix} V \\ \text{+abstract} \\ \text{+typical} \\ \text{+agentive} \\ \dots \end{bmatrix} \text{dinner}]_S$

This abstract V would not be spelled out in the surface. After
Equi and all spelling out rules, we would be left with *begin*
followed by the NP object of the abstract V. The S complement
of *begin*, however, need not have an NP dominating it in order
for us to account for (vi).

   (vi) The job was begun by Sam.

Can you find any syntactic arguments which offer evidence for
choosing between Perlmutter's text analysis and the analysis of
footnote 11 as expanded here? (See footnote 7, Newmeyer 1975,
and Ross 1976 for relevant arguments.)
   Can the null hypothesis account for (i) and (vi)?

   *Question 13. Another argument relies on the fact that *begin*
can appear without an overt NP or verbal form after it in the
surface, as in (i).

(i) Mark began enthusiastically, but he got tired by noon.

Perlmutter claims that there is a rule which deletes objects in Ss such as (ii) or (iii),

   (ii) I usually eat late.
   (iii) I read at night.

and that this rule can account for the lack of a complement after *begin* in (i) only if *begin* takes objects in deep structure. Can you think of any evidence that *eat* and *read* in these examples had objects in deep structure? Can the null hypothesis account for (i)?

Question 14. Perlmutter proposes that whenever *begin* has an inanimate subject in the surface, we are dealing with the intransitive *begin*. In support of this proposal, he gives an argument based on the fact that VPs beginning with *begin* can be replaced by *do so*, as in (i).

   (i) I forced Warren to begin to work and Paul forced Jerry
       to do so.

He claims that Vs which take sentential subjects can never be replaced by *do so*. Thus (ii), in which *begin* takes a sentential subject by Perlmutter's analysis, cannot have *do so*.

   (ii) *Heed began to be paid to urban problems and attention
        did so too.

Likewise, (iii), in which we have a surface inanimate subject, cannot have *do so*.

   (iii) ??Oil began to drip from the tanker and gasoline did
         so, too.

Sentences (i) through (iii) show the explanatory power of Perlmutter's analysis. Give other examples that would be ruled out by this constraint on *do so*. Now consider Ss such as (iv) with *continue*, noting that Perlmutter claims that *continue* shares all the properties of *begin* discussed in this article.

   (iv) John replaced all the washers, but the kitchen faucet
        continued to leak and the bathroom faucet did so, too.

If this S is good for you with the reading in (v),

   (v) The bathroom faucet continued to leak.

then for you the *do so* argument does not go through. What do you think is the crucial difference between (iii) and (iv)?

Certainly both Ss have inanimate subjects in the surface for *begin* and *continue*. But do you see any difference in the agentiveness of their subjects? If you do, try to salvage Perlmutter's argument.

Question 15. In terms of the form of the argument, what do the arguments mentioned in Questions 9, 10, 11, and 14 have in common? (Note that Perlmutter does not include the material of Question 14 as an argument per se, but rather as a proposal.)

Question 16. The null hypothesis meets some questions with the arguments mentioned in Questions 8, 9, and 10, since *begin* appears in the structures referred to in these arguments more readily than do the Aux's (*He's a haver, *She's a muster; ??I tried to have understood; ?I forced John to be studying*). However, since Aux's certainly contribute to the semantics of an S, one might propose that these examples usually exclude most Aux's for semantic rather than structural reasons. Thus *begin* could still be argued to have the same status as an Aux in Questions 8, 9, and 10. Certainly Question 11 presents no problem for the null hypothesis. (Cf. *Mary, stop arguing! Just sit down and be studying when the curtain goes up.*) But the argument in Question 12 is more trouble. We never get Aux's followed immediately by NPs (*He has the problem* in the sense 'He has done the problem'). Thus we have no evidence that there is a rule deleting Vs between Aux's and direct objects. *Begin*, then, is quite different from the Aux's here—a fact the null hypothesis cannot account for. The argument in Question 13 is less of a problem, since we do have a VP deletion rule allowing Aux's to appear without following Vs, as in *Jack has been studying since noon and Paul has (been) since 1:30*. If *begin* were an Aux, we could try to say that VP deletion had applied in (i).

   (i) Mark began enthusiastically, but he got tired by noon.

The problem is that VP deletion occurs in more restricted contexts than the deletion rule in (i). VP deletion requires that the deleted VP have an identical VP in either a preceding or a noncommanding clause, or in a preceding sentence in the discourse. The deletion in (i) does not observe this constraint. The null hypothesis, then, cannot account for (i).

If *begin* were to occur only in intransitive structures with a sentential subject, the data discussed in Questions 8, 12, and 13 could not be accounted for. In all these cases, *begin* behaves differently from Vs like *seem* and *happen*. (For the argument in Question 13, once more note the distinction between VP deletion and whatever deletion rule has applied in (i).) If Perlmutter is correct in holding that deep structure constraints are at work in the data of the arguments in Questions 9, 10, and 11, then this hypothesis also fails to account for these data.

However, if the constraints at issue are not deep structure constraints, these data present no problem for the intransitive-*begin* hypothesis.

Finally, the hypothesis that *begin* can occur in transitive deep structures (where the object may or may not be sentential) can account for all the data in Questions 8 through 13.

Considering all the data in Perlmutter's article, in what deep structures would you now say *begin* must be able to appear?

*Question 17. *Zeke began to work*, as Perlmutter shows, could be derived from either deep structure. Does it in fact have two readings? Consider (i) and (ii).

(i) Zeke made his decision and quickly began to work.
(ii) Unexpectedly the strike was over, and it turned out that Zeke began to work again Tuesday morning.

If you see a semantic distinction, what is it? If not, can one of the deep structures be ruled out in some way?

**Question 18. Consider Ss like *The sermon began*. What deep structure would you propose for this S? Is there any syntactic evidence for a raising rule from object position in an embedded S to subject position in the matrix S?

*Question 19. In both transitive and intransitive structures the complement V has a semantic restriction on it that accounts for the ungrammaticality of the bad Ss in (i)-(vi). What is this semantic restriction? Is this restriction shared by any other syntactic constructions?

(i) I began to understand the answer.
(ii) *I began to know the answer.
(iii) I began to be polite once in a while.
(iv) *I began to be tall once in a while.
(v) The sky began to turn red.
(vi) *The sky began to be red.

HOMEWORK PROBLEMS

I. Classify each of the following sentences as to whether *begin* is transitive or intransitive in its deep structure.

(1) Finally some headway began to be made.
(2) Bill began the job.
(3) It began to thunder horribly.
(4) We all have something to do, so let's begin now.
(5) She went through a period in which everything irritated her; even his humming softly to himself began to annoy her.

Justify your answers if you can, or at least discuss the alternatives.

II. Perlmutter ends his article by suggesting that various Vs, including the modal Vs (*must, may, might, will, would, shall, should, can, could*), occur in both transitive and intransitive deep structures. Certainly, many modal Vs can be ambiguous, as shown in (1).

(1) John must wear those shoes every day;
  a. the doctor ordered him to. (obligation--root reading)
  b. just look at how worn out they are! (probability--epistemic reading)

It has been claimed that the root reading of modals is transitive while the epistemic reading is intransitive. Consider the Ss in (2) and (3).

(2) These plants must be watered every day;
  a. otherwise they'll die.
  b. just look how green they are!

(3) There must be two doors on the second floor;
  a. otherwise the building won't pass fire regulations.
  b. how else could the thief have escaped?

How are (2) and (3) relevant to the proposal that root readings arise from transitive deep structures? (Review Perlmutter's arguments about the synonymy of active/passive S pairs and about *there* sentences before beginning this problem.) If modals were to occur only in one structure underlyingly, to what could we attribute the ambiguity of the Ss given here?

SUGGESTED READINGS

Bresnan, J. 1972. Theory of complementation in English syntax. Unpublished doctoral dissertation. MIT. (See Chapter 3 for arguments for raising into subject position from a sentential object, as in Question 7.)
Gruber, J. 1965. Studies in lexical relations. Unpublished doctoral dissertation. MIT. (For Question 13.)
Hankamer, J., and I. Sag. 1976. Deep and surface anaphora. Linguistic Inquiry 7:3.391-428. (For VP Deletion, as in Question 13.)
Huddleston, R. 1974. Further remarks on the analysis of auxiliaries as main verbs. Foundations of Language 11.215-229. (For the analysis of modals.)
Lakoff, R. 1972. The pragmatics of modality. CLS 8.229-246. (For the analysis of modals.)

McCawley, J. D. 1974. On identifying the remains of deceased clauses. Mimeograph. Indiana University Linguistics Club. (For Perlmutter's footnotes 7 and 11 and for Question 12.)

Newmeyer, F. 1970a. On the alleged boundary between syntax and semantics. Foundations of Language 6.178-186. (This is relevant to the proposal of an abstract V in Ss such as Perlmutter's example (26); see Question 12.)

Newmeyer, F. 1970b. The 'root modal': Can it be transitive? Studies presented to Robert B. Lees by his students. Edmonton: Linguistic Research, Inc. (For Homework Problem II.)

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Pullum, G., and D. Wilson. 1977. Autonomous syntax and the analysis of auxiliaries. Lg. 53:4.741-788. (For arguments that Aux's, including modals, are intransitive main Vs.)

Ross, J. R. 1976. To have *have* and to not have *have*. In: Linguistic and literary studies in honor of Archibald Hill. Vol. 1: General and theoretical linguistics. Edited by E. Polome, W. Winter, and M. A. Jazayery. Lisse, The Netherlands: Peter de Ridder Press. 263-270. (For Perlmutter's footnotes 7 and 11 and for Question 12.)

2

ON DECLARATIVE SENTENCES

John Robert Ross

Introduction. In this article Ross proposes that every S which does not have an overt performative V with a first person subject and, usually, a second person object of some kind is embedded in the deep structure in an S which does have a performative V and the requisite first person subject and second person object. In this proposal a rule called Performative Deletion (which is, perhaps, governed by the matrix V) optionally deletes all of the matrix S except the embedded S. Overt performatives result when Performative Deletion has not applied.

The proposal of deep performatives for every S regardless of whether such performatives appear in surface structure represents a giant step toward abstraction in syntax. In this proposal the transformational mechanisms are working on structures which are far removed from direct observation. Ross' movement toward such abstractions was one of the early forces leading linguists to consider proposing various kinds of abstract constructions which are never manifest in surface structure. For example, the proposal of higher abstract verbs has been used to account for many syntactic and semantic facts, such as the occurrence of subjunctives in independent clauses in Spanish by Lakoff (1968), a proposal reached independently and contemporaneously with Ross', and the association of presuppositions with certain sentences in English by Morgan (1969).

Begin, like *try, condescend,* and *refuse*, would manifest the like-subject constraint, requiring that the subject of the embedded S be identical to the subject of the matrix S in deep structure.[5] Under this analysis the deep structure of (1) would look something like

(4)

```
                    S
         ┌──────────┴──────────┐
        NP                     VP
         │              ┌───────┴───────┐
       Zeke             V              NP
                        │         ┌─────┴─────┐
                      began       it          S
                                        ┌─────┴─────┐
                                       NP          VP
                                        │           │
                                      Zeke         work
```
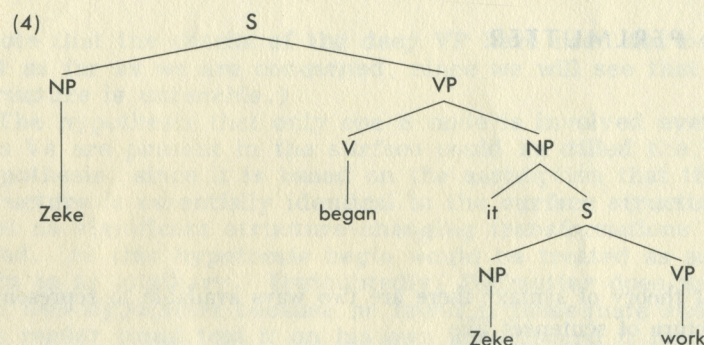
Equi-NP Deletion and other transformations which apply in the derivation of sentences with *try* and like verbs would apply here as well to produce the correct surface structure of sentences like (1).

In this paper evidence is presented to show that *begin* occurs in both types of structures in deep structure.

There is a variety of evidence that *begin* occurs in deep structure as an intransitive verb which takes abstract subjects, as in (2).

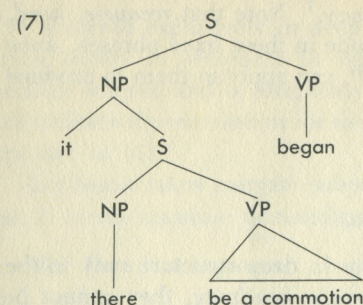First, we note that it takes nominalized sentences as subject in such sentences as

(5)   **The doling out of emergency rations began.**

Begin must occur in deep structures like (2) if sentences like (5) are to be accounted for.

The second piece of evidence that *begin* is an intransitive verb like *seem* comes from consideration of sentences like

(6)   **There began to be a commotion.**

Sentences like (6) would be impossible if *begin* occurred only in structures like (4), for to generate them from such structures it would be necessary for *there* to be the subject of *begin* in deep structure, but there is independent evidence that *there* is not present in deep structures at all, but rather is introduced by a transformation.[6] If, on the other hand, *begin* occurs in deep structures like (2), sentences like (6) are easily accounted for. The *there*-insertion rule applies in the embedded sentence, producing a structure like

(7)

```
              S
      ┌───────┴───────┐
     NP               VP
  ┌───┴───┐           │
 it        S        began
      ┌────┴────┐
     NP        VP
      │     ┌───┴────────┐
   there   be a commotion
```

On the second cycle *it*-replacement substitutes *there* for *it* in the matrix sentence, bringing *be a commotion* to the right of *began* and under the domination of that VP.

A third piece of evidence for the existence of deep structures like (2) comes from sentences like

(8)   **It began to rain.**

in which the dummy subject *it* of weather verbs like *rain* occurs as the surface subject of *begin*. If *begin* occurred only in deep structures like (4), we would have to postulate this dummy *it* as the deep subject of *begin*. If *begin* occurs in deep structures like (2), the embedded subject will be the sentence *it rain* and the correct surface structure will result automatically from rules that are independently motivated.

Fourth, we note the synonymy of the sentences

(9)   a. **The noise began to annoy Joe.**
      b. **Joe began to be annoyed by the noise.**

If these sentences were derived from deep structures like (4), we would expect them to exhibit some difference in meaning, since the deep subject of (9a) would be *the noise*, while that of (9b) would be *Joe*. With a deep structure like (2), however, (9a) and (9b) have the same deep structure and differ only in that the passive transformation has applied in the embedded subject of (9b) but not in (9a). Their synonymy is thereby accounted for.

A stronger argument of this type for the existence of deep structures like (2) can be based on the distributional properties of lexical items like *recourse, heed,* and *headway*. These lexical items are not freely occurring nouns; we must exclude such sentences as

(10)   a. * I like heed.
       b. * Heed is nice.

and many others. The restriction on the occurrence of these nouns can be stated as follows: in deep structure they occur *only* in the fixed phrases *have*
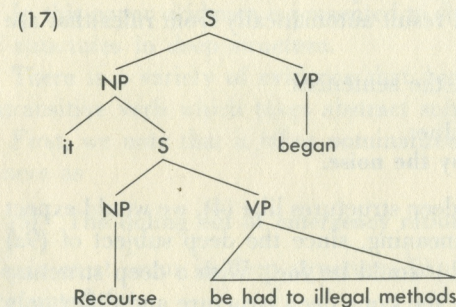
recourse (*to*), *pay heed* (*to*), and *make headway*.[7] Note that *recourse*, *heed*, and *headway* must be dominated by an NP node in these fixed phrases, since the passive transformation, which refers to NP, can apply to them to produce such sentences as[8]

(11) Recourse was had to illegal methods.
(12) Heed was paid to urban problems.
(13) Headway was made toward a solution.

Now, since *recourse*, *heed*, and *headway* occur in deep structure only in the fixed phrases *have recourse*, *pay heed*, and *make headway*, they cannot be the subject of *begin* (or of any other verb) in deep structure. This being the case, if *begin* occurred exclusively in deep structures like (4), there would be no way to account for the grammaticality of sentences like

(14) Recourse began to be had to illegal methods.
(15) Heed began to be paid to urban problems.
(16) Headway began to be made toward a solution.

If *begin* occurs in deep structures like (2), however, these sentences are automatically accounted for by rules that are independently motivated. The passive transformation, which applies to produce sentences like (11), will apply in the embedded sentence, yielding a derived structure like

(17)

```
                S
              /   \
            NP      VP
           /  \      |
          it   S    began
              / \
            NP   VP
            |     \
       Recourse   be had to illegal methods
```

On the second cycle *it*-replacement substitutes the NP *recourse* for the *it* in the matrix sentence, bringing the rest of the embedded sentence to the right of *began* and under the domination of that VP. If *begin* occurs in deep structures like (2), the grammaticality of sentences like (14) through (16) is automatically accounted for.

There is abundant evidence, then, that *begin* occurs in deep structures like (2), in which it is an intransitive verb with an abstract (sentential) subject. We will now proceed to show that *begin* also occurs in deep structures like (4). The argument will proceed in several steps. First we will show that *begin* takes animate subjects in deep structure; this would be impossible

if it occurred exclusively in deep structures like (2). Then we will see that *begin* occurs in sentences in whose deep structure it must have both an animate subject and a complement sentence, as it does in (4). Finally we will indicate the motivation for the NP node which dominates the complement sentence in (4).

That *begin* takes animate subjects in deep structure follows from the fact that it forms agentive nominalizations as in

(18) Pete is a beginner.

Verbs like *seem* and *happen* which take only abstract subjects in deep structure do not occur in such nominalizations.

(19) a. * Pete is a seemer.
      b. * Pete is a happener.

There is also evidence that *begin* occurs in deep structures with both an animate subject and a complement sentence, as in (4). As was mentioned above, verbs like *try, condescend*, and *refuse* manifest the like-subject constraint, requiring that the subject of a sentence embedded directly beneath them be identical to their own subject in deep structure. For this reason the deep structure of sentences like

(20) I tried to begin to work.

must be something like

(21)

```
                    S
                  /   \
                NP      VP
                |      /  \
                I     V    NP
                     |    /  \
                   tried it   S
                           /    \
                         NP      VP
                         |      /  \
                         I     V    NP
                              |    /  \
                           begin  it   S
                                     /   \
                                   NP     VP
                                   |       |
                                   I      work
```
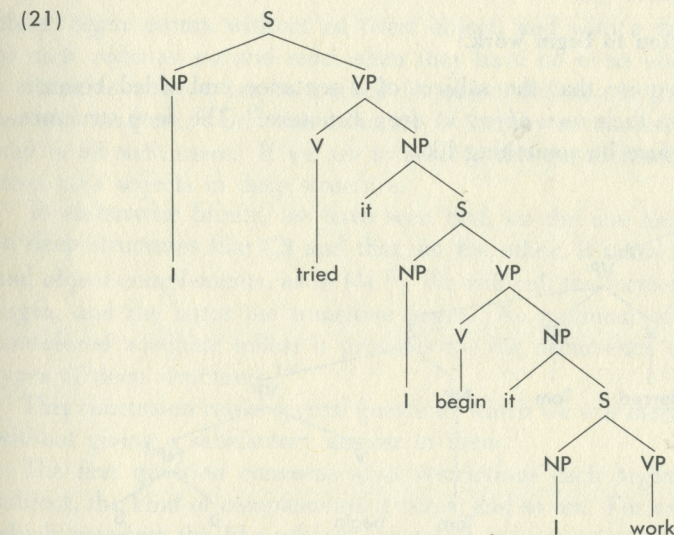
for the subject of the sentence beneath *try* must be identical to the subject of *try* in deep structure. If *begin* occurred exclusively in deep structures like (2), the deep structure of (20) would have to be something like

(22)

```
            S
       /         \
     NP           VP
     |          /    \
     I         V      NP
              tried   it|   \
                         S
                      /     \
                    NP       VP
                   /  \      |
                  it   S    begin
                      / \
                    NP   VP
                    |    |
                    I   work
```

But in (22) the like-subject constraint is not satisfied, for the subject of the sentence beneath *try* is the entire NP containing an embedded sentence, and is therefore not identical to the subject of *try*. Since the like-subject constraint is not satisfied, an ungrammatical sentence must result. For this reason (21) rather than (22) must be the deep structure of (20). The grammaticality of (20) therefore shows that *begin* occurs in deep structures like (4).

A similar argument for deep structures like (4) is provided by the grammaticality of sentences like

(23)   I forced Tom to begin work.

Verbs like *force* require that the subject of a sentence embedded beneath them be identical to their own *object* in deep structure.[9] The deep structure of (23) must therefore be something like

(24)

```
                 S
            /         \
          NP           VP
          |        /    |    \
          I       V    NP     S
               forced Tom   /    \
                           NP     VP
                          /  \    |   \
                         V   ...  V    NP
                        Tom begin     /  \
                                     it   S
                                         /  \
                                        NP   VP
                                        |    |
                                       Tom  work
```
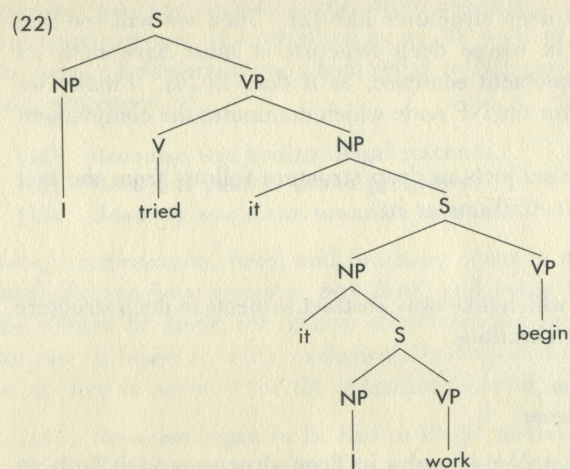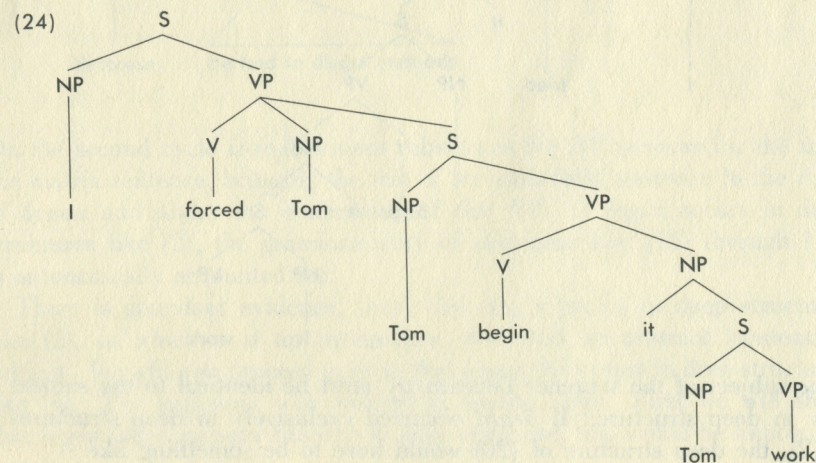
showing that *begin* occurs in deep structures with an animate subject and a complement sentence, as in (4).

Additional evidence for deep structures like (4) comes from imperative sentences like

(25)   **Begin to work.**

Since imperatives require a second-person subject in deep structure,[10] the grammaticality of sentences like (25) shows that *begin* takes animate subjects and complement sentences in deep structure, as in (4).

Let us now turn to the motivations for another aspect of deep structures like (4) — the NP node which dominates the embedded sentence. In this connection we notice that *begin* takes NP objects, as in

(26)   **Sam began the job.**

which predictably undergo the passive transformation:

(27)   **The job was begun by Sam.**

If these sentences are to be accounted for, *begin* must take objects in deep structure.[11]

A slightly more intricate argument for the transitivity of *begin* in deep structure comes from such sentences as

(28)   **Mark began enthusiastically, but he got tired by noon.**

Here, *begin* occurs without an overt object, and with a meaning like that of such verbs as *eat* and *read* when they have no overt object. If *begin* is a transitive verb, it can be marked for object deletion in the same way that *eat* and *read* are,[12] and this behavior is thereby accounted for in the same way in all such cases. If we are to achieve this parallelism, however, *begin* must take objects in deep structure.

To summarize briefly, we have seen that, on the one hand, *begin* occurs in deep structures like (2) and that, on the other, it takes animate subjects and object complements, as in (4).[13] We will call the former the intransitive *begin*, and the latter the transitive *begin*. No grammar of English can be considered adequate unless it provides for the occurrence of *begin* in both types of deep structures.[14]

This conclusion raises several questions which we will merely mention here without giving a satisfactory answer to them.

The first question concerns what restrictions each *begin* imposes on its subject, the kind of complements it takes, and so on. For example, all verbs which manifest the like-subject constraint require animate subjects. Since sentences like (3) must be ruled out as ungrammatical, the transitive *begin* must also manifest the like-subject constraint. We therefore expect the transitive *begin* to require animate subjects. This would mean that in all sentences

in which the subject of *begin* in surface structure is inanimate we are dealing with the intransitive *begin*. That is, sentences like

(29)   Oil began to gush from the well.

in which *begin* has an inanimate subject in surface structure must derive from a deep structure like (2) rather than from one like (4). While we will not fully test this hypothesis here, there is some evidence that it is correct. Note that in sentences which we have shown to contain the transitive *begin*, the verb phrase beginning with *begin* can be replaced by *do so*.[15]

(30)   Warren tried to begin to work and Jerry tried to do so too.
(31)   I forced Warren to begin to work and Paul forced Jerry to do so.
(32)   Begin to work and do so at once.

In sentences which contain the intransitive *begin*, however, the verb phrase beginning with *begin* cannot be replaced by *do so*:

(33)   * Heed began to be paid to urban problems and attention did so too.
(34)   * There began to be a commotion and there did so at four o'clock.

This accords with a valid generalization about English: no verb which occurs in deep structures like (2) in which it takes abstract subjects can be replaced by *do so*. Now, if the transitive *begin* requires animate subjects, and all sentences like (29) in which *begin* has an inanimate subject in surface structure are consequently instances of the intransitive *begin*, it should be the case that in such sentences the verb phrase beginning with *begin* cannot be replaced by *do so*. This seems to be the case, since we do not get sentences like

(35)   * Oil began to gush from the well and water did so too.[16]

While this is not conclusive, it can serve to illustrate the kinds of questions that need to be investigated in order to determine when we are dealing with the transitive *begin*, and when with the intransitive one.

The other major question that arises is that of the relation between the transitive and the intransitive *begin*. It has been the purpose of this paper to show that *begin* occurs in two distinct kinds of deep structures. The question will be left open here as to whether we are dealing with two distinct verbs, a single verb with two distinct sets of contextual features, or a single verb whose occurrence in these two kinds of deep structures is predictable in some way.

The properties of *begin* that have been pointed out here are shared by such verbs as *start, continue, keep,* and *stop,* as well as by verbs which appear to be quite different. The verb *threaten,* for example, must be an intransitive verb that occurs in deep structures like (2) because the following sentences are grammatical:

(36)   There threatened to be a riot.
(37)   It threatened to rain.

On the other hand, it must occur in deep structures like (4) because these sentences are grammatical:

(38)   I tried to threaten to resign.
(39)   I forced Tom to threaten to resign.
(40)   Threaten to resign.

The occurrence of *threaten* in both kinds of deep structures produces palpable ambiguities. For example, the sentence

(41)   The students threatened to take over the administration building.

has two quite different readings. With the transitive *threaten*, it means that the students made threatening statements to the effect that they would take over the administration building. With the intransitive *threaten* in deep structure, (41) might be used to describe a scene in which a mob of students surged toward the administration building; on this reading it does not entail anyone's making any threats at all.[17]

The question of the range of verbs which are like *begin* in occurring as both a transitive and intransitive verb in deep structure, like the question of how the two verbs are to be related, if at all, will be left open here. It appears, however, that the phenomenon of transitive–intransitive verb doublets is quite widespread, and extends into the modal system. It has been observed by grammarians that modals like *must*, for example, are systematically ambiguous.[18] A sentence like

(42)   Clyde must work hard.

can express some obligation on the part of Clyde to work hard, or it can be paraphrased as: It must be the case that Clyde works hard. This suggests that *must* is a transitive–intransitive verb doublet like *begin* in deep structure, occurring in deep structures like (4) on the former reading and in deep structures like (2) on the latter. Vetter (1967) has shown that this also is the case with *need*. If these analyses are correct, and it turns out that there are syntactic facts in English which can be accounted for only if modals are transitive–intransitive verb doublets in deep structure, this will constitute evidence for the hypothesis argued in Ross (1967) that there is no [auxiliary] constituent in deep structure, and that the so-called "auxiliary verbs" are real verbs in deep structure.

NOTES

comments and criticism — particularly Stephen Anderson, George Bedell, Noam Chomsky, George Lakoff, and Haj Ross. Errors of course are my own. I am also indebted to the American Council of Learned Societies for support through a graduate fellowship in linguistics and to the National Science Foundation for support through grant GS-2005 to Brandeis University.

2. The theoretical framework presupposed here is basically that of Chomsky (1965) and Rosenbaum (1967). For more recent developments in this theory, see the other papers in this volume and the references cited there.

3. All tree diagrams given here are grossly oversimplified; I have omitted everything that is not relevant to the points under discussion.

4. For a justification of this formulation of it-replacement, see Lakoff (1966a).

5. For a discussion of the like-subject constraint and the evidence that it is a deep structure constraint, see Perlmutter (1968).

6. *There* behaves like an NP with respect to transformational rules in that it inverts in questions (*Was there a commotion?*), shows up in tag questions (*There was a commotion, wasn't there?*), shows up with *so* (*Joe said there would be a commotion, and so there was*), undergoes it-replacement (*We expected there to be a commotion*), and undergoes the passive transformation (*There was expected to be a commotion*). But *there* cannot occur everywhere that NPs occur in deep structure; we must be able to rule out as ungrammatical such sentences as * *I like there*, * *There is nice*, and many others. It is difficult to see how this could be done if *there* occurs in deep structures. If *there* is introduced by a transformation, on the other hand, we can correctly rule out such deviant sentences by stating the constraints on the distribution of *there* in the rule that introduces it. We will now show that these constraints *cannot* be stated in deep structure, and *must* be done by means of a transformational rule. *There* can occur only with a small number of intransitive verbs (such as *be*, in the examples already cited, and a few others, as in *There ensued a controversy*). *There* cannot occur with *kill*, for example, so alongside *A policeman killed a demonstrator* we do not get * *There killed a policeman a demonstrator*. Now, the passive transformation introduces *be*, which can co-occur with *there*. And if the structure underlying *A policeman killed a demonstrator* has been transformed by the passive transformation into the structure underlying *A demonstrator was killed by a policeman*, which contains *be*, then the corresponding sentence with *there* is grammatical: *There was a demonstrator killed by a policeman*. Whether or not *there* can occur in such sentences cannot be determined on the basis of their deep structures alone, for their deep structures do not contain a verb with which *there* can co-occur. It is only if the passive transformation has applied, introducing *be*, that these sentences can contain *there*. In other words, the question of whether or not *there* can appear in certain sentences cannot be decided on the basis of their deep structures, but only after the passive transformation has applied. For this reason the constraints on the distribution of *there* cannot be stated in deep structure. We must conclude that *there* is not present in deep structure, but rather is introduced by a transformation.

7. Some speakers also allow the fixed phrase *take heed (of)*. Note in passing that these fixed phrases can serve as indicators of environments in which particular verbs can be deleted. For example, Ray Dougherty has noted that although adverbials like *by tomorrow* cannot occur with verbs in the past tense (* *We ordered a bicycle by tomorrow*), sentences like *We needed a bicycle by tomorrow* are perfectly grammatical. This suggests that this sentence is derived from a deep structure with an additional

verb in it: *We needed to V a bicycle by tomorrow*, in which *by tomorrow* is not modifying *needed*, which is in the past tense, but rather the additional verb, which is not. On semantic grounds, the appropriate verb would seem to be *have*, so that the sentences in question would be derived from the structure underlying *We needed to have a bicycle by tomorrow*, by deletion of the verb *have*. Fixed phrases like *have recourse (to)* can be used to show that *have* is the correct choice here, since *have* must be able to undergo deletion in this environment anyway in order to account for the grammaticality of sentences like *We needed recourse to some higher authority*. This sentence must be derived from the structure underlying *We needed to have recourse to some higher authority*, since *recourse* can occur only as the object of *have*. The two motivations for an underlying *have* in this environment explain the grammaticality of *We needed recourse to some higher authority by tomorrow*.

8. This was pointed out by Chomsky to show the incorrectness of any analysis under which a passivized sentence like

(i) The Mohawks were defeated by the Samoans.

has a deep structure like

(ii)
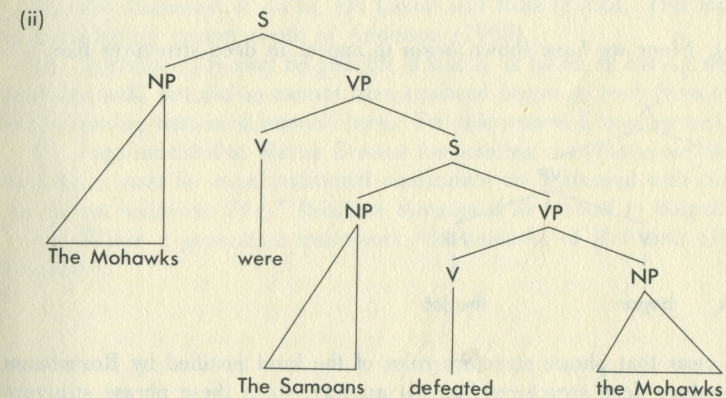
in which the surface subject of the passivized sentence (i) is the subject in deep structure of a higher sentence with the verb *be*. This analysis is incorrect, as (11) through (13) show, because *recourse, heed*, and *headway* occur in deep structure only in certain fixed phrases and therefore cannot be the subject of anything in deep structure. But the analysis of the passive under which (ii) is the deep structure of (i) would require *recourse, heed*, and *headway* to be the subject of *be* in the deep structures of (11) through (13). This analysis is therefore incorrect. Sentences (11) through (13) constitute extremely strong evidence that there is a passive transformation in English which takes deep structure objects and makes them into subjects in surface structure.

9. Evidence for this is to be found in Perlmutter (1968).

10. Evidence for this is to be found in Perlmutter (1968).

11. It might be argued that there are restrictions on the class of NPs that can be the objects of *begin* of a sort that make it necessary to derive these objects from more abstract underlying structures. Regardless of whether or not this is the case,

they must still be dominated by an NP node, as is shown by their ability to undergo the passive transformation in sentences like (27).

12. For some discussion of object deletion of this kind and its relevance to semantic interpretation, see Katz and Postal (1964, pp. 79–84) and Chomsky (1965, p. 87).

13. We have shown that *begin* takes objects in deep structure, but strictly speaking, we have not shown that its complement sentences are object complements. That is, we have not shown that a possible deep structure of (1) is not

```
(iii)                    S
                 ┌───────┴───────┐
                NP              VP
                │         ┌──────┴──────┐
                │         V             S
                │         │        ┌────┴────┐
                │       began     NP        VP
              Zeke                 │         │
                                 Zeke       work
```

rather than (4). Since we *have* shown *begin* to appear in deep structures like

```
(iv)                     S
                 ┌───────┴───────┐
                NP              VP
                │         ┌──────┴──────┐
                │         V             NP
                │         │             │
              Sam       began        the job
```

however, it is clear that phrase structure rules of the kind justified by Rosenbaum (1967) will produce deep structures like (4) anyway, since these phrase structure rules provide for noun phrase complementation by means of a rule that introduces S under NP. The question therefore is whether *begin* occurs in deep structures like (iii) *in addition to* deep structures like (4) and (2). The answer to this question may well turn out to be negative, even though sentences with *begin* fail to satisfy Rosenbaum's criteria for noun phrase complementation. The fact that we do not get passive sentences like * *To work was begun by Zeke* is irrelevant, as Robin Lakoff has pointed out, since even with verbs which normally passivize we do not get passives when the subject of the embedded sentences is identical to the subject of the matrix sentence. Thus *expect*, for example, takes object complements and normally passivizes, yielding sentences like *For Mike to win was expected by everybody*. But if the matrix and embedded subjects are the same, no passive results: * *To win was expected by Mike*. Since the *begin* that appears in structures like (4) requires that the embedded subject be identical to the matrix subject, we will never get a passive like * *To work was begun by Zeke*. For this reason the lack of a grammatical passive here tells us nothing about whether *begin* takes object complements. George Lakoff has argued

that the lack of grammatical pseudo-cleft sentences like * *What Zeke began was to work* is also not a valid argument against noun phrase complementation with such verbs, leading him to call into question the existence of intransitive verb phrase complementation, as in (iii). See Lakoff and Ross (in preparation) for these arguments. However this should turn out, it is only tangentially relevant to the point of this paper, which is to show that *begin* occurs both as a verb with abstract subjects, as in (2), and as a verb with animate subjects and complement sentences, as in (4) or (iii) or both.

14. Garcia (1967) points out that verbs like *begin* lack selectional restrictions on their subjects, and that sentences like (9a) and (9b) are synonymous. She concludes that on formal grounds *begin* should be treated as an intransitive verb that takes abstract (sentential) subjects, analogous to such verbs as *seem* and *happen*. She goes on to say that this solution does not accord with our intuitions about such sentences as *John began to read the book* and offers this as a case where the formally motivated solution and the intuitively correct solution are in conflict. In this paper evidence has been presented to show that no grammar of English is adequate if it does not allow *begin* to occur in two distinct kinds of deep structures. As a result the issue raised by Garcia does not present a problem.

15. For discussion of *do so*, see Lakoff and Ross (1966). This topic is explored in considerably greater depth in Anderson (1968).

16. Sentence (35) may be possible if *did so* is taken as having replaced *gushed from the well*, but *did so* cannot have replaced *began to gush from the well*, which is the reading that is of interest here. For this reason I have starred the sentence.

17. I am indebted to Wayles Browne for pointing out (41) to me. Note in passing that there must be some additional constraints on sentences with *threaten*, for we do not get sentences like * *Recourse threatened to be had to illegal methods*.

18. Within a generative framework, the remarks of Hofmann (1966) are very suggestive.

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QUESTIONS

*Question 1. Perlmutter's first argument is based on the fact that *begin* can appear with a nominalization as its surface subject. He concludes that *begin* must be able to appear with a sentential subject in the deep structure. What assumption is Perlmutter making about the source of the subject NP in (i)?

(i) The doling out of emergency rations began.

(After you have read Chomsky's paper in this volume, come back to this question and test whether Perlmutter's assumption is justifiable. Consider Ss like (ii)-(iv), which Perlmutter does not mention.)

(ii) Then the hot weather began.
(iii) Then our troubles began.
(iv) Then the meal began.

Given Perlmutter's assumption, could the null hypothesis account for (i)?

**Question 2. The second argument rests on the fact that existential *there* can appear as the surface subject of *begin*. (Read footnote 6 carefully and try to reconstruct for yourself an argument that this *there* cannot appear in the deep structure. Note in particular the relevance of the fact that this *there* can appear in passives.) If *there* is inserted transformationally as Perlmutter argues, what is the simplest statement of the structural description of *There*-Insertion, considering only simple sentences? (By simple sentences we mean those with only one verb, with or without modals, perfective *have*, progressive *be*, and/or passive *be*.) How would the structural description of *There*-Insertion have to be changed in order to account for (i) if we assume the null hypothesis?

(i) There began to be a commotion.

Be sure you note the relevance of pairs such as:

(ii) a. There was a commotion.
(ii) b. There began to be a commotion.
(iii) a. *There cried a little girl.
(iii) b. *There began to cry a little girl.

Could the null hypothesis account for pairs such as (ii) and (iii) in an explanatory way? Does *begin* behave like modals, perfective *have*, progressive *be*, and/or passive *be* with respect to *There*-Insertion?

Considering only two possible deep structures for *begin*, one intransitive with a sentential subject, and one transitive with a

sentential object, and noting that *there* cannot be present in the deep structure, Perlmutter concludes that Ss like (i) must have a sentential subject. Why can't (i) have a deep sentential object? (Try writing the deep tree for (i) with a sentential object and see what problem arises.) What assumption is Perlmutter making about deep structure nodes in general with respect to lexical items?

Note that Perlmutter refers to a rule of *It*-Replacement. This rule is known by various names, including Subject Raising and Raising into Subject Position. Basically, the rule moves the subject of a clause which is acting as a sentential subject of the next higher clause into subject position in that higher clause, and moves the remaining elements of the lower clause to the end of the higher clause. Some linguists have found it useful to separate this rule into two steps--a rule which extraposes sentential subjects (a rule which is needed independently) followed by a rule which moves the subject of the extraposed clause into subject position in the next higher clause. Since sentences with *begin* (such as (iv)) in which only Extraposition has applied are out, there is no evidence here that two rules have applied in (i).

(iv) *It began (that) there was a commotion.

Question 3. The third argument is based on the fact that the dummy subject *it* of weather Vs can appear with *begin* precisely when *begin* is followed by a weather V. How is this argument similar to that based on existential *there*? Could the null hypothesis handle these facts? What constraint on the distribution of dummy *it* will be violated if we propose for (i) a deep structure with a sentential object?

(i) It began to rain.

***Question 4.** The next argument is based on the fact that active and passive S pairs with *begin* are synonymous, as in (i).

(i) a. The noise began to annoy Joe.
(i) b. Joe began to be annoyed by the noise.

If *begin* is a main V, why can't (i-b) be directly derived from (i-a) by Passive? What is the environment for Passive according to (the assumption of) Perlmutter? What problem in the analysis of these active/passive pairs arises if *begin* is in a transitive structure underlyingly? If, instead, *begin* is an auxiliary, can (i-b) then be derived from (i-a) by Passive? (Compare *begin* to modals and other auxiliaries with respect to Passive.)

***Question 5.** The final argument that *begin* can be an intransitive V uses the fact that words like *recourse, heed,* and *headway* appear in simple active Ss only as the objects of the Vs

have, pay, and *make,* respectively. They can appear as the subject of *begin* only when *begin* is followed by *be had, be paid,* or *be made.* Perlmutter says that if these NPs are generated in object position in a sentential subject of *begin* and if Passive then applies on the lower cycle, followed by Raising into Subject Position on the higher cycle, his sentences in (14)-(16) are accounted for.

If you were to consider only simple Ss, how could you describe the distribution of NPs like *recourse, heed,* and *headway*? (Consider both active and passive Ss.) Should the constraints on their distribution be stated at the deep structure level or at some derived level? If *begin* occurred only as a transitive V in the deep structure, in what way would the statement of distribution of these NPs have to be complicated? What does this argument have in common with the argument based on active/passive pairs? What does this argument have in common with that using existential *there* and that using dummy *it*?

Question 6. The foregoing five arguments can be grouped into two types. One type is of the form: a given element can appear in deep structure or can be inserted transformationally only in a particular environment. Thus, if that element appears in any other environment in the surface, it must have been moved there. The other type is of the form: certain structural phenomena are accounted for by particular transformations. Thus, whenever those structural phenomena occur, the given transformation(s) must have applied. Group Perlmutter's five arguments into these two types.

Question 7. The null hypothesis can account for the data on *there* Ss, dummy *it* Ss, active/passive pairs, and *recourse, heed,* and *headway* Ss by treating *begin* just like an Aux. But the null hypothesis cannot account for (i).

(i) The doling out of emergency rations began.

On the other hand, the hypothesis that *begin* is underlyingly transitive with a sentential object cannot account for any of the data mentioned earlier if we accept Perlmutter's unstated assumption (which you uncovered in answering Question 2) that deep structure subject nodes cannot be empty. If, however, we were to allow deep structure subject nodes to be empty, this hypothesis could account for all the data (*there* Ss, dummy *it* Ss, etc.) except (i) by giving *begin* an empty deep subject and a derived surface subject. Under this analysis we would have to propose a rule which raises the subject of a sentential object into the subject position in the next higher clause. But even with these modifications, (i) cannot be accounted for by this analysis.

Finally, the hypothesis that *begin* is underlyingly intransitive with a sentential subject can account for all the foregoing data