The MIT Press

Remarks and Replies

Some Further Limitations of Interpretive Theories of Anaphora

Paul M. Postal

I. Introduction

The reply to criticism is in my view a dubious art form and I should prefer to avoid it whenever possible. Bresnan's criticisms (Bresnan 1971) of the paper "Missing Antecedents" (henceforth: MA) by Grinder and the present writer, however, warrant reply.[1] In particular, it hardly seems wise to allow Bresnan's view to stand that the argumentation in MA leads to some support for Interpretive theories of anaphora. Indeed the opposite is the case, not only for the class of examples treated in MA (which Bresnan herself admits), but also for the class she brings up (which were not directly treated in MA, as she correctly notes).

However, I have chosen to embed the reply in a brief critical review of ideas related to Bresnan's, for as she herself would no doubt recognize, the significance of her comments depends in part on their being a partial defense of the more general concepts and assumptions which make up the Interpretive approach to anaphora.

For several years now, a group of linguists centered at MIT have been suggesting, among other things, that anaphoric phenomena in language should be described in terms of so-called Interpretive rules,[2] operating on superficial levels of syntactic

---

[1] George Lakoff, Warren Plath, and John Ross are responsible for many improvements in an earlier version of this paper.

[Editor's note: Postal's reply to Bresnan, which appears below, is based on an earlier version of the squib published as Bresnan (1971). Consequently, there are certain differences in the citations from Bresnan below and the corresponding passages in Bresnan (1971). The editor is solely responsible for this state of affairs and apologizes to the readers and to the authors.]

[2] One of the characteristics of this tradition is a lack of any precise characterization of Interpretive rules, the nature of their inputs, the nature of their outputs, etc. This is in a way necessary since advocates of such rules have in general not been willing to undertake the task of specifying precisely in a general way the nature of logical forms or semantic representations. There is, however, one fundamental assumption implicit in all such work, an assumption which is so curious and so at odds with almost all other work known to me dealing with the problems of semantic structure that it is really amazing that Interpretive advocates have never stated it or attempted to justify it. The claim is that a human language does not contain a set of principles *independent*

organization, rather than, for example, in terms of principles (such as syntactic deletion) which permit anaphoric structures to be assigned their logical forms in the same way as "ordinary" nonanaphoric constituents. The literature on this topic is in part underground, consisting of unpublished papers, but also now in part public, consisting of dissertations and various articles.[3] In my opinion, this has been an unrewarding line of work. In case after case, when the claims of (particular) Interpretive accounts of anaphora prove clear enough to have empirical consequences and are analyzed, they are proven to be (often remarkably) incorrect. Previous analyses of this type include Lakoff (1970), Partee (1969), Postal (1972), Ross (1969), and of course MA itself, as Bresnan recognizes.[4] However, since quite strong claims are involved in the preceding sentence, I shall add two additional brief analyses of Interpretive proposals before proceeding to a direct analysis of Bresnan's criticisms, which will provide a third example.

II. Some Interpretive Proposals

A. *Jackendoff's Noncoreferentiality Convention*

In what is unquestionably one of the most extensive, serious, and highly supported pieces of work within the general framework being criticized, Jackendoff (1969)

---

of the peculiarities of its superficial syntactic structures which directly generate the set of logical forms (semantic representations). This follows since such crucial aspects of logical form as (stipulated) coreference, quantifier scope, etc. are to be generated, at least in part, by Interpretive rules operating on superficial structures. Clearly, advocates of this view owe an explication and justification of it.

   [3] Cf. for example Akmajian (1969; 1970), Chomsky (1970; to appear), Dougherty (1969), Jackendoff (1969).

   [4] Ross (1969) shows that a variety of anaphoric processes, including Verb Phrase Deletion and what he calls Sluicing are not describable Interpretively. Partee (1969) analyzes an argument of Chomsky (1970). The latter claims that such contrasts as:

    (i)   Each of the men hates his own brothers.
    (ii)   The men each hate his own brothers.

where *men* and *his* can be (partly) coreferential in the first and not in the second support a view in which (1970, 85):

    There appears to be, in such cases, a relatively simple rule of interpretation which makes use of surface structure information, . . .

Chomsky's assumption is that structures like (ii) are derived transformationally from those like (i), and hence that at a stage before the appropriate rule of *Each* Detachment, the semantically distinct structures are not distinguished. But as is obvious, and as Partee shows in detail, there is no argument here for post *Each* Detachment interpretation. The difference between (i) and (ii) is attributable, even under Chomsky's assumptions, to the fact that English pronouns agree with their antecedents in number. Hence the real post *Each* Detachment variant of (i) is:

    (iii)   The men each hate their own brothers.

which shares the relevant reading with (i). This simply means that number agreement must be defined on post *Each* Detachment structures and nothing else. Notice that is is quite general that post *Each* Detachment NPs like *the men* in (ii) act as plurals, while previously they behave like singulars. Contrast the number of the verb in (i) and (iii), for instance. Partee (1969, 14) then properly concludes that:

    Thus it seems to me that the example Chomsky offers in support of the need for surface structure interpretation plus filtering devices in fact provides an argument against them.

argues for an Interpretive treatment of the relations between coreferential pronouns, both reflexive and nonreflexive, and their antecedents. However, a necessary device to make his account even consistent with the facts is a principle called the *Noncoreferentiality Convention* (cf. especially 1969, 46–47; 55–56). This says in effect that if a pair of NPs have not been marked coreferential by previous applications of the Interpretive rules of coreference, they are to be marked as noncoreferential.[5] This is required, for example, to make Jackendoff's Interpretive rules for coreference, which are stipulated to apply within the syntactic cycle, consistent in a general way with such facts as:

(1) a. *He_i thinks [$Jack_i$ said I hated him_i]
    b. He_i thinks [you said I hated him_i]
    c. $Jack_i$ said I hated him_i.

The problem for Jackendoff here is that in examples like (1a) *Jack_i* and *him_i* can be marked as coreferential on the cycle indicated by the brackets, as (1c) shows. Moreover, as (1b) shows, *he* and *him* in positions like those in (1a) can be marked as coreferential on the cycle of the whole sentence in cases like (1a). Jointly, these properties of the rules of coreference assignment then predict the reading on which all three indexed NPs in (1a) are coreferential. That is, if the principles predict that *Jack* can be coreferential with *him* and *he* with *him*, then they predict mutual coreference, since if A is coreferential with B and B with C then A is coreferential with C, the coreference relation necessarily being transitive. But the predicted reading is impossible, as the star on (1a) indicates. In order to avoid such quandaries Jackendoff formulates the Noncoreferentiality Convention. In the case of (1a), this will take advantage of the fact that on no cycle can coreference be directly assigned by his coreference rules to *he* and *Jack*. This pair of NPs will meet then the conditions for subsequent application of the Noncoreferentiality Convention. Hence, overall Jackendoff's rules make the following statements about a structure of the form:[6]

(2) He thinks Jack said I hated him.

(3) a. *Jack* and *him* are coreferential.
    b. *He* and *him* are coreferential.
    c. *He* and *Jack* cannot be coreferential.

---

[5] Some citations will help:

Any two nonpronominal noun phrases in the same sentence, morphologically identical or not, are always noncoreferential. (1969, 46)

(81) (Noncoreferentiality Convention) If a pair of NPs (NP_1, NP_2) does not appear in the table of coreference, they are noncoreferential. (1969, 56)

Our conclusion is then that we can maintain pronominalization in the cycle if we make it optional and if the Noncoreferentiality Rule or Convention is last-cyclic. (1969, 56)

[6] Jackendoff's rules of coreference assignment are optional. We are concerned here only with the case where the option is taken and the rule applies.

In effect Jackendoff then proposes to predict the ill-formedness of the reading in (1a) by virtue of the fact that (3c) is inconsistent with (4), which itself is entailed by (3a) + (3b) (given the transitivity of coreference).

(4)   *He* and *Jack* are coreferential.

Thus the Noncoreferentiality Convention plays a key role in keeping Jackendoff's account consistent with facts such as (1a). But this condition is false and based on a misconception of the relation between grammar and coreference. To see first that the condition is false, one need only consider a variety of cases like:

(5) a. Mary saw *a vampire* and I saw *a vampire* and they were the same vampire.
     b. *Who* did *Joan* shoot?
     c. *Melvin* is *the Republican who I like best*.
     d. *The current president of the U.S.* and *Richard Milhous Nixon* are the same person.

In each of these cases and an unbounded number of others, the italicized NPs naturally fail the conditions for being marked coreferential by Jackendoff's rules of coreference assignment. Consequently, they are necessarily marked noncoreferential by his Noncoreferentiality Convention. This has impossible consequences in each case. Thus such a marking in (5a) makes the conjunction of the first two clauses inconsistent with the third, which asserts the coreference of the pair. Such a marking in (5b) falsely claims that in asking the question one precludes the situation where it is a case of a self-inflicted gunshot wound; that is, Jackendoff's rule wrongly predicts that (5b) cannot be answered by *Joan shot herself*. In (5c), the predicted marking is directly inconsistent with the meaning of the sentence, which asserts the coreference of the italicized NPs. The situation in (5d) is similar to (5a).

Hence there is no doubt that the Noncoreferentiality Convention has no place in a correct description of English, still less in a viable universal theory of grammar. It is not too hard today to see what has gone wrong here. It is the basic assumption that the relations between antecedent and pronoun in cases like (6a, b) is one of coreference as such.

(6) a. *Melvin$_i$* criticized *himself$_i$*.
     b. *Melvin$_i$* thinks *he$_i$* is a telepath.

Rather, the relation is one of *stipulated coreference* (as opposed to the relation in sentences like (5c), for instance, which is one of *asserted coreference*). While quite mysterious, stipulated coreference seems analogous in properties to the usage in mathematical writings, where one introduces a set of variables, x, y, z, and then for certain of them says something like:

(7)   let $x = y$

or where one gives restrictive relative clause equivalents of the form:

(8)   for all x, y such that $x = y \ldots$

The point about such stipulations is that they cannot be true or false. They are specified characterizations that must be met in order for the expressions that are constructed from the equated variables to have truth values.

In natural languages, there are a variety of manifestations of stipulated coreference, of which the antecedent-pronoun relation is surely central. In the case of other types of NP pairs, the facts are not as Jackendoff's rules would have it, i.e. that such NPs are not coreferents. Rather such NPs are in general simply not stipulated to be coreferential. This leaves it unspecified whether or not they are coreferential. In general, there is no way that the grammar can keep track of coreference, as opposed to stipulated coreference. Notice for instance that the coreferentiality in sentences like (9) depends on nonlinguistic facts:

(9) Richard Nixon thinks that the current president of the U.S. is a splendid fellow.

There is thus no hope of giving rules of language which assign coreference and noncoreferentiality per se.

Once this fact is understood, one can go back and ask whether it makes sense to try and formulate a formal analogue to Jackendoff's Noncoreferentiality Convention in terms of stipulated coreference rather than coreference per se. It is clear that it does not. It is redundant to add a rule which provides the information about pairs of NPs that the speaker[7] does not stipulate to be coreferential. At the worst, one can simply give the general principle that all NPs are presumed to have this status unless they are related by a "marked" stipulation of coreference (however such stipulations are to be formally specified in logical structure, which in my opinion is a quite difficult problem).

To see that the analogue of the Noncoreferentiality Convention would not be needed for stipulated coreference, consider the analogous case of assumptions distinct from coreference stipulations. For instance, the verb *lack* has a core meaning identical to *not have* (*possess*). Thus if Paraguay lacks oil then Paraguay does not have oil. However, associated with *lack* is a further assumption which can be very roughly formulated as the speaker's view that it is somehow appropriate for the entity designated by the subject NP of *lack* to have the stuff designated by the object NP of

---

[7] Reference to "the speaker" is overly simple, of course. A correct statement would have to involve the notion of the individual designated by the NP functioning as the experiencer NP of a "world-creating verb", or the like. Hence in examples like:

(i) "Did *Jane* kill *herself*?" Melvin wondered.

the stipulation of coreference between the italicized NPs must be attributed to the individual designated by the NP *Melvin*, not to the speaker of (i). In other words, the logical form of (i) is roughly something like:

(ii) X (speaker) declares [that Y (Melvin) wondered (whether A killed B, where Y stipulates that A = B)]

If the stipulation were the speaker's in such cases, this would leave open the possibility that the "wonderer" was concerned with a killing relation between two separate individuals, a property which the meaning of (i) precludes.

lack.[8] This assumption will have to be associated with *lack* in the grammar of English. The analogue to the reformulation of Jackendoff's Noncoreferentiality Convention for this case would be the claim that the grammar of English must in addition contain the specification that the sequence *not have* is *not* associated with the assumption that it is desirable or appropriate . . . , etc. Clearly, this makes no sense. Evidently, a grammar must specify in general what assumptions and what stipulations are associated with grammatical elements, but no one can imagine that the grammar must specify what assumptions and stipulations are *not* associated with such elements, a task which would of course be literally endless.

It follows that as formulated in terms of coreference per se, Jackendoff's condition is factually incorrect to a wide degree and that, if reformulated in terms of stipulated coreference, it would become one of a possible set of pointless excrescences in the grammar (or in linguistic theory). The fact that his system needs some such principle to maintain factual consistency with examples like (1a) shows that the underlying principles of coreference assignment are incorrect, and not reinterpretable in terms of stipulated coreference. I think it is possible to formulate the general principles of pronominalization in such a way that cases like (1a) are blocked automatically without appeal to anything like Jackendoff's Noncoreferentiality Convention. But this is not the place for positive suggestions.

B. Dougherty's Anaporn Relation

Dougherty (1969) argues for a theory of coreferentiality assignment which has Interpretive rules operating on the surface structures of sentences, or on certain somewhat earlier structures prior to the application of some late transformations. For what is probably the central argument in favor of his conception, Dougherty offers his "discovery" that a certain relation obtains between English surface structures and their interpretations. The account requires quoting (1969, 509–510):

> Suppose we are presented with a surface structure sentence which contains a pronoun. For discussion, let S_o represent any sentence which contains at least one pronoun.
>
> (112) S_o
>
> . . . PRO . . .

---
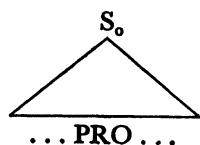
[8] Thus such examples as:

  (i)   Monkeys lack two heads.
  (ii)   Ann Arbor lacks polluted wells.

are bizarre since it is not normally taken to be appropriate for monkeys to have two heads or for cities to have polluted wells. Notice the complete naturalness of the corresponding sentences with *not have*.

where PRO is a proform such as: *he, she, they*, etc.; *the rest, the remainder, the balance, the others*, etc.; *the fool, the bastard*, etc.[12]

As speakers of English, we know three things about S_0:

(1) If the proform is understood anaphorically and S_0 is well-formed, then *necessarily* the proform can also be understood non-anaphorically, and S_0 will in this case be well-formed. In other words, a sentence S_0 which contains a proform can have an anaphoric reading for the proform if and only if S_0 also has a non-anaphoric reading for the proform. One consequence of this is that if a field worker elicits from a native speaker of English that S_0 is well-formed when the proform is understood anaphorically, then he knows that necessarily S_0 has a second reading, i.e. S_0 is also well-formed when the proform is understood as non-anaphoric.

---

[12] I use the term *proform* and not *pronoun* because many elements can have an anaphoric interpretation in addition to what are called *pronouns*. The italicized elements in (A) and (B) can be understood as being anaphoric with *Durcet*.

    (A)   When Durcet came in, *he* was picking his nose.

    (B)   When Durcet came in, *the bastard* was picking his nose.

We use the term *pronoun* for *he, she*, etc. and *proform* to include both *he*, etc. and *the bastard* etc.

Dougherty summarizes and extends the view in a more formal statement (1969, 511):

In English, there is no surface structure sentence, S_0, such that S_0 is grammatical on the reading when the proform is understood anaphorically, but S_0 is ungrammatical on the reading when the proform is understood as non-anaphoric. Therefore: It is a fact that *the set, Σ_A, of surface structure sentences which contain a proform that is understood anaphorically is a subset of the set Σ_N of surface structure sentences which contain a proform that is not understood anaphorically. This relation between Σ_A and Σ_N called the ANAPORN RELATION, is: Σ_A is a subset of Σ_N.* There is no *a priori* reason why this should hold in English, but the fact that it does hold is linguistically significant. (emphasis mine: PMP)

On the face of it this claim seems to imply that in Dougherty's idiolect reflexive pronouns and relative pronouns such as those in (10)

(10) a.   Harriet$_i$ tried to reconcile herself$_i$ to reading such articles.

     b.   Melvin$_i$ voted for himself$_i$.

     c.   The gorilla$_i$ on top of which$_i$ Ernest was riding looked tired.

     d.   That policy$_i$, which$_i$ contains at least 18 contradictions, has been in effect for thirty-four years.

either (i) do not occur, or (ii) have readings where they are not stipulated to be coreferential to other elements. For in fact almost every such pronoun is a counterexample to the purported relation.[9]

---

[9] A defender of Dougherty here might note that in his footnote 12, given in our first citation of his argument, Dougherty does not explicitly mention either reflexive or relative pronouns. It might be claimed then that his relation is not intended to cover such forms. This would preserve the validity of the relation against such forms only at the cost of reducing it to vacuity as far as supporting Interpretive conceptions of anaphora. For, of course, reflexive and relative pronouns occur in surface structures with (stipulated) coreferential interpretations. And, if it is a consequence of Interpretive accounts that all such elements must have non(stipulated) coreferential readings, then it is a consequence that English has no reflexive and relative pronouns of the sort it has. On the other hand, if it is not a consequence of the Interpretive account, then the account cannot explain

Second, even for the class of morphological pronouns which Dougherty explicitly mentions, there are literally dozens of different types for which the relation fails, that is, dozens of contexts in which such pronouns have only stipulated coreferential readings. Below is a random selection of two dozen and two that obtain for my idiolect at least. I shall italicize the pronouns which are necessarily anaphoric. Since the stress level of pronouns is relevant, I distinguish v́ (contrastive stress), v̀ (strong but non-contrastive stress), v̆ (weak). Note further that, in many cases of weak stressed pronouns, the initial consonants are severely weakened or lost.

(11) a. Melvin$_i$, and $h\grave{e}_i$ is no dope, thinks that proof is correct.
    b. Joan$_i$ cursed $h\breve{e}r_i$ own mother.
    c. Harry$_i$ can, if $h\breve{e}_i$ puts his_i mind to it, sell a lot of ice cream.
    d. Melvin$_i$, and only $h\grave{e}_i$ of those in our class, has revealed telepathic powers.
    e. Joan$_i$, but no one other than $sh\grave{e}_i$, has agreed to defend that theory.
    f. Tony$_i$, and $h\grave{e}_i$ alone, puts ketchup on his cornflakes.
    g. Except for Bob$_i$, and I am not even sure of him_i, we all agreed to forget that.
    h. The Rabbi$_i$ is performing his_i last confirmation today.
    i. Tom$_i$ kissed Sally$_j$ and then $h\breve{e}_i$ car̀essed $h\breve{e}r_j$.
    j. Joe's$_i$ first self-inflicted wound was in his_i head.
    k. In one impulsive act, John picked Mary$_i$ up and threw $h\breve{e}r_i$ on the bed.
    l. More people dísbelieve that claim$_i$ than believe $\breve{i}t_i$.
    m. Cynthia$_i$ should've called Tony but $sh\breve{e}_i$ didn't.
    n. I pointed out to Tony that his horse$_i$ was not as strong as $\breve{i}t_i$ was supposed to be.
    o. Maxwell$_i$ played poker on Friday, as $h\breve{e}_i$ always does.[10]
    p. Neither Glenda$_i$ nor $h\breve{e}r_i$ mother is a nurse.
    q. Mary was surprised that Max$_i$ wouldn't accept her offer to him_i.
    r. Max$_i$ and his_i fellow plotters are Nazis.
    s. Mothers$_i$ rarely give birth to $th\breve{e}ir_i$ children in trees.
    t. That zebra$_i$ has a pain in his_i ear.
    u. Harry$_i$ is sick, isn't he$_i$?

the purported validity of the relation in other cases. Inherently, the Interpretivist cannot distinguish relatives and reflexives from other pronouns here. The logic which need not take account of these forms is a logic which can also preserve the validity of the claim that all birds are blue. When presented with a nonblue bird, the claimant need only say "Oh, I didn't mean those" . . . i.e. he restricts himself to blue birds. The alternatives for all such bird and pronoun theories are falsehood or vacuity.

    [10] Incidentally, this sentence has rather interesting properties. Typically, Verb Phrase Deletion is dependent on the semantic identity of the removed structure with its antecedent. But in cases like this, the antecedent phrase refers to a particular act, while the clause with a deleted phrase refers to habitual acts. This suggests that in logical form habitual act structures have a representation which is partly identical to that of particular act structures.

    v.   I don't know who$_i$ committed the crime but h$\check{e}_i$ must have been insane.

    w.   This theory$_i$ is wrong in the sense that it$_i$ is totally false.

    x.   Harry$_i$ got a hit in his$_i$ first time at bat.

    y.   As for Harry$_i$, I will talk to him$_i$ tomorrow.

    z.   A boy$_i$ kissed a nurse and the nurse that h$\check{e}_i$ kissed didn't like it.

As if to finalize the matter, Dougherty himself gives at least two examples which violate his condition, at least in my idiolect, namely his (144) and (148) (repeated here as (12a) and (12b) respectively):

(12) a.   With him Bill had brought two women and a case of beer.

      b.   Bill had brought two women and a case of beer with him.

Dougherty states that his Interpretive theory entails the Anaporn Relation and argues that the truth of the latter relation[11] thus supports his theory. But since this relation is inapplicable to English,[12] it follows that Dougherty's Interpretive theory is falsified by what he considers the strongest argument in favor of it.[13]

III. Bresnan's Criticisms of MA

A. Fundamentals

In the discussion which follows, the reader's familiarity with MA is assumed. It deals chiefly with the type of Identity of Sense Anaphora manifested by Verb Phrase Deletion, although the arguments are extended to such forms as pronominalization with *one* and *such*. It is shown that an Interpretive account of such elements is impossible, a conclusion which Bresnan accepts. Hence even on her account, MA

---

[11] Cantrall (1969) has argued that surface structure pronouns and their antecedents are at least potentially audibly connected by intonational levels. If this extemely interesting suggestion has any validity, then Dougherty's claim is even more incompatible with the facts than our examples here indicate.

[12] Part of the problem in this article may be that its author is not exactly clear about what coreference means. Thus he says (1969, 493) that for the example:

   (i)   lips that touch liquor shall never touch mine
          The interpretive rules of reference mark *mine* as having three possible interpretations: nonanaphoric, anaphoric and coreferential with *lips*, and anaphoric and coreferential with *liquor*.

But of course the latter two readings are imaginary. While there can be an anaphoric relation between *mine* and either *lips* or *liquor* in such cases, the anaphoric relation is not one of (stipulated or nonstipulated) coreference. Notice, for instance, that if it were, on the reading where *mine* and *liquor* are anaphorically connected, the sentence would be marked as contradictory, having the logical form:

   (ii)   [lips that touch x shall never touch x]
But (i) has no contradictory reading.

[13] Actually, to make things even worse, Dougherty modifies his original conception of Interpretive rules such that they apply not to surface structures, but to structures prior to the application of at least some transformational rules. This being the case, even if the Anaporn Relation held, it would show nothing directly. It would be necessary to argue that the properties attributed to surface structures carried over to the level to which the Interpretive rules apply. Thus the claim in the text is not strictly speaking true; the falsehood of the Anaporn Relation does not directly falsify Dougherty's actual proposal, although there is a natural extension which will do so, since even application of an Interpretive mechanism of Dougherty's sort to certain pretransformational trees provides no explanation for the existence of several distinct classes of pronominal forms which are obligatorily restricted to stipulated coreferential interpretations.

provides another example like those mentioned and discussed in Section II, where Interpretive approaches to anaphora are falsified. I might note that the arguments in MA can also be extended to the constructions involving the rule Gapping, as Ross has pointed out. Thus one can find such contrasts as:

(13) a. Max hit a homer$_i$ to left field and it$_i$ travelled more than 400 feet.
    b. *Max homered to left field and it travelled more than 400 feet.
    c. Max hit a homer$_i$ to left field and Joe hit a homer$_j$ to right field and each of them$_{i,j}$ travelled more than 400 feet.
    d. *Max homered to left field and Joe homered to right field and each of them travelled more than 400 feet.
    e. Max hit a homer$_i$ to left field and Joe to right field and each of them$_{i,j}$ travelled more than 400 feet.
    f. *Max homered to left field and Joe to right field and each of them travelled more than 400 feet.

Consequently, the conjecture in Jackendoff (1971, 21, footnote) that Gapping might be conceived of as an Interpretive rule is untenable (another instance of the inapplicability of the Interpretive theory).[14]

[14] Jackendoff (1969, 30) proposes another principle in the Interpretive tradition, the so-called *Extended Lexical Hypothesis*, one element of which is the speculation that there are no syntactic deletions. The conjecture is that all facts previously treated by such deletions, like the various types of anaphora, are to be treated by Interpretive rules. This suggestion, which Chomsky (to appear) "guesses" is correct, and for which he claims a paper by Bresnan (to appear) provides some evidence, is of course directly falsified by MA. It follows then that another Interpretive proposal is wrong. In any case, the suggestion is strange because the class of well-supported syntactic deletion analyses is enormous, quite aside from MA, and Jackendoff makes no attempt to show how most of these cases can be handled. For instance, most obviously and trivially, the attempt to do away with the syntactic deletion rule which relates:

(i)   The proposal which Melvin talked about
(ii) The proposal Melvin talked about

will immediately require substantial reduplication in the grammar since the various constraints on *wh*-marked NP movement rules, needed for sentences like (i), will now also have to be redundantly given in the Interpretive component in Jackendoff's account, which cannot have any underlying pronoun in (ii), nor, consequently, any rule to move it. Thus, for instance, there is a complete parallelism between (iii) and (iv):

(iii) *The proposal which Bob talked about and Joan hopes it will stymie the council.
(iv) *The proposal Bob talked about and Joan hopes it will stymie the council.

The ill-formedness of (iii) is known to be due to the Coordinate Structure Constraint, first formulated by Ross (1967), which blocks "chopping" of a constituent out of a coordinate structure. However, under Jackendoff's hypothesis, this constraint will have no possible application to (iv), since such sentences are necessarily claimed to involve no movement. Consequently, the advocate of the Extended Lexical Hypothesis is committed at best to a redundant statement of a functional equivalent of the Coordinate Structure Constraint in the semantic component.

An identical argument shows that acceptance of the Extended Lexical Hypothesis requires a redundant reduplication of the reflexivization rule, based on the same deletion of relative pronouns found in (iv). Thus, one finds both:

(v)   The girl who James wrote to about herself
(vi) The girl James wrote to about herself

In (v) the antecedent of the reflexive is *who*. Under the deletion hypothesis for structures like (vi), it is the deleted *who* which fills this role. But under Jackendoff's assumption, no such *who* ever existed in (vi). Consequently, he is committed to the invention of special "semantic" principles for determining the reflexivization in (vi), since the general rule operative for (v) will not apply.

These types of arguments, which can in many cases be brought to bear against Interpretive proposals, immediately show the incorrectness of the no-deletion claim in a strong and perfectly obvious way.

While Bresnan accepts the conclusions of MA with respect to Verb Phrase Deletion constructions, she objects to the implied generality of the conclusions of MA, which she says seem to imply that all Identity of Sense Anaphora has been shown to lie beyond Interpretive description. There is some, but only some, truth to the claim that MA draws more general conclusions than those established by its arguments or their obvious extensions. I will return to this matter below.

Bresnan points out that Akmajian (1970), which the authors of MA had not then and still have not seen, provides a contrasting view to the generality of MA's conclusions. To quote:

> In contrast to this view, it has been hypothesized that while cases of ellipsis, as in (2), may be derived by syntactic deletion, anaphoric pronouns like the *it* in (1) are to be semantically interpreted. [This is the position of Akmajian (1970, 310–311): Akmajian is the one grammarian who has attempted to systematically describe a class of Identity of Sense Anaphora (as opposed to coreference) by Interpretive rules.] Accordingly, (1) would not be derived from (4); instead, the meaning of *it* in (1) would be supplied by an interpretive rule operating on (1) itself. I will not discuss the details of this alternative, which I will henceforth refer to as the Interpretive Hypothesis, or the evidence for and against it. [Observe that on the Interpretive Hypothesis, the notion Identity of Sense Anaphora (I − S = A) does not characterize a set of theoretically related phenomena.]

So far this only tells us that the Interpretive approach to anaphora continues to be pursued, but that supporters of this view have now reduced the scope of their claims in such a way that much anaphora is now granted to lie beyond Interpretive description. It seems to me this forced lack of generality should have already suggested the incorrectness of the whole approach, but I will return to this point below.

B. Cases

However, Bresnan's claim is that MA provides some empirical support for Akmajian's position:

> I will show that Grinder and Postal's own argument from missing antecedents can be used to provide evidence in favor of the Interpretive Hypothesis.

In defense of this idea, Bresnan argues as follows:

> The argument from missing antecedents works essentially as follows. In sentence (5) the pronoun *it* refers to something my aunt bought for Christmas:
> > (5)   My uncle didn't buy anything for Christmas, but my aunt did, and it was bright red.
> Yet the antecedent for *it* is missing from (5): it does not occur in the first conjunct, as (6) shows—
> > (6)   *My uncle didn't buy anything for Christmas, and it was bright red. [it = something]
> —nor does it occur in the string *but my aunt did*. The missing antecedent must be present in the structure from which (5) is derived, namely (7):

(7)   My uncle didn't buy anything for Christmas, but my aunt did buy something for Christmas, and it was bright red. [it = something]

Now if S Deletion occurs in the derivation of (1), then as in the case of VP Deletion, the missing antecedents phenomenon should appear. But if the Interpretive Hypothesis is correct, there is no deleted S to provide a missing antecedent, and there should be a contrast between cases like (1) and (2). While it is difficult to get clear judgments, there does indeed appear to be a contrast between the two cases, as the following pairs of examples show:

(8)   My uncle didn't buy anything for Christmas, but my aunt did, and it was bright red. [it = something]

(9)   *My uncle didn't buy anything for Christmas, so my aunt did it for him, and it was bright red. [it = something]

(10) My uncle has never ridden a camel, but his brother has, although it was lame. [it = camel]

(11) *My uncle has never ridden a camel, but his brother finally managed it, although it was lame. [it = camel]

(12) Jack didn't cut Betty with a knife, though Bill did, and it was rusty. [it = knife]

(13) *Jack didn't cut Betty with a knife—Bill did it, and it was rusty. [it = knife]

(14) Jack didn't get picked off by a throw to first, but Bill did, and it singed his ear. [it = throw to first]

(15) *Jack didn't get picked off by a throw to first, but it happened to Bill, and it singed his ear. [it = throw to first]

Bresnan thus shows that, for her idiolect at least, a certain class of sentential pronouns behave in a way which contrasts with the behavior of the null anaphors produced by Verb Phrase Deletion. That is, she claims that this class of sentential pronouns cannot serve as the "containers" of missing antecedents. Since this behavior would follow from the Interpretive approach, but not from the syntactic-deletion approach (although, crucially, it is not inconsistent with the latter[15]), she believes she has found evidence from MA argumentation for an Interpretive approach to sentential pronouns. However, while her observations about her examples (5)–(15) are insightful, and perfectly consistent with my idiolect for the same examples, there is no support to be found here for the Interpretive approach to sentential pronouns. On the contrary, when the wider class of facts from which her subset is drawn is considered, they prove to provide a further falsification of the Interpretive hypothesis.

To see why there is not any support for Interpretive ideas in Bresnan's observations, and why, on the contrary, there is counterevidence, one must consider at least briefly the logic of the case, for it is this which determines how facts support or disconfirm theoretical and descriptive assumptions. An Interpretive approach to sentential pronouns necessarily claims that such pronouns can never serve as "containers" for missing antecedents in the sense of MA, or at least for those missing

---

[15] That is, the syntactic-deletion approach permits a priori all sentential pronouns to be "containers" of missing antecedents, but can block some such connections through specification of particular constraints.

antecedents which manifest any "syntactic" restrictions. On the other hand, a syntactic-deletion approach to such pronouns, or its equivalent,[16] is consistent with both the presence and absence of such missing antecedents. This is the case because inherently the syntactic-deletion approach allows such missing antecedents, but it can be consistent with their absence by being combined with particular grammars which embody special restrictions on the relations between anaphors and missing antecedents. Thus with respect to these properties anyway, the Interpretive view (no doubt unintentionally) makes much stronger claims than the non-Interpretive approach. A single case of a sentential pronoun serving as the "container" for missing antecedents falsifies the Interpretive theory of sentential pronouns. Or, put differently, in order to support the strong claims of the Interpretive view here, it is not at all sufficient to supply a few cases where sentential pronouns cannot serve as the "containers" of missing antecedents. Rather, it must be shown that this is an invariant property of sentential pronouns. Hence support for the claim would require very wide and massive data on sentential pronouns. Bresnan, however, gives only a small set of cases of very restricted variety.

I said above that a single case of a sentential pronoun serving as the "container" for missing antecedents disconfirms the Interpretive theory. A more accurate statement would be that such a case directly disconfirms the Interpretive theory of the missing antecedent properties of sentential pronouns and more indirectly disconfirms such an account of other pronouns, if any, for reasons explicated below.

That is, it· is a mere logical possibility that, for example, there could be an Interpretive description of sentential pronouns after verbs like *believe* but a non-Interpretive description of sentential pronouns with verbs like *manage*. This is a priori such an undesirable theory that[17] it would only be acceptable in the absolute absence of any alternative. Still worse, no doubt, would be the case where the Interpretivist was forced to adopt an Interpretive approach for certain sentential pronouns in situations where the pronouns having these as missing antecedent "containers" were in subject position, but a non-Interpretive approach when the relevant pronouns were in nonsubject position. However, it is at the best some unhappy combination of two theories like these to which Bresnan commits herself. To see this, one need only consider some cases.

Bresnan's examples of sentential pronouns which cannot serve as the "containers" for missing antecedents have without variation two crucial properties. First, in each case the sentential pronoun designates an event (or possibly an act) rather than a proposition or a fact, and, second and even more curiously, in each example the

---

[16] By *equivalent* here I refer to the possibility, which is quite real, that sentential pronouns may be properly describable not by deletion but by transderivational rules relating real derivations to "potential" derivations in which pronoun positions are occupied by antecedent structure. Such an approach has been suggested by some very interesting unpublished work by Edward Witten of Brandeis University.

[17] Undesirable because of its serious lack of generality in several senses, which are discussed in detail below.

pronoun which cannot have its missing antecedent "inside" a sentential pronoun is in subject position. Thus her examples are like (14)

(14)   My uncle has never ridden a camel but his brother finally managed **it**, although *it* was lame.

where I have italicized the pronoun which is in subject position and bold-faced the pronoun which designates an event. As we have seen, Bresnan correctly notes that the italicized *it* in such cases cannot, in our idiolects at least, designate the camel whose existence is guaranteed by the meaning of the sentential *it*. However, since her examples have these undiscussed event and subject properties, it is quite possible that the constraints in sentences like (14) are (from the point of view of the whole Missing Antecedent Phenomenon) simply accidental correlates of these special properties. By "accidental" here, I mean the properties might be special subrestrictions, idiolectally limited, positionally determined, etc., which are a function of principles independent of the basic nature of anaphoric connections. And this is in fact the case. For example, in my idiolect and in those of several other people I have asked, analogues of (14) are perfectly acceptable on the relevant interpretations if the bold-faced *it* is not in subject position.[18] Thus in cases like (14) the italicized *it* can perfectly well refer to the missing antecedent *camel* "inside" of the bold-faced pronoun:

(15)   My uncle has never ridden a camel but his brother finally managed **it** although he couldn't stay on *it* long.

In short, the restriction in (14) is a special feature of subject position, not a general feature even of relations with sentential pronouns relating to event clauses. Examples like (15) can be provided for each of Bresnan's event sentential pronoun examples, with the probable exception of the *any* case:[19]

(16)   ?My uncle didn't buy anything for Christmas, so my aunt did **it** for him and was surprised when a thief stole *it* from her.

(17)   Jack didn't cut Betty with a knife—Bill did **it** . . . and although he tried to hide *it* the police found *it* in his garden.

(18)   Jack didn't get arrested by an FBI man but **it** happened to Marsha and she is in real trouble because she tried to bribe *him*.

----

[18] G. Lakoff has pointed out to me that for many speakers the subject constraint is not functional and that Bresnan's original sentential pronoun examples are well-formed on the appropriate readings. Consequently, her criticism fails in an even more general way for these speakers. That is, she might be forced into the intolerable position of having an Interpretive description of sentential pronouns for some idiolects, a non-Interpretive description for others.

[19] Ross points out that even for sentences with *any*, the analogues to (15) are well-formed if the pronoun in subject position is not *it*. Hence:

(i)   My uncle didn't buy any marbles for Christmas so my aunt did it for him and they are all over the floor.

Thus the subject constraint seems to hold only for *it*.

Recalling now the fact that the Interpretive approach predicts that no Inter-pretively described sentential pronouns can serve as "containers" for missing ante-cedents, it follows that sentences like (15), (17), and (18) are not Interpretively describable. Thus the Interpretive theory of sentential pronouns is falsified for such cases. This leaves the choice of abandoning it entirely, for at least the class of sentential pronouns which designate events, or of adopting the theory mentioned abstractly earlier. That is, it could be claimed that the bold-face pronouns in examples like (14) are Interpretively described, while those in examples like (15) are non-Interpretively described. Not the least of the drawbacks of this weird view would seem to be the curious claims made about the bold-faced pronouns in examples like:

(19) My uncle has never ridden a camel but his brother finally managed **it**.

which would be described how? Interpretively? Non-Interpretively? Both?

It is already evident then, purely on the basis of a few factual observations like (15), (17), and (18), that not only does the argumentation of MA fail to support an Interpretive approach to sentential pronouns, it provides a clear disconfirmation of this approach, when coupled with such examples. Consequently, whatever other virtues Akmajian's Interpretive formulations may have, they are disconfirmed since (as Bresnan points out) they predict that sentential *it* designating events cannot serve as the "container" for missing antecedents, when the facts are otherwise.

So far I have dealt only with sentential pronouns designating events, where apparently the Missing Antecedent Phenomenon interacts in some idiolects with a constraint distinguishing subject and nonsubject positions, in a way which evidently misled Bresnan. However, it can be pointed out that in the case of sentential pronouns designating propositions, such as those occurring with verbs like *believe*, the possibility of serving as "container" for missing antecedents is even more generally realized. Thus there are such sentences as (20) where the italicized *it* refers to the missing antecedent "inside" of the bold-faced sentential pronoun:

(20) Harry doesn't believe that Joan found a unicorn but Bill does believe **it** and thinks *it* is eating grapes.

Bresnan accepts such examples but attempts to suggest that in such cases the italicized *it* has as its antecedent the occurring surface structure indefinite NP in the first clause, rather than some missing antecedent. Thus she argues that (21) (numbered (22) in her note)

(21) Harry doesn't believe that Bill saw a unicorn, although he (Harry) himself saw it. (it = unicorn)

shows that a pronoun can have such an indefinite NP as antecedent, even given the negation in front of *believe*. However, this is not the case, nor are such relations possible in general.

In particular, (21) can mean only something like (22), if anything:

(22) There exists a unicorn *u* such that Harry doesn't believe that Bill saw *u*
       although Harry saw *u*.

This type of reading, in which *believe* is under the scope of the existential quantifier,
rather than conversely, is irrelevant to the discussion of examples like (20) and their
relation to the Missing Antecedent Phenomenon. What is crucial is that (21) does
not have a reading with the scopes of *there exists* and *believe* reversed but that (20)
has a reading on which the italicized *it* refers to a unicorn and in which the existential
quantifier is under the scope of *believe*. It is such readings of (20) which are crucial,
since the missing antecedent part of the reading depends on the intervening clause
Bill does believe it. That is, if the antecedent of the italicized *it* in cases like (20) were
the surface NP *a unicorn*, then examples like:

(23) Harry doesn't believe that Joan found a unicorn but *it* is eating grapes.

could have readings of the form:

(24) Harry doesn't believe [there exists a unicorn *u* such that Joan found *u*]
       but *u* is eating grapes.

But, manifestly, the only relevant reading of (23) is:

(25) There exists a unicorn *u* such that Harry doesn't believe [that Joan found *u*]
       but *u* is eating grapes.

Thus examples like Bresnan's (22) have no bearing on the analysis of examples like
(my) (20), and it is seen that sentential pronouns designating propositions provide a
further class of counterexamples to the strong Interpretivist claim that sentential
pronouns cannot serve as the "containers" of missing antecedents.

Overall then, when looked at in terms of further relevant examples, the cases
discussed by Bresnan have properties that support conclusions opposite to those
she draws. In view of some more general theoretical factors, this is, I think, anything
but surprising. I will now turn to such factors.

C. Generalizations

Bresnan concludes by saying (1971, 596):

(26) "In conclusion, Grinder and Postal's [holistic thesis that all I − S = A
       must be explained by syntactic deletion rather than interpretive rules is
       incorrect]. *The notion I − S = A does not characterize a set of theoretically
       related phenomena*, and the problem of determining what is to be explained
       by transformation and what by interpretation must be solved case by case."
       (bracketing and emphasis mine: PMP)

These are rather strange conclusions. First, the "holistic thesis" hardly seems properly
attributable to the authors of MA in any exclusive sense, since it is implicit in the

somewhat ancient tradition of grammar which evolved such unitary terms as "ana-phora". Moreover, she ignores the fact that it is a priori desirable to attempt to discover such "holistic" (i.e. maximally general) theories.[20] In general, one does not want to have to invent new types of theoretical apparatus for each new type of linguistic phenomenon encountered. This is not a question of laziness or conservatism. Rather, it has to do with the fact that by seeking the most general use of maximally homogeneous apparatus, one is thereby providing a linguistic theory with the maxi-mally general laws. A theory which describes all anaphora with one type of apparatus provides an account in which it is claimed that all anaphora obeys the laws defining that apparatus. In short, the search for "holistic theses" in the author's sense is the search for maximally general principles of grammar. And, as Chomsky (1955, III: 72–73) pointed out at the very beginning of work in generative grammar, the search for the maximally general and "elegant" system is not properly distinguishable from the search for a system per se.[21] In other words, there is no better tool in the attempt to discover the proper linguistic theory than the principle of demanding the maximum generalization. If one can discover similar ways of describing superficially different and contrasting facts, this is surely no accident. Acquiescing to theoretically different descriptions of different facts at the initial stages of inquiry is in effect to give up the hope of serious theoretical understanding. Consequently, work must be governed by a principle of resistance to descriptive or theoretical proposals which involve severe restrictions of generality. Such proposals can only be accepted under the pressure of powerful empirical evidence, and even then, only tentatively.

It was seen in Section IIIB not only that Bresnan has failed to provide any evidence in favor of the italicized claim in (26), but also that the relevant empirical facts provide further counterevidence to the Interpretive view. But more importantly, her statement (26) does not consider two points. First, as just briefly explicated, were

---

[20] The last clause in (26), claiming the need to consider each case separately, is a misleading, grievously partial truth. While certainly each case must be looked at, it does not follow that what is shown about one class of cases does not bear on the analysis of others. In fact, there are strong evidential relations. For instance, if it is shown that a class of facts is properly describable by positing a transformation Passive in English, this provides a priori grounds for preferring the postulation of a similar rule to explain similar facts either in English or other languages, for only this is consistent with the search for a maximally general linguistic theory. To get down to cases, once it is shown that null verb phrase anaphors must have a syntactic description, as is done in Ross (1969) and MA, this provides a strong presumption that other types of anaphora must be described in the same terms unless this is shown to be impossible on empirical grounds.

[21] To quote (1955, III.72.3):

It is important, incidentally, to recognize that considerations of simplicity are in general not trivial or "merely esthetic". It has been recognized of philosophical systems, and it is, I think, no less true of grammatical systems, that the motives behind the demand for economy are in many ways the same as those behind the demand that there be a system at all.

The point has also been made explicitly for anaphora before. Thus Lakoff (1968, II.5) remarked:

Given this, I will make the claim that the formation of anaphoric pronouns should be a single unified process: if Assumption 1 is true for some anaphoric pronouns, then it is true for all of them. The basis for this claim is Occam's razor: why should there be two processes of rather different sorts to do the same job?

it to begin to appear that different types of anaphora were not describable by the same type of apparatus, this would be a cause for considerable distress, and the linguistic theorist should immediately be pressured toward the attempt to resolve the problem in terms of some uniform solution. In short, the conclusion that "things are just different" is always the worst possible case. Bresnan's comments, on the other hand, might suggest that she is happy with the lack of generalization, which she erroneously assumes to have been shown. But the only possible basis for such happiness is that such a lack of generalization would leave at least some nonempty domain for Interpretive description. The implication is that it is preferable for contemporary linguistic theory to give up the search for a maximally general theory of anaphora rather than abandon the claim that Interpretive approaches to anaphora correctly cover some nonnull set of facts. Bresnan's commentary ignores the limitations of this view, and the fact that only a mass of empirical evidence of the strongest sort for a variety of anaphoric processes would make it reasonable to consider accepting the conceptual limitations of a nongeneral theory of anaphora. In sum, where the author should be, at the worst, saying something like: "Look, it's terribly unfortunate but apparently these facts force us to have two different descriptive systems for anaphora", she is, instead, strangely pleased with such a consequence. Properly, of course, the logic of this discussion extends far beyond the range of facts covered here, and far beyond the domain of anaphora, to the whole field of grammar, where, I suggest, similar conclusions can be drawn about the inferior status of Interpretive theories vis à vis relatively homogeneous and general conceptions of grammar like generative semantics.[22]

It should now be clear, I hope, why it was remarked above (Section IIIA) that Bresnan's claim that MA draws more general conclusions than are warranted by its argumentation is only a partial truth. In fact, if the pattern of argument sketched above is accurate, the chief limitation of MA in this regard is literary. What should have been said there is that given the demonstration of the non-Interpretive character of Verb Phrase Deletion and several other anaphoric processes, there is an a priori presumption that other anaphoric types, like sentential pronouns, must be described in accord with the (non-Interpretive) devices shown to be required for Verb Phrase Deletion. In this sense, in the absence of direct evidence to the contrary, the arguments of MA do support a non-Interpretive account of sentential pronouns. Bresnan attempts to provide evidence to the contrary. But as already seen, this attempt does not succeed.

I have argued that Bresnan has provided no justification for the view that grammars of human languages require Interpretive principles for describing anaphora and, indeed, on the basis of the discussion and references in Section II, this comment seems to be generalizable. In fact, further factual arguments related to her examples have been found against an Interpretive approach to anaphora, in particular, against

---

[22] I have developed the more general line of reasoning in a far from fully adequate manner in Postal (to appear). Further exploration of these matters is surely in order, but I cannot go into them here.

an Interpretive approach to English sentential pronouns. But, second, and even more fundamentally, there are at least two excellent arguments of a still different sort which reveal the unity of the anaphoric processes of the sort under discussion (at least), that is, which show that they must be described in terms of pieces of descriptive apparatus which share basic properties. Since the facts underlying one such argument type are well known, it is doubly strange that Bresnan should assert the proposition expressed in the italicized portion of (26).

Let us restrict attention to sentential pronouns and null anaphora of the sort produced by the rule Verb Phrase Deletion. Bresnan's claim is that the former are to be Interpretively described, while she is forced to admit, on the basis of MA alone, that this is out of the question for the latter. But, as is well-known, both of these processes are subject to the Backwards Condition, a fact which was pointed out by Bach several years ago, and which was noted even as early as the 1968 version of my *Cross-Over Phenomena*.[23] That is, both sentential *it* anaphors and the null anaphors derived by Verb Phrase Deletion cannot precede their antecedents unless they are in subordinate clauses:

(27) a. *Melvin did so (= "punch a cop") (too) and Harry punched a cop.
  b. *Melvin managed it (= "he punched a cop") (too) and Harry punched a cop.

(28) a. *Melvin did so (= "punch a cop") before Harry punched a cop.
  b. *Melvin managed (to do) it (= "he punched a cop") before Harry punched a cop.

but

(29) a. If Melvin could do so (= "punch a cop"), then Harry can punch a cop.
  b. If Melvin could manage (to do) it, then Harry can punch a cop.

(30) a. The girl who previously refused to do so (= "kiss Melvin") finally kissed Melvin.
  b. The girl who previously couldn't manage it (= "she kiss Melvin") just kissed Melvin.

It is, of course, difficult enough to construct a statement of the Backwards Condition which can cover such cases even if they all have a non-Interpretive description. With the bifurcated mode of description that Bresnan proposes, clearly this would be even more difficult, possibly out of the question. Moreover, even if possible, the specification of such regularities as constraints governing two totally different kinds of rules in different components of the grammar could at the absolute best achieve a kind of primitive descriptive adequacy. It would remain a weird and inexplicable accident that such congruence existed. That is, true explanation would be

---

[23] Cf. Postal (1968, 18).

precluded. On the other hand, given a uniform derivation for anaphoric processes based on syntactic-deletion and/or its extensions, a single, uniform statement of the constraints, providing the desired explanation, is at least possible. Bresnan works in a framework which often speaks of "capturing generalizations" and the desirability of doing so. Ignoring the similarity in constraints on null verb phrase anaphors and sentential pronouns is thus even incompatible with the principles which have been internally taken to underly Interpretive work.

Moreover, there is another argument of essentially the same form which reveals regularities governing both null verb phrase anaphors and sentential pronouns. There is a principle which prohibits ambiguity of anaphoric connection for both these processes across a conjunction boundary.[24] Hence one cannot say:

(31) a. *Melvin kissed Sylvia and Arthur caressed Lucy but Max refused to do so. (= either "kiss Sylvia" or "caress Lucy")
     b. *Melvin kissed Sylvia and Arthur caressed Lucy but Max was unable to manage it. (= either "kiss Sylvia" or "caress Lucy")
(32) a. *Either Tony called the police or the thief escaped but Melvin didn't do so. (= either "call the police" or "escape")
     b. *Either Tony called the police or the thief escaped but Melvin couldn't manage (to do) it. (= "call the police" or "escape")

Consequently, the same type of argument given for the Backwards Condition constraints obtains, and it is even clearer that null verb phrase anaphors and sentential pronouns must be homogeneously described.

Further empirical arguments in favor of the unity of the anaphoric processes involved in sentential pronouns and verb phrase deletion and against the necessarily bifurcated Interpretive approach can be constructed. Bresnan states clearly that the Interpretive principles are to operate on surface structures (1971, 590):

Accordingly, (1) would not be derived from (4); instead, the meaning of *it* in (1) would be supplied by an interpretive rule operating on (1) itself.

It is not difficult to see that such an approach is empirically impossible. Consider, for instance, examples like:

(33)   Melvin didn't seduce a nurse but George did although I was not aware of *it* even though Tony claimed I was.

The point is that the null verb phrase anaphor after *did* must have, as MA shows and Bresnan grants, a meaning assignment which depends on the underlying structure of the anaphor. What then of the italicized sentential *it*? This is interpreted to mean 'George seduced a nurse'. According to the Bresnan-Akmajian view, this *it* is supplied

[24] This constraint, like all those which systematically block ambiguities, must be formulated in trans-derivational terms, that is, the rule is not specifiable on structure(s) internal to a single derivation, but must be defined on sets of derivations. This particular constraint is remarkably general, and covers a wide range of anaphoric types, stronglv suggesting their underlying unity.

a meaning by an Interpretive rule "operating on (33) itself". But there is no sense in which the surface structure of (33) contains the information which the interpretation of the *it* would require, since the surface antecedent of the *it* is the fragment *George did*. Clearly, given the results in MA which even Bresnan accepts, the interpretation of the *it* must depend on the underlying structure of *George did*, to which the Interpretive rule, by definition, has no access. To make matters even worse, the problem is compounded when it comes to questioning how the null verb phrase anaphor after the second *was* is to be assigned its meaning. MA shows again that this assignment must be by way of underlying structure. Since this null anaphor in (33) is interpreted to mean 'aware that George seduced a nurse', it follows that the underlying structure of the antecedent of the anaphor must contain this information. But, in the Interpretive proposal, the underlying structure of the antecedent of the null anaphor after *was* is simply *I was (not) aware of it*, which does not contain the appropriate information. Hence, unwittingly, the Interpretivist here is committed to just that Interpretive theory of Verb Phrase Deletion which MA, among other works (cf. Ross 1969), shows to be impossible. Thus Interpretivists will necessarily involve themselves in contradictions if·they attempt to accept the results of MA for Verb Phrase Deletion, but claim that sentential pronouns are to be described Interpretively. For this ignores the fact, shown in (33), that some verb phrase anaphors have sentential pronouns in their antecedent structures and conversely. Examples like (33) seem, therefore, to provide the ultimate disconfirmation of Bresnan's approach.

In summary, there appears to be ample sharp and conclusive evidence that Bresnan's (italicized) claim in (26) is not only false, but that it is likely the very opposite of the truth.[25]

---

[25] As if the lack of generality involved in advocating a grammar of anaphora containing both Interpretive and non-Interpretive types of descriptive apparatus were not unfortunate enough, Bresnan worsens things by at least one further order of magnitude. She says:

> ... it is almost always possible to *infer* an antecedent from the linguistic (or other) context. *Distinguishing between inferred and grammatically assigned antecedents is a general problem in the study of anaphora.* (emphasis mine: PMP)

This is an assumption for which she gives no argument or attempted support. Why just distinguish grammatical and "inferred" antecedent assignment? Why not a three-way distinction, or an eleven-way one? Bresnan gives a variety of examples due to Ross, such as:

    (i)   If you baste the meat, you'd better put some on the potatoes, too. [some = 'juice']
    (ii)   Max stabbed me before I even realized he had one. [one = 'knife']

But the only comment in support of the "inference"-grammar distinction is the remark:

    Yet it is unlikely that antecedents are grammatically assigned in any of (16)–(19).

But this just repeats the unsupported assumption. Examples like (i) and (ii) have an ambiguous status. For some, they are ill-formed. For others, they are acceptable. However, even for those who, like the present writer, reject them, it is possible to "construct" the reading which they represent. That this is, however, simply a function of the normal extension of a grammatical possibility into a banned environment rather than some new process of "inference" is shown by the fact that these readings depend on grammatical conditions, in particular, on the Backwards Condition which controls so much of anaphora. Thus compare the possibility of getting the anaphoric readings in (i)–(ii), where the Backwards Condition is met, with the impossibility (or at least considerably greater difficulty) in cases like:

    (iii)   I didn't realize Max had one (= 'knife') but he stabbed me.

IV. Conclusion

In this almost completely critical and negative commentary, I have tried to make several points. First, in Section II, I have attempted to add to the body of analyses showing the incorrectness of particular Interpretive claims about anaphora. More centrally, in Section III, I have tried to redress what seem to me to be the erroneous conclusions which Bresnan draws from the combination of MA and a few incorrectly interpreted observations. I think there is no way in which the arguments of MA can lend support to the Interpretive approach to anaphora. On the contrary, in the very cases brought up by Bresnan, that argumentation provides a further disconfirmation of the interpretive ideas of the sort given and referred to in Section II, and in MA itself.

Still more fundamentally, I have tried to suggest that there are basic theoretical principles, concerning the search for maximally general principles of grammar, which a priori count against a bifurcated approach to anaphora, and which a posteriori, in combination with regularities like those involving the Backwards Condition and the no ambiguity condition, provide empirical support for a unitary approach, at least with respect to the class of cases examined in MA, Bresnan's note, and this discussion. Overall then, it seems that the position of an Interpretive approach to anaphora has been considerably worsened and that the burden of proof seems to lie entirely with Interpretive supporters to provide some grounds for avoiding the natural conclusion . . . that the Interpretive conception of anaphora is simply inherently incorrect.[26]

References

Akmajian, A. (1969) "An Interpretive Principle for Certain Anaphoric Expressions," unpublished paper, MIT.

This shows that Bresnan's purported inference principles would have to be governed by the Backwards Condition. The same is true of the principle banning ambiguity of anaphoric connection across conjunction boundaries. Thus the connection in examples like (iv) is precluded or worsened in the same way as in examples like (31) in the text:

(iv)   Harry didn't put any (= either 'juice' or 'salt') on the salad but he basted the meat and he salted the potatoes.

Consequently, with respect to two separate types of restrictions on anaphoric connections, the facts which Bresnan points to are governed by grammatical conditions. Therefore, her purported "inference" principles would have to redundantly incorporate two separate environmental statements also present in grammatical rules. This necessary redundancy and loss of generalization then shows directly the unity of grammatical and "inference" principles in such cases; that is, it shows the nonexistence of the purported "inference" principles.

Judging from the facts Bresnan has put forward, and all others known to me, the "general problem" in the italicized portion of the quote is a pseudoproblem. Again, of course, one would wish a priori that no such distinction existed in order to leave open the possibility of a maximally unified and general theory of anaphoric connections.

[26] If there is any plausibility to Interpretive approaches, it seems to lie in the fact that supporters of such views tend to consider a very limited and inadequate set of alternatives. Thus, for instance, Dougherty (1969) compares an Interpretive theory to a so-called "transformational" theory which, as far as I know, had been more or less abandoned by any adherents at least two years before. When one considers more flexible alternatives, however, in particular those which make use of global rules in the sense of Lakoff (1970), it is difficult to see any virtues in Interpretive notions.

Akmajian, A. (1970) *Aspects of the Grammar of Focus in English*, unpublished Doctoral dissertation, MIT.

Bresnan, J. (1971) "A note on the Notion 'Identity of Sense Anaphora'," *Linguistic Inquiry* II.

Bresnan, J. (to appear) "On Sentence Stress and Syntactic Transformations," *Language* 47.

Cantrall, W. R. (1969) "Pitch, Stress, and Grammatical Relations," in *Papers from the Fifth Regional Meeting of the Chicago Linguistic Society*, Department of Linguistics, University of Chicago, Chicago.

Chomsky, N. (1955) "The Logical Structure of Linguistic Theory," unpublished manuscript, Cambridge.

Chomsky, N. (1970) "Deep Structure, Surface Structure, and Semantic Interpretation," in R. Jakobson and Shigeo Kawamoto, eds., *Studies in General and Oriental Linguistics*, TEC Corporation for Language and Educational Research, Tokyo.

Chomsky, N. (to appear) "Some Empirical Issues in the Theory of Transformational Grammar," in P. S. Peters, ed., *Goals of Linguistic Theory*, Prentice-Hall, Englewood Cliffs, New Jersey.

Dougherty, R. (1969) "An Interpretive Theory of Pronominal Reference," *Foundations of Language* 5.

Grinder, J. and P. M. Postal (1971) "Missing Antecedents," *Linguistic Inquiry* II, 269–312.

Harris, Z. S. (1968) *Mathematical Structures of Language*, Interscience Publishers, New York.

Jackendoff, R. (1969) *Some Rules of Semantic Interpretation for English*, unpublished Doctoral dissertation, MIT.

Jackendoff, R. (1971) "Gapping and Related Rules," *Linguistic Inquiry* II, 21–35.

Lakoff, G. (1968) "Pronominalization and the Analysis of Adverbs," *Mathematical Linguistics and Automatic Translation*, Report No. NSF-20, The Computation Laboratory, Harvard University, Cambridge.

Lakoff, G. (1970a) "Global Rules," *Language* 46.3.

Lakoff, G. (1970b) "Pronominalization, Negation, and the Analysis of Adverbs," in R. Jacobs and P. S. Rosenbaum, eds., *Readings in English Transformational Grammar*, Ginn and Company, Waltham, Mass.

Postal, P. M. (1968) *Cross-Over Phenomena* (1970 version published by Holt, Rinehart & Winston, New York) in *Specification and Utilization of a Transformational Grammar* (Scientific Report No. 3), Thomas J. Watson Research Center, IBM, Yorktown Heights, New York.

Postal, P. M. (1972) "A Global Constraint on Pronominalization," *Linguistic Inquiry* III, 35–59.

Postal, P. M. (to appear) "The Best Theory," in P. S. Peters, ed., *Goals of Linguistic Theory*.

Ross, J. R. (1967) *Constraints on Variables in Syntax*, unpublished Doctoral dissertation, MIT.

Ross, J. R. (1969) "Guess Who," in *Papers from the Fifth Regional Meeting of the Chicago Linguistic Society*, Department of Linguistics, University of Chicago, Chicago, Illinois.

Thomas J. Watson Research Center
IBM
Box 218
Yorktown Heights, New York 10598