ON SYNTACTIC CONSTITUENCY AND INTUITIVE ABHORRENCE

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1.   Introduction

In this working paper, a theoretic intuition from the field of generative grammar is analysed.   The analysis will be at a methodological, not a substantive, level and its aim will be "descriptive" rather than "evaluative".[1] Hence this paper could be accurately, if ponderously, subtitled Towards a methodological analysis of a theoretic intuition from generative grammar.

For lack of space, we cannot present here any detailed distinction between theoretic intuitions and other, partly similar, methodological objects in generative grammar.[2]   The most that we can do is to sum up four of the specific ways in which theoretic intuitions differ from linguistic intuitions.

First, linguistic intuitions are about linguistic properties of utterances, for instance (un)acceptability, (non)ambiguity, and (non)synonymy.[3] Theoretic intuitions, however, are about theoretically postulated aspects of natural language(s), for instance the organization of grammar, the acquisition of grammar, linguistically significant generalizations, structural descriptions, and linguistic rules.[4]   They are thus about two non-overlapping classes of "objects in linguistic reality": two distinct classes of target objects.

Second, linguistic intuitions spring from the native speaker's linguistic competence,[5] theoretic intuitions do not.   Where it is that the latter do spring from is not clear, but one important source of the theoretic intuitions of a given linguist seems to be likely to be the epistemological matrix within which he works (including both his systematic and his non-systematic knowledge of natural language(s)).   In short, linguistic intuitions and theoretic intuitions spring from different sources.

Third, all (potential) agents of theoretic intuitions, that is, skilled generative linguists, are agents of linguistic intuitions, that is, native speakers.   But not all agents of linguistic intuitions are (potential)

agents of theoretic intuitions.[6]   Clearly, then, linguistic intui-
tions differ as regards their respective categories of <u>intuitive agents</u>.

Finally, theoretic intuitions have not the same <u>epistemological status</u>
as linguistic intuitions.   Linguistic intuitions, as a class of intuitive
judgements, have the following two epistemological properties.   One, they
are nonreasoned, that is, without any de facto objective justification by
their intuitive agents, the native speakers.[7]   Two, their intuitive
agents are incapable in principle of giving objective justification for
them.[8]   In contrast, theoretic intuitions have the following epistemo-
logical properties.   One, a given theoretic intuition is either non-
reasoned, that is, without <u>any</u> de facto objective justification by its
intuitive agent, a skilled generative linguist, or it is underjustified,
that is, without <u>adequate</u> de facto objective justification by its intuitive
agent.[9]   Two, the intuitive agents of theoretic intuitions are capable
in principle of giving objective justification for them.[10]

Now, the theoretic intuition to be analysed in this paper occurs in
Akmajian and Wasow' study "The constituent structure of VP and AUX and
the position of the verb <u>be</u>".[11]   Its target object is a syntactic
structural description.   Before presenting our analysis of this theoretic
intuition, let us sketch the context in which it is located.   Akmajian
and Wasow[12] argue that the English transformational rule of Affix
Hopping/Affix Attachment, familiar from Chomsky's <u>Syntactic Structures</u>,[13]
should be "split ... into two separate transformations: one having the
effect of placing the affixes <u>-en</u> and <u>-ing</u>, ordered before VP-Deletion
and VP-Fronting; and another rule placing tense affixes, ordered after
these rules".   The analysis which the authors propose involves six trans-
formational rules, ordered as below:

(1)   (i)   EN/ING-Hopping
        (ii)   <u>There</u>-Insertion
        (iii)   VP-Deletion
                VP-Fronting
        (iv)   Tense-Hopping
        (v)   <u>Do</u>-Support

In their argumentation for this analysis the authors adduce, among others, the following three considerations. First, this analysis resolves two ordering paradoxes. (The nature of these paradoxes is indicated in 2.2 below.) Second, this analysis makes possible the avoidance of certain derived structures which are "intuitively abhorrent". It is at this juncture, then, that the theoretic intuition to be analysed here makes its appearance. Third, the derived structures avoided by means of this analysis are not only "intuitively unnatural"; they are, moreover, incorrect as the input to the transformational rule of VP-Deletion. The authors' presentation of these last considerations is quoted in 2.1 below.


2.   The analysis

2.1   Quotation of the theoretic intuition in its original context

The second and third of their above-mentioned considerations for the analysis (1) are presented by Akmajian and Wasow in the following terms:[14]

(2)   "By splitting the rule of Affix-Hopping into two separate transformations, we have already managed to avoid the rule ordering paradox cited in Section 1.   Taken on its own, this may seem to be a minor result.   However, it turns out that our proposed analysis has rather interesting consequences for another area of English syntax, namely, the problems of derived structure produced by the rule of There-Insertion ... To see what this entails, consider pairs of sentences such as the following:

[18]   a.   Many people are dancing in the fields.
       b.   There are many people dancing in the fields.

The structure underlying [18a] prior to There-Insertion could be represented as [19a] :

[19]   a.
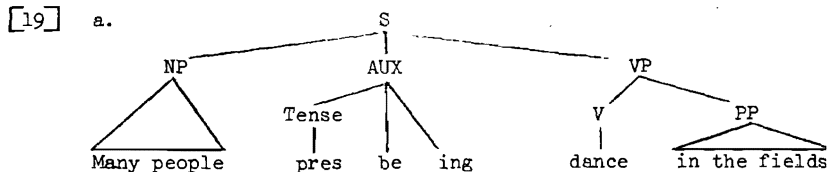
When There-Insertion applies to this structure, the subject NP must be inserted immediately after be within the AUX; for if it were to be inserted /213 outside the AUX, to the right of -ing, it would prevent the affix from undergoing Affix-Hopping:
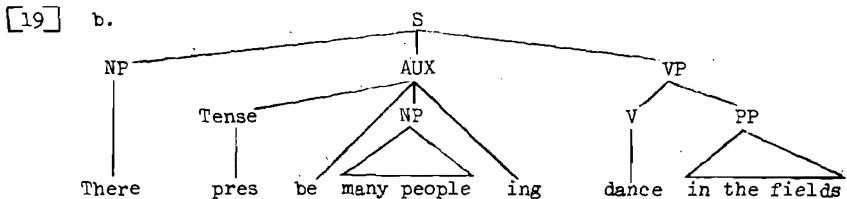
[19]   b.

... Here the intuitively abhorrent derived structure of [19b] is a
direct consequence of assuming a single rule of Affix-Hopping
ordered after There-Insertion.

However, notice what happens if we assume that Affix-Hopping is
broken down into two components and that EN/ING-Hopping applies
before There-Insertion.   Starting again with structure [19a] ,
EN/ING-Hopping would apply first, producing [20a] as its output:

[20]   a.
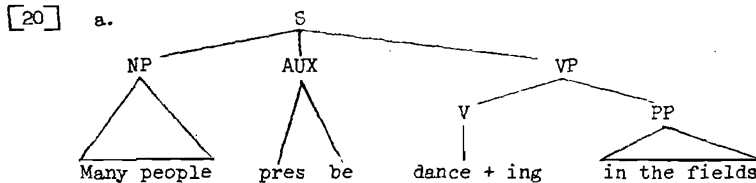
(Keep in mind that the affix pres will be attached to its verb by
the later rule of Tense-Hopping.)   Since the affix -ing has been
attached to the main verb before There-Insertion applies, there is
now no need whatever to insert the subject NP into the AUX as part
of the operation of There-Insertion.   Instead, a more natural
derived structure can be assigned by the rule, which we propose is
the following:

[20]   b.
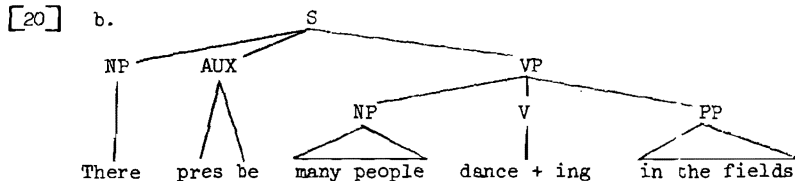
/214 As a result of assuming the existence of an early rule of
EN/ING-Hopping, we are now able to avoid structures such as [19b].

But now we must point out that structure [20b] is not merely a
more 'natural' derived structure --- it is, indeed, the structure
required as input to other rules of the grammar.   For, consider
again the rule of VP-Deletion and its operation in sentences such
as the following:

[21]   John said that there wouldn't be many people dancing in
       the fields, but there are _____.

What has been deleted from the second clause of [21] is the phrase
many people dancing in the fields.   If we assume that structure
[20b] is the structure of the second clause of [21] , then the
rule of VP-Deletion can operate in the simplest possible fashion to
derive the elliptical clause:

[22]

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                                    S
              S              but           S
      NP    AUX    VP      NP    AUX            VP²
                  V   NP                  NP    V      PP
    John  past  say  it S   there  pres  be  many people  dancing  in the fields
                       NP       AUX            VP¹
                                 M          NP      V        PP
                  There    past will not be  many people  dancing  in the fields
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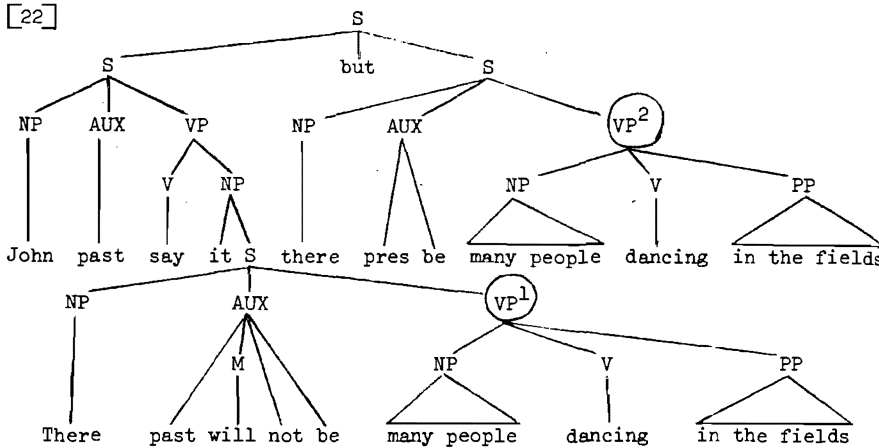
On our analysis, the phrase many people dancing in the fields forms a
single VP constituent.   Hence, the rule of VP-Deletion can delete VP²
in [22] under identity with VP¹, and elliptical sentences such as
[21] can be derived in a straightforward way.   The reader may wish
to consider again a /215 derived structure such as [19b] with
respect to the rule of VP-Deletion.   Since the NP many people is
within the AUX, there is no single constituent that VP-Deletion could
operate on in deriving sentences such as [21] .   Hence [19b] is not
only intuitively unnatural, but is incorrect as the input for VP-
Deletion.

To sum up so far, our postulation of an early rule of EN/ING-Hopping
(1) avoids an ordering paradox, and (2) allows us to postulate the
correct derived structure for There-Insertion ..." (15)

2.2   Substantive elucidation of the original context

Akmajian and Wasow argue that there exist two particular paradoxes of rule
ordering. (16)   Let us elucidate these paradoxes briefly, taking first the
one that involves the rules of Affix Hopping/Affix Attachment and VP-Deletion.

VP-Deletion is supposed to have the effect of transforming structures under-
lying sentences like (i) below into structures underlying sentences like
(ii) below:

(3)   (i)   <u>John Dean was crying in court, and James McCord was crying in court, too</u>.

   (ii)   <u>John Dean was crying in court, and James McCord was _____, too</u>.

VP-Deletion "operates on single constituents, i.e., ... the rule is stated roughly as follows": (17)

(4)   VP-Deletion (Optional)

SD :	X	–	VP	–	Y	–	VP	–	W
	1		2		3		4		5
SC :	1		2		3		$\emptyset$		5

   where: 2 = 4

The first ordering paradox argued for is, roughly, the following.   On the one hand, generation of strings like (3)(ii), which contain <u>-ing</u>, requires the order of rules indicated below:

(5)   (i)   Affix Hopping
   (ii)   VP-Deletion

For such strings, the affix <u>-ing</u> needs to have hopped into VP before the right-hand VP is deleted.   On the other hand, generation of strings like (6)(ii), which contain Tense but not <u>-ing</u>, requires the opposite order of rules.

(6)   (i)   <u>The CIA guards our freedoms, and the FBI guards our freedoms, too</u>.

   (ii)   <u>The CIA guards our freedoms, and the FBI does _____, too</u>.

That is, for strings like (6)(ii) the order of rules required is:

(7)   (i)   VP-Deletion
   (ii)   Affix-Hopping

Here, if the affix Tense hopped into VP before the right-hand VP was deleted,

then the right-hand clause would have its occurrence of Tense deleted
along with its VP; hence <u>Do</u>-Support would not be able to apply; hence
<u>does</u> of (6)(ii) could not be generated.

The second ordering paradox argued for is similar to the one just indicated
It involves the rules of Affix-Hopping and VP-Fronting. The operation of
VP-Fronting is illustrated by strings such as the following:

(8)   (i)   <u>They all said that John would pass an exam one of these</u>
            <u>days, and pass an exam he did!</u>

     (ii)   <u>Mary predicted that her husband would enjoy a night out,</u>
            <u>and enjoying it he is!</u>

   (iii)   <u>I was told that I couldn't climb that mountain, but climb</u>
            <u>it I will!</u>

Generation of the second clause of strings like (8)(ii) requires the fol-
lowing order of rules:

(9)   (i)   Affix-Hopping
     (ii)   VP-Fronting

For such strings, too, <u>-ing</u> needs to have hopped into VP before the right-
hand VP is affected by the second rule --- in this case, fronted. Gene-
ration of the second clause of strings like (8)(i), however, requires the
opposite order of rules:

(10)   (i)   VP-Fronting
     (ii)   Affix-Hopping

Here too, if Tense hopped into VP before the right-hand VP was fronted,
then <u>did</u> could not be generated.

2.3   The target object of the theoretic intuition

In the excerpt (2), Akmajian and Wasow are concerned with, among other
things, the syntactic analysis of the following English sentence:

(11)   There are many people dancing in the fields.

In the deep structure of this sentence the noun phrase many people occurs
in the subject position but it is displaced, they assume, by the rule of
There-Insertion.   As a structure generated by this rule, the structure of
their diagram [19b] is "intuitively abhorrent" to the authors.   The
alternative structure of their diagram [20b] is, they consider, "more
natural".   Note that the structures to which the authors apply the two
expressions just quoted are derived syntactic structures.   Thus the
target objects of the theoretic intuitions hinted at here are just that:
derived syntactic structures.

2.4   A paraphrase of the content of the theoretic intuition

So far, mostly, we have spoken as if the excerpt (2) contained only one
theoretic intuition.   In fact, however, two theoretic intuitions seem
to be involved here: one of them "comparative" and the other "non-compa-
rative".   Let us paraphrase the content of each.

(12)   THE NON-COMPARATIVE THEORETIC INTUITION

As a derived syntactic structure, [19b] of the excerpt (2)
is unnatural/abhorrent in that many people, which occurs in
subject position in the deep structure, in [19b] forms part
of the AUX node.

(13)   THE COMPARATIVE THEORETIC INTUITION

As derived syntactic structures, [20b] of the excerpt (2) is
more natural than [19b] in that many people, which occurs in
subject position in the deep structure, in [20b] forms part
of the VP node but in [19b] forms part of the AUX node.

In the present analysis, however, no attempt will be made to distinguish
consistently between (12) and (13). This line of approach is in accord
with the fact that they have an important element of content in common
with each other. In order to exhibit this common element it is neces-
sary to "unpack", or explicate, their respective contents somewhat. Recall
that the comparative one asserts that the derived structure of [20b] is
more natural than that of [19b] . Therfore, this theoretic intuition
implies a certain specific judgement, namely

(14)   the specific judgement that the structure of [19b] is less
        natural than that of [20b] .

Recall, too, that the non-comparative theoretic intuition (12) asserts
that the structure [19b] is unnatural. Therefore, the non-comparative
intuition implies a certain general judgement, namely

(15)   the general judgement that the structure [19b] is less natural
        than all more natural structures.

The above specific judgement, therefore, merely represents a particular
one of a whole class of instances: a class whose existence is consistent
with the above general judgement. But, in turn, this general judgement
is implied by the non-comparative intuition (12). Accordingly, an element
of content common to the two theoretic intuitions is this: that the
structure of [19b] is less natural than all more natural structures.
Of course, what the comparative theoretic intuition asserts that the
non-comparative one does not assert is that the class of more natural struc-
tures includes the structure of [20b] .

2.5   The epistemological properties of the theoretic intuition

We come now to the epistemological properties of the Akmajian-Wasow theore-
tic intuition that the derived structure represented in their diagram
[19b] is less natural than all more natural derived structures. The
excerpt quoted in (2) above suggests that, for Akmajian and Wasow, this
theoretic intuition has undergone a certain epistemological evolution. That

is, this theoretic intuition has gained a certain amount of justification.
Because of this evolution, two phases at least may be distinguished in the
epistemological history of this theoretic intuition: an earlier phase and
the present phase.   Accordingly, the comments offered hereafter will be
divided between these two phases.

2.5.1   The empirical evidence offered in favour of the theoretic intuition

Consider first the empirical evidence which Akmajian offer in favour of
their theoretic intuition.

EARLIER PHASE:
In an earlier phase this theoretic intuition had no explicit justification
in terms of (direct) empirical evidence.

PRESENT PHASE:
In the present phase this theoretic intuition has no explicit justifica-
tion in terms of (direct) empirical evidence.

2.5.2   The systematic considerations offered in favour of the theoretic intuition

Consider next the systematic considerations which Akmajian and Wasow offer
in favour of their theoretic intuition.

EARLIER PHASE:
In an earlier phase this theoretic intuition had no explicit justification
in terms of any systematic considerations.

PRESENT PHASE:
In the present phase this theoretic intuition has some, implicit, justifi-
cation in terms of one or another systematic consideration. Essentially,
this consideration is based on two facts.   There is the fact that Akmajian
and Wasow provide explicit justification for their structure [20b] over
their structure [19b] in terms of three sorts of evidence: empirical,
hypothetical, and metascientific.   And there is the fact that the theore-
tic intuition under consideration serves in an evidential role which, of

the structures just referred to, favours ⎡20b⎤ over ⎡19b⎤ . Both of
these two points need to be presented in greater detail. For a detailed
presentation of the first point, consult 2.6 below, under the heading
PRESENT PHASE. Right now, we turn to a more detailed presentation of
Akmajian and Wasow's justification for the structure of their diagram ⎡20b⎤ .

Recall that Akmajian and Wasow are arguing against the analysis --- due
to Chomsky (1957) --- in terms of which Affix-Hopping is a unitary rule,
and for an analysis --- their own --- in terms of which Affix-Hopping
is replaced by two rules, namely an earlier rule of EN/ING-Hopping and a
later rule of Tense-Hopping. Now, against this background, consider again
the following remarks by Akmajian and Wasow:

(16)   "... ⎡20b⎤ ... is ... the structure <u>required</u> as input to other
        rules of the grammar ... If we assume that structure ⎡20b⎤ is
        the structure of the second clause of ⎡21⎤ ⎡= <u>John said that</u>
        <u>there wouldn't be many people dancing in the fields, but there</u>
        <u>are _____. --- W.K.W.</u>⎤ , then the rule of VP-Deletion can
        operate in the simplest possible fashion to derive the ellip-
        tical clause ... Hence ⎡19b⎤ is not only intuitively unnatural,
        but is incorrect as the input for VP-Deletion." (18)

The authors' text here contains several individual arguments. Five of
these will now be taken up. (19)

(17)   <u>Argument 1</u> (20)

        If there is an earlier rule of EN/ING-Hopping distinct from a
        later rule of Tense-Hopping,
        then the structures derived by <u>there</u>-Insertion are ones like
        ⎡20b⎤ and not ones like ⎡19b⎤ .

        The structures derived by <u>there</u>-Insertion are ones like ⎡20b⎤
        and not ones like ⎡19b⎤
        _____

        Therefore, there is an earlier rule of EN/ING-Hopping distinct
        from a later rule of Tense-Hopping.

In Argument 1, the evidence presented is hypothetical; hence the eviden-
tial statement is itself in need of support. (21) Support for this eviden-
tial statement is provided in terms of the following, further, argument.

(18)   Argument 2

  If the structures derived by there-Insertion are ones like
  ⌈20b⌉ and not ones like ⌈19b⌉ ,
  then ⌈20b⌉ but not ⌈19b⌉ is a correct input for VP-Deletion.
  ⌈20b⌉ but not ⌈19b⌉ is a correct input for VP-Deletion.
  _____

  Therefore, the structures derived by there-Insertion are ones
  like ⌈20b⌉ and not ones like ⌈19b⌉ .

In Argument 2 also, the evidence presented is hypothetical; here too,
therefore, the evidential statement is itself in need of support. Empirical
support for the evidential statement of Argument 2 is provided by yet another
argument, one statable as below:

(19)   Argument 3

  If ⌈20b⌉ but not ⌈19b⌉ is a correct input for VP-Deletion,
  then sentences like ⌈21⌉ are grammatical.

  Sentences like ⌈21⌉ are grammatical.
  _____

  Therefore, ⌈20b⌉ but not ⌈19b⌉ is a correct input for
  VP-Deletion.

Argument 3 supplements Argument 2 and, in turn, Argument 2 supplements
Argument 1.[22]. The effect of the argumentation built up in this way is
to provide the Akmajian-Wasow analysis with hypothetical evidence and with
indirect empirical evidence.   In addition, however, Akmajian and Wasow
invoke at least two acceptability standards in favour of their analysis.[23]
One of these acceptability standards is based on a notion of "greatest pos-
sible simplicity", the other on a notion of "theoretical fit".[24]   The
authors' application of these acceptability standards can be partially
explicated by means of the two arguments below, in each of which one of
these acceptability standards plays the role of major premiss.[25]   The
first of these, in particular, is quite complex.

(20)   <u>Argument 4</u>

If, given two alternative grammatical analyses A, and A_2, it is
the case that, whereas

(i) A_1 postulates a transformation whose derived structures
are such that, from them, a given existing transformation
T_1 will form further derived structures which are correct
as the input for a given, other, existing transformation
T_2,

(ii) A_2 postulates a transformation whose derived structures
are such that, from them, T_1 will form further derived
structures which are wrong as the input for T_2,

then at the level of acceptability assign A_1 a greater measure
of merit than A_2.

Given the alternative grammatical analyses by Akmajian and Wasow
(1975) and Chomsky (1957), it is the case that whereas

(i)   the analysis by Akmajian and Wasow (1975) postulates a
rule of EN/ING-Hopping whose derived structures are such
that, from them, the existing rule of <u>there</u>-Insertion
will form further derived structures which are correct
as the input for the, other, existing rule of VP-Deletion,

(ii)   the analysis by Chomsky (1957) postulates a rule of
Affix-Hopping whose derived structures are such that,
from them, <u>there</u>-Insertion will form further derived
structures which are wrong as the input for VP-Deletion.

Therefore, at the level of acceptability assign the analysis by
Akmajian and Wasow (1975) a greater measure of merit than the
analysis by Chomsky (1957).

In Argument 4 the role of major premiss is played by an acceptability stan-
dard based on a notion of "theoretical fit".   In terms of such an accepta-
bility standard a given claim is assessed on the basis of the success with
which it fits into some already established theoretical framework.[26]   In
the case of Argument 4 the theoretical framework is that of a fragment of a
generative grammar of English: in particular, a framework of existing pro-
posals concerning transformational rules of English.[27]

(21)   Argument 5

If, given two alternative versions V_1 and V_2 of a transforma-
tional rule, it is the case that, whereas

(i)   in its version V_1 the rule can operate in the simplest
possible fashion,

(ii)   in its version V_2 the rule cannot operate in the simplest
possible fashion,

then at the level of acceptability assign V_1 a greater measure
of merit than V_2.

Whereas

(i)   in its version under the Akmajian-Wasow analysis the rule
of VP-Deletion can operate in the simplest possible
fashion,

(ii)   in its version under the analysis by Chomsky (1957) the
rule of VP-Deletion cannot operate in the simplest pos-
sible fashion.

Therefore, at the level of acceptability assign the version of
VP-Deletion under the Akmajian-Wasow analysis a greater measure
of merit than the version of VP-Deletion under the analysis of
Chomsky (1957).

Like the formulation of the acceptability standard in Argument 4, the above
formulation of the acceptability standard of "greatest possible simplicity"
is merely approximate.   Moreover, the authors are not explicit as to the
relative weights which they assign to these two acceptability standards.
Presumably, they implicitly take the acceptability standard of "theoretical
fit" to have a greater relative weight than that of "greatest possible sim-
plicity".   Note, finally, the nature of the evidence offered by Akmajian
and Wasow in terms of these two acceptability standards: in both cases the
evidence offered is metascientific, or methodological, in nature.   This
remark concludes our more detailed presentation of Akmajian and Wasow's
justification for the structure [20b] in terms of three sorts of evidence:
metascientific, (indirect) empirical, and hypothetical.

Above, we stated that in the present phase the theoretic intuition (12)/(13)
has implicit justification in terms of one or another systematic considera-
tion.   It is now possible to take a closer look at the content of this
systematic consideration.   Recall the two facts on which this systematic
consideration is based.   First, as was shown above, Akmajian and Wasow
provide explicit justification in terms of objective considerations for the
following substantive conclusion:

(AW)   There is an earlier rule of EN/ING-Hopping distinct from a later
         rule of Tense-Hopping.

Specifically, this was the conclusion in Argument 1 above.   Recall that
this conclusion represents the content of the Akmajian-Wasow analysis.   As
such, it is incompatible with the relevant analysis by Chomsky, which has
the following content:

(C)   There is a unitary rule of Affix-Hopping.

Indeed, the conclusion (AW) implies the denial of the analysis (C): if
there is an earlier rule of EN/ING-Hopping distinct from a later rule of
Tense-Hopping, then there is no unitary rule of Affix-Hopping.   Conse-
quently, the conclusion (AW) can be replaced by the conjoined statement
(AW^1).

(AW^1) There is an earlier rule of EN/ING-Hopping distinct from a
         later rule of Tense-Hopping, and there is no unitary rule of
         Affix-Hopping.

Using the first two abbreviations introduced above, we may succintly put
the substantive conclusion of Argument 1 as follows: AW and not C.

Second, as is shown in § 2.6 below, the theoretic intuition (12)/(13) in
its present phase serves, implicitly, in an evidential role: that of "pre-
ferential psychological support".   And, the argument in which it serves in
this evidential role --- namely, (27) below --- has as its conclusion
a methodological statement.   This methodological conclusion is statable as
follows:

(MC)   The Akmajian-Wasow analysis is more acceptable than the Chomsky
        analysis.

Using the abbreviations introduced above, we may succinctly put this metho-
dological conclusion as follows: AW is more acceptable than C.

A question now arises about the substantive conclusion (AW)/(AW^1) and the
methodological conclusion (MC).   It is this: what is the logical nature
of the relation between this substantive conclusion and this methodological
conclusion?   Viewed from the side of the methodological conclusion, this
relation has the facet expressed in the following conditional statement:

(CS^1)   If, at the methodological level, the Akmajian-Wasow analysis
        is more acceptable than the Chomsky analysis,
        then, at the substantive level, there is an earlier rule of
        EN/ING-Hopping distinct from a later rule of Tense-Hopping
        (and there is no unitary rule of Affix-Hopping).

Viewed from the side of the substantive conclusion, this relation has the
facet expressible as below:

(CS^2)   If, at the substantive level, there is an earlier rule of
        EN/ING-Hopping distinct from a later rule of Tense-Hopping
        (and there is no unitary rule of Affix-Hopping),
        then, at the methodological level, the Akmajian-Wasow
        analysis is more acceptable than the Chomsky analysis.

From the existence of these two conditional statements it is clear that
the substantive and the methodological conclusion each implies the other.
The logical relation between these two conclusions is, in other words, one
of mutual implication.   This symmetrical relation of mutual implication
we will call a CORRESPONDENCE.   Consider, next, the manner in which the
theoretic intuition (12)/(13) is integrated into a common theoretical
framework along with the Akmajian-Wasow analysis of the English auxiliary.
This theoretic intuition is integrated into this theoretical framework in
the following manner: this theoretic intuition is (central to) the minor
premiss of an argument which yields a methodological conclusion such that

this methodological conclusion "corresponds", in the above sense, to
Akmajian and Wasow's substantive conclusion.   Thus the systematic con-
sideration for (12)/(13) is that

(22)   this theoretic intuition functions as (or in) the minor pre-
        miss of an argument which, in terms of an acceptability
        standard, yields a methodological conclusion such that this
        methodological conclusion corresponds to Akmajian and Wasow's
        substantive conclusion.

This systematic consideration may be reconstructed as an acceptability
standard, and its application to this theoretic intuition may be expli-
cated by means of a demonstrative argument.   The argument may be stated
as below; the acceptability standard, as its major premiss.

(23)   If, given a theoretic intuition TI, it is the case that
        (i)   there is a substantive conclusion SC which enjoys objec-
               tive justification and
        (ii)   there is a demonstrative argument in which
               a.   TI functions as (or in) the minor premiss and
               b.   a methodological conclusion MC is drawn which
                     "corresponds" to the substantive conclusion SC,
        then, at the level of acceptability assign the theoretic intui-
        tion TI a minimal positive measure of merit.

        Given the theoretic intuition (12)/(13), it is the case that
        (i)   the substantive conclusion $(AW)/AW^1)$ enjoys objective
               justification and
        (ii)   in the demonstrative argument (27)
               a.   this theoretic intuition functions in the minor
                     premiss and
               b.   a methodological conclusion is drawn which "corres-
                     ponds" to this substantive conclusion.

        Therefore, at the level of acceptability assign the theoretic
        intuition (12)/(13) a minimal positive measure of merit.

2.5.3   The plausibility of the theoretic intuition in the opinion
         of its intuitive agents

The final epistemological property of the theoretic intuition (12)/(13)
to be noted here is the plausibility which it has in the opinion of
Akmajian and Wasow, its intuitive agents.   Consider the content and the
tone of the remarks of theirs in which this theoretic intuition is inti-
mated.   For convenience of reference these remarks are repeated below:

(24)   (i)   "Here the intuitively abhorrent derived structure of
                ⎡19b⎤ is a direct consequence of assuming a single
                rule of Affix-Hopping after There-Insertion." (28)

         (ii)   "But now we must point out that structure ⎡20b⎤ is
                not merely a more 'natural' derived structure ---
                it is, indeed, the structure required as input to
                other rules of the grammar." (29)

        (iii)   "Hence ⎡19b⎤ is not only intuitively unnatural, but
                is incorrect as the input for VP-Deletion." (30)

There is nothing in the content or tone of these remarks to suggest that
the following two observations are mistaken.   First, Akmajian and Wasow
regard the theoretic intuition (12)/(13) as being plausible.   Second,
they are confident that at least some of their colleagues, perhaps even
most of them, will also find this theoretic intuition plausible.

2.6   The methodological roles played by the theoretic intuition

We will consider next the methodological roles played by the theoretic
intuition (12)/(13).   As before, we distinguish between an earlier phase
and the present one.

EARLIER PHASE

In an earlier phase, Akmajian and Wasow seem to have used the theoretic
intuition (12)/(13) in an evidential role against the derived structure
⎡19b⎤ .   This theoretic intuition played this negative evidential role
within the framework of an application of an acceptability standard: an
acceptability standard based on a notion of "intuitive unnaturalness/abhor-
rentness".   The argument in terms of which this application took place can

be stated as follows:

(25)   If, given a grammatical analysis A which entails a derived
        syntactic structure S, some skilled linguist has the theoretic
        intuition that S is "unnatural" or "abhorrent",
        then at the level of acceptability assign A only a limited
        measure of merit.

        Given the grammatical analysis by Chomsky (1957) which entails
        the derived syntactic structure [19b] , some skilled linguist
        has the theoretic intuition that [19b] is "unnatural" or
        "abhorrent".

        _____

        Therefore at the level of acceptability assign the grammatical
        analysis by Chomsky (1957) only a limited measure of merit.

Note that the theoretic intuition (12)/(13) plays an evidential role in
the following sense: it is central to the minor premiss of a demonstrative
argument within the framework of which an acceptability standard is applied.
Of course, the key concept of this acceptability standard, namely "(intui-
tive) unnaturalness/abhorrentness", is an obscure and essentially subjective
notion.   That is, this notion cannot be characterized either as being
clear in content or as having been well justified in terms of objective
considerations.   It is therefore not surprising that the authors, as is
shown in §2.7 below, seem to assign a lesser relative weight to the
theoretic-intuitive evidence of this argument than they do to empirical
evidence, to hypothetical evidence, or to metascientific evidence relating
to "theoretical fit".   More precisely, the authors do not take the step
of rejecting the derived structure [19b] outright on the basis of this
theoretic-intuitive evidence.   Rather, they merely take this theoretic-
intuitive evidence as a subjective pointer to a potential grammatical
problem: the potential grammatical problem that, possibly, there will
turn out to be objective evidence against the derived structure [19b] .
This role of engendering, in a linguist's mind, an essentially subjective
doubt as to the substantive correctness of a theoretical linguistic entity
may be dubbed the role of "negative psychological support".   Of course,
by playing this role a theoretic intuition may stimulate a linguist to
look for objective negative evidence.   To the extent that it stimulates

discovery in this way, a theoretic intuition may therefore play a heuris-
tic role.

The foregoing interpretation of the role played by the theoretic intuition
(12)/(13) in an early phase of its life span receives some support from a
textbook co-authored by Akmajian and Heny.   Consider the following remarks
by Akmajian and Heny about There-Insertion: (31)

(26)   "We must make a brief note of one potential problem with the out-
       put structures of the rule, as it now stands.   Whenever There
       Insertion operates on sentences containing occurrences of
       auxiliary be, it will have the effect of inserting the subject
       NP into Aux, in between be and its affix.   For example, There
       Insertion operating on ⌊5.73a⌋ will produce ⌊5.73b⌋ :
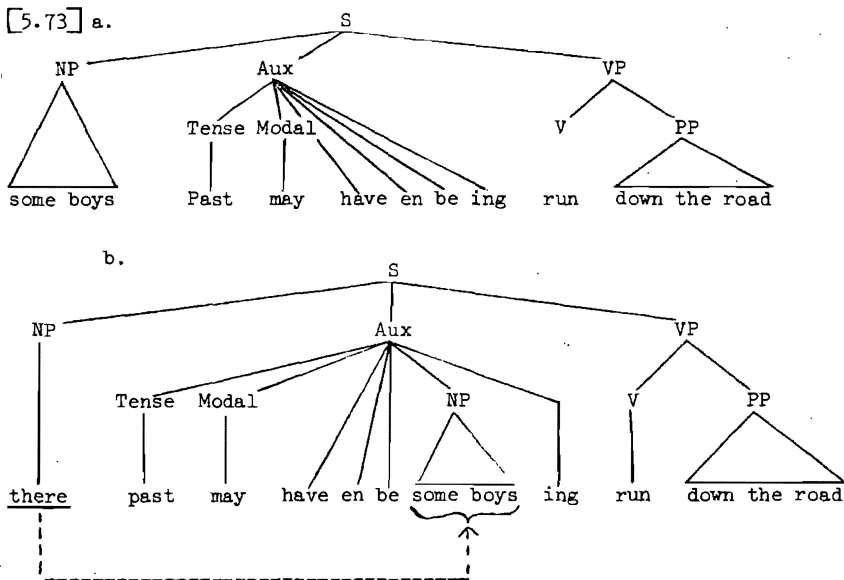
Such a derived structure seems intuitively "unnatural"; in the
sentence There might have been some boys running down the road, we
hardly expect the NP some boys to be part of the Aux.   However,
given the way we have stated There Insertion and the way Affix
Hopping works, the derived structure ⌊7.73b⌋ is the only possible
one.

First of all, the SC of There Insertion instructs us to sister-adjoin
term 1 to the right of be; this has been done in tree ⌊5.73b⌋.
Second, if term 1 (= subject NP) were to be adjoined in a more
'natural' place --- for example, outside Aux preceding VP ---
then Affix Hopping could not work.   For example, consider adjoining
the subject NP of ⌊5.73a⌋ as follows:

[5.74]
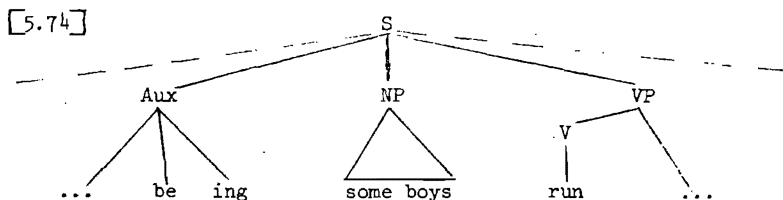
If this were done, the affix _ing_ would no longer be adjacent to
the verb _run_, and the rule of Affix Hopping would not be able to
place it on the verb; the intervening NP _some boys_ would block
the application of the rule. We cannot simply reject the analysis
embodied in rule [5.71] on 'intuitive' grounds, though it would
be good to find an alternative that avoided derived structures
like [5.73b] ."

PRESENT PHASE

In the present phase the theoretic intuition (12)/(13) may be understood
to play, implicitly, an evidential role in which it favours the derived
structure [20b] of the excerpt (2) over that of [19b] . This theoretic
intuition plays this differential role within the framework of an applica-
tion of an acceptability standard whose key concept is a notion of "intui-
tive (un)naturalness".[32] This application takes place in terms of an
argument such as the following:

(27)   If, given two alternative grammatical analyses A_1 and A_2 which
        postulate the alternative derived syntactic structures S_1 and S_2
        respectively, some skilled linguist has the theoretic intuition
        that, whereas

        (i) S_1 is "more natural" than S_2,
        (ii) S_2 is "unnatural" or "abhorrent",
        then at the level of acceptability assign A_1 a greater measure
        of merit than A_2.

        Given the alternative grammatical analyses of Akmajian and Wasow
        (1975) and of the Chomsky (1957) which postulate the alternative
        derived syntactic structures [20b] and [19b] respectively,
        some skilled linguist has the theoretic intuition that, whereas
        (i)   [20b] is "more natural" than [19b] ,
        (ii)   [19b] is "unnatural" or "abhorrent".

Therefore, at the level of acceptability assign the grammatical
analysis of Akmajian and Wasow (1975) a greater measure of merit

The theoretic intuition (12)/(13) plays an evidential role in the follow-
ing sense: it is central to the minor premiss of a demonstrative argument
within the framework of which an acceptability standard is applied.   Of
course --- as was stressed earlier in §2.6 , under the heading EARLIER
PHASE --- , the key concept of this acceptability standard, namely
"(intuitive) unnaturalness", is an obscure and essentially subjective
notion.   It is therefore not surpising that the authors, as is shown in §
2.7 below, seem to assign a lesser relative weight to the theoretic-intui-
tive evidence of this argument than they do to empirical evidence, to
hypothetical evidence, or to metascientific evidence.   That is, the basis
on which they accept [20b] is provided by these three other sorts of
evidence.   The intuitive naturalness of [20b] is, for them, merely a
pleasant "bonus".   In a sense, what the authors seem to be saying is this:
"the derived structure [20b] is favoured not only by such 'firm' factors
as (indirect) empirical evidence, hypothetical evidence, and metascientific
evidence; it is favoured even by so infirm a factor as the linguist's
theoretic intuitions".   This role, for theoretic-intuitive evidence, of
engendering in the linguist's mind an essentially subjective preference,
as to substantive correctness, for one theoretical linguistic entity over
another may be dubbed the role of "preferential psychological support".

In sum: the theoretic intuition (12)/(13) has played two methodological
roles:

(28)   (i)   the methodological role of "negative psychological sup-
                  port" at the level of English grammar;
          (ii)   the methodological role of "preferential psychological
                  support" at the level of English grammar.

2.7   The special methodological significance of the theoretic intuition

Consider again the way in which Akmajian and Wasow summarize their Sec-
tion 2: (33)

(29)   "To sum up so far, our postulation of an early rule of EN/ING-Hop-
         ping (1) avoids an ordering paradox, and (2) allows us to postulate
         the correct derived structure for There-Insertion ..."

Note that in this summary the authors do not mention all of the considera-
tions pointed out in §2.1 of our analysis.   A consideration which they
do not mention is the one based on the theoretic intuition that the struc-
ture ⌈19b⌋ of their text is "abhorrent/unnatural".   Considerations
which they do mention in this summary are ones about postulating the correct
derived structure of There-Insertion, correct in that it satisfies the
structural description of the subsequent rule of VP-Deletion.   Now, recall
that these considerations -— as was noted in §2.5.2 above --- provide
not only empirical and hypothetical evidence for the theoretic intuition
(12)/(13), but also metascientific evidence for it in terms of "theoretical
fit".   This enables us to point out a first respect in which this theoretic
intuition is of special methodological significance.   In presenting the
above-quoted summary

(30)   the intuitive agents of (12)/(13) assign a greater relative weight
        to hypothetical evidence and to metascientific evidence of "theore-
        tical fit" than to the evidence provided by a theoretic intuition.

A second respect in which the theoretic intuition (12)/(13) is of special
methodological significance became apparent in §2.5.2 above.   This is that

(31)   a partly explicit argumentation can be reconstructed in terms
        of which evidence is provided for the theoretic intuition
        (12)/(13) on the basis of a systematic consideration, namely
        that of (22).

3.   Conclusion

As was indicated in note 1, the inquiry of which the present analysis forms
part is being undertaken as an extension of an exploratory study by Botha.[34]
In the latter study, no provision is made for the idea that theoretic in-
tuitions may derive acceptability on the basis of systematic considerations.
Akmajian and Wasow's theoretic intuition (12)/(13) is interesting therefore
in the following four respects. First, the intuitive agents of this
theoretic intuition enhance its acceptability by means of a systematic con-
sideration, namely one based on a notion of "correspondence (between sub-

stantive and methodological conclusions)".   Second, this enhancement of
its acceptability is at least partly susceptible of an explicit logical
reconstruction.   Third, at least two of the logical devices identified
in terms of this reconstruction --- the demonstrative argument (27)
and the acceptability standard of "intuitive (un-)naturalness" which
functions as its major premiss --- do not differ in any essential way
from those which generative linguists use in their attempts to enhance
the acceptability of linguistic hypotheses.[35]   Thus the foregoing ana-
lysis suggests that the "underjustification" of the theoretic intuition
(12)/(13) is similar, in this respect, to the justification of linguistic
hypotheses.   Fourth, the acceptability standard of (22)/(23) is the first
instance which has come to my notice where the notion of "correspondence"
functions as a key concept.   Recall that this acceptability standard
applies, not to linguistic hypotheses, but to theoretic intuitions. Thus,
on the other hand, the analysis presented above raises the following
question: Do theoretic intuitions differ epistemologically from linguis-
tic hypotheses in that a category of acceptability standards of "corres-
pondence" plays a role in the "underjustification" of the former but not
in the justification of the latter?   This suggestion and this question
both require to be followed up within the context of a detailed epistemo-
logical comparison of theoretic intuitions and linguistic hypotheses.

FOOTNOTES

1.   A methodological evaluation of the part played by theoretic intui-
     tions in generative grammar is being attempted in (Winckler: In
     preparation), an extension of an exploratory study by Botha (1976)
     and very heavily indebted to this latter.

2.   Such more detailed distinctions, along with appropriate examples,
     are presented in the references of note 1.

3.   For characterizations of native speakers' linguistic intuitions cf.
     Botha 1968:§§2.2 and 3.3; Botha 1973:§5.2, and the literature
     surveyed there.

4.   Of course, as is pointed out by Botha (Forthcoming:§12.1), any gene-
     rative inquiry has both a general-linguistic and a grammatical
     component.   At the level of general-linguistic inquiry the primary
     concern is with establishing the universal properties of natural
     language as such.   At the level of grammatical inquiry the primary
     concern is with establishing the principles of a specific natural
     language.   At both levels, the linguist attempts to arrive at a
     knowledge of the underlying linguistic reality: at the general-
     linguistic level, man's language faculty; at the grammatical level,
     the native speaker's linguistic competence.   (On the goals of gene-
     rative linguistic inquiry cf. (Botha: Forthcoming: chapter 3).)
     At both levels the only way open to the linguist for arriving at
     such knowledge is that of devising (fragments of) theories which
     are testable by objective means.   Thus a theoretic intuition about
     the organization of grammar may be an instance of a general-linguistic
     theoretic intuition, whereas a theoretic intuition about a specific
     linguistic rule may be an instance of a grammatical theoretic intui-
     tion.

5.   Within the present framework, those intuitions of native speakers
     which spring from an extra-grammatical source —— for instance,
     from native speakers' perceptual strategies ——— do not constitute

linguistic intuitions.   For discussion of several such extra-gram-
matical sources of native speakers' intuitions about linguistic
expressions cf. Bever 1974:190-195; Botha 1973:§5.4.2.2; Langendoen
and Bever 1973:403-408.

6.   Some comment is needed to explain why I have added here the qualifi-
     cation "potential".   Whether some such qualification is or is not
     appropriate depends on the answer to the following question: Do all
     skilled generative linguists experience theoretic intuitions? I sim-
     ply do not know whether the correct answer to this question is a
     categorical "Yes".   Indeed, I do not even know whether most skilled
     linguists experience theoretic intuitions.   What does seem certain,
     from the examples discussed in the references of note 1, is that at
     least some leading generative linguists have been the agents of
     theoretic intuitions, for instance: Chomsky, McCawley, Postal and
     Ross.   By means of the qualification "potential", then, I am keeping
     open the possibility that the correct answer to the above question is
     that theoretic intuitions occur certainly to some skilled linguists,
     probably to most of them, and possibly to all of them.   This answer
     can be provided for by assuming that all skilled generative linguists
     are able, "in principle", to experience theoretic intuitions.   Such
     an assumption concerning "potential theoretic-intuitive agenthood"
     for generative linguists is comparable with the assumption, made in
     the field of generative grammar, that being a native speaker of a
     given language entails the ability to have linguistic intuitions.

7.   On the logic of "objective justification" in the field of generative
     grammar cf., e.g., Botha 1973 and Botha Forthcoming.

8.   As is emphasized in Botha 1973:187-188, the fact that a given lin-
     guistic intuition is provisionally accepted, in generative grammar,
     as being a nonproblematic item of evidence does not entail that this
     linguistic intuition is regarded as being somehow guaranteed not to
     be false.   Suppose that a given linguistic intuition has been pro-
     visionally accepted as being nonproblematic, but that subsequently
     its reliability is challenged in some serious manner.   Then "either
     it must be justified in terms of objective standards or, if no such

objective justification can be given, then it must be removed from
the corpus of evidential statements".   In the main text above, the
point is that to give such objective justification of a challenged
linguistic intuition is an undertaking which lies outside the pro-
vince of linguistically untrained speakers.

9.   In (Winckler: In preparation) a corpus of some eighty theoretic
     intuitions from the literature of generative grammar is being
     analysed.   Of these, thirty-four are "nonreasoned" in the relevant
     sense, while thirty are "underjustified".

10.   There is also a fifth respect in which the two classes of intuitions
     differ: their methodological roles.   For discussion of the diffe-
     rences involved here, the interested reader may consult the references
     of note 1.

11.   In the bibliography of the present paper this study is listed as
     Akmajian and Wasow 1975.

12.   Cf. Akmajian and Wasow 1975:211-215.

13.   Cf. Chomsky 1957:39, 113.

14.   Cf. Akmajian and Wasow 1975:212-215.

15.   The rule of There-Insertion is formalized by Akmajian and Wasow
     (1975:218, note 8, and 229-230, note 14) as follows:

     There-Insertion (Optional)

     SD: NP   -.   Tense   (Modal)   (have-en)   -   be   -   VP
          $\begin{bmatrix} -DEF \end{bmatrix}$

            1   2   3   4
     SC: There   2   3 - 1 $\#$ 4

     (Here, the symbol   "$\#$"   means that the displaced subject NP is
     Chomsky-adjoined to VP.)

16.   Cf. Akmajian and Wasow 1975:206-211.

17.   Cf. Akmajian and Wasow 1975:215, note 6.

18.   Cf. Akmajian and Wasow 1975:214-215.

19.   The conceptual framework within which the authors' argumentation is
       reconstructed in this working paper is that presented in Botha 1973:
       in particular chapters 2, 3, 5 and 6.

20.   In an argument such as Argument 1, the two statements above the line
       are PREMISSES; the if ... then one is the MAJOR PREMISS, the other
       is the MINOR PREMISS.   The statement below the line is the CONCLUSION.
       The minor premiss functions as an EVIDENTIAL STATEMENT.   For the
       technical content of the various notions "capitalized" here cf. Botha
       1973:25-28.

21.   For the content of the notion of "hypothetical evidence" cf. Botha
       1973:175-176.

22.   For the content of this notion of "supplementing" cf. Botha 1970:45.

23.   For the content of the notion of "acceptability standards" cf.
       Botha 1973:258-261.

24.   These notions are "key concepts" in the sense of Botha 1973:260.

25.   For a characterization of the function and logical status of accepta-
       bility standards in generative grammar cf. Botha 1973:297-301.

26.   Cf. Botha 1973:288.

27.   The above formulation of an acceptability standard of "theoretical
       fit" is approximate only.   Specifically, the text by Akmajian and
       Wasow seems to be compatible with at least two other versions of
       the consequent: "then at the level of acceptability assign A_1 a
       positive measure of merit but A_2 a zero measure of merit".   Second
       alternative version: "then at the level of acceptability assign A_1
       a positive measure of merit but A_2 a negative measure of merit".

28.   Cf. Akmajian and Wasow 1975:213.

29.   Cf. Akmajian and Wasow 1975:214.

30.   Cf. Akmajian and Wasow 1975:215.

31.   Cf. Akmajian and Heny 1975:174-176.

32.   A category of acceptability standards whose key concept is some
      notion of "(un-)naturalness" was first identified in (Botha 1973:
      293-295).

33.   Cf. Akmajian and Wasow 1975:215.

34.   Namely, Botha, 1976.

35.   On acceptability standards for linguistic hypotheses in generative
      grammar, and on the demonstrative argument form within which they
      are applied, cf. Botha 1973:§§6.2-6.

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