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". 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. 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. 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. 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, 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 intuitions differ as regards their respective categories of intuitive agents.

Finally, theoretic intuitions have not the same epistemological status 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 epistemological properties. One, a given theoretic intuition is either nonreasoned, that is, without any de facto objective justification by its intuitive agent, a skilled generative linguist, or it is underjustified, that is, without adequate 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's study "The constituent structure of VP and AUX and the position of the verb be". (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 Syntactic Structures, (13) should be "split ... into two separate transformations: one having the effect of placing the affixes -en and -ing, 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 transformational rules, ordered as below:

(1) (i) EN/ING-Hopping
     (ii) There-Insertion
     (iii) VP-Deletion
          VP-Fronting
     (iv) Tense-Hopping
     (v) Do-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]:


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:
... 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:

(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:

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:

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:

\[
\begin{align*}
S & \rightarrow \text{NP AUX VP NP AUX VP2} \\
\text{John past say it} & \text{S there pres be many people dancing in the fields} \\
\text{NP AUX} & \text{V NP VPP} \\
\text{There past will not be} & \text{many people dancing in the fields}
\end{align*}
\]

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 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 underlying sentences like (i) below into structures underlying sentences like (ii) below:
(3) (i) John Dean was crying in court, and James McCord was crying in court, too.
(ii) John Dean was crying in court, and James McCord was crying in court, too.

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 6 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 -ing, requires the order of rules indicated below:

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

For such strings, the affix -ing 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 -ing, requires the opposite order of rules.

(6) (i) The CIA guards our freedoms, and the FBI guards our freedoms, too.
(ii) The CIA guards our freedoms, and the FBI does _______ , too.

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 Do-Support would not be able to apply; hence does 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) They all said that John would pass an exam one of these days, and pass an exam he did!
     (ii) Mary predicted that her husband would enjoy a night out, and enjoying it he is!
     (iii) I was told that I couldn't climb that mountain, but climb it I will!

Generation of the second clause of strings like (8)(ii) requires the following order of rules:

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

For such strings, too, -ing needs to have hopped into VP before the right-hand VP is affected by the second rule — in this case, fronted. Generation 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 did 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-comparative". 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 necessary 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 $[19b]$. Therefore, 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 structures 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 theoretic 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 justification 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, justification 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 theoretic 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 required as input to other rules of the grammar ... If we assume that structure [20b] is the structure of the second clause of [21] [John said that there wouldn't be many people dancing in the fields, but there are W.K.W.], then the rule of VP-Deletion can operate in the simplest possible fashion to derive the elliptical 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.

(17) **Argument 1**

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

The structures derived by there-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 evidential statement is itself in need of support. Support for this evidential statement is provided in terms of the following, further, argument.
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. 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:

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. 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. One of these acceptability standards is based on a notion of "greatest possible simplicity", the other on a notion of "theoretical fit". 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. The first of these, in particular, is quite complex.
Argument 4

If, given two alternative grammatical analyses A₁ and A₂, it is the case that, whereas

(i) A₁ postulates a transformation whose derived structures are such that, from them, a given existing transformation T₁ will form further derived structures which are correct as the input for a given, other, existing transformation T₂,

(ii) A₂ postulates a transformation whose derived structures are such that, from them, T₁ will form further derived structures which are wrong as the input for T₂,

then at the level of acceptability assign A₁ a greater measure of merit than A₂.

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 there-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, there-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 standard based on a notion of "theoretical fit". In terms of such an acceptability standard a given claim is assessed on the basis of the success with which it fits into some already established theoretical framework. 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 proposals concerning transformational rules of English.
(21) Argument 5

If, given two alternative versions $V_1$ and $V_2$ of a transformational 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 possible 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 simplicity". 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 consideration. 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:

\[(AW) \text{ There is an earlier rule of EN/ING-Hopping distinct from a later rule of Tense-Hopping.}\]

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:

\[(C) \text{ There is a unitary rule of Affix-Hopping.}\]

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. Consequently, the conclusion (AW) can be replaced by the conjoined statement (AW1).

\[(AW1) \text{ There is an earlier rule of EN/ING-Hopping distinct from a later rule of Tense-Hopping, and there is no unitary rule of Affix-Hopping.}\]

Using the first two abbreviations introduced above, we may succinctly 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 "preferential 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:
The Akmajian-Wasow analysis is more acceptable than the Chomsky analysis.

Using the abbreviations introduced above, we may succintly put this methodological conclusion as follows: AW is more acceptable than C.

A question now arises about the substantive conclusion (AW)/(AW1) 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:

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:

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 consideration for (12)/(13) is that

(22) this theoretic intuition functions as (or in) the minor premiss 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 explicated 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 objective 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 intuition TI a minimal positive measure of merit.

Given the theoretic intuition (12)/(13), it is the case that
(i) the substantive conclusion (AW)/AW1) 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 "corresponds" 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 intimated. 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/abhorrentness". 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 "(intuitive) 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 heuristic 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 output 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 \(l\) to the right of be; this has been done in tree \[5.73b\]. Second, if term \(l\) (= 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:
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 application of an acceptability standard whose key concept is a notion of "intuitive (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 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 -- 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 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. 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 support" 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 Section 2:

(29) "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 ..."
Note that in this summary the authors do not mention all of the considerations 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 structure \(19b\) 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

\[
\text{(30)} \quad \text{the intuitive agents of (12)/(13) assign a greater relative weight to hypothetical evidence and to metascientific evidence of "theoretical fit" than to the evidence provided by a theoretic intuition.}
\]

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

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

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. In the latter study, no provision is made for the idea that theoretic intuitions 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 consideration, 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 analysis 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 linguistic hypotheses in that a category of acceptability standards of "correspondence" 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 epistemological comparison of theoretic intuitions and linguistic hypotheses.
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FOOTNOTES

1. A methodological evaluation of the part played by theoretic intuitions 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 generative 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 generative 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 intuition.

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-grammatical sources of native speakers' intuitions about linguistic expressions cf. Bever 1974:190-195; Botha 1973:85.4.2.2; Langendoen and Bever 1973:403-408.

6. Some comment is needed to explain why I have added here the qualification "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 simply 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 linguistic 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 provisionally 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 province 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 differences 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.


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: \( [\text{-DEF}] \quad \text{NP} \quad \underbrace{\text{Tense} \quad \text{(Modal)} \quad \text{(have-en)}}_{1} \quad \text{be} \quad \text{VP} \)

SC: \( \text{There} \quad 2 \quad 3 \quad 4 \quad 4 \quad 1 \# \quad 4 \)

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


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 PREMISES, the other is the MINOR PREMISES. 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.


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.


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 A₁ a positive measure of merit but A₂ a zero measure of merit". Second alternative version: "then at the level of acceptability assign A₁ a positive measure of merit but A₂ a negative measure of merit".


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


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