MODIFICATION AND WORD ORDER*
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Abstract

This paper attempts to account for linear ordering of the modifier and the modificand within the framework of the 'GB' theory (the Principles and Parameters approach) of generative grammar, which lacks any phrase structure rules. I propose a principle called the Adjacency Condition on Modification (ACOM) to account for primarily English facts. I suggest that the principle has cross-linguistic generality, interacting with the head-initial vs. head-final parameter.

1.1. Introduction
In a theory with phrase structure rules one can stipulate specific orderings of modifiers with respect to their modificands through such rules. In the 'GB' framework with no such rules, one must seek other solutions to the question of modifier-modified orderings.

I adopt the following version of the \( \bar{X} \) theory, following Chomsky's recent suggestion in his Kyoto lecture in 1987.
1. \[ X^j = \overline{X} \times X^i \overline{X} \]

where \( 0 \leq i \leq j \leq 2 \) and 'X' ranges over the category types
This \( \overline{X} \) schema incorporates the relaxation of one of the fairly
standard assumptions about the \( \overline{X} \) theory that a head node must be
one bar-level lower than its mother node.

1.2. Modificational Structures

Following Chomsky 1981, etc., I assume the Projection Principle in (2) below.

(2) If \( \alpha \) s-selects \( \Theta \), then CSR (\( \Theta \)) is categorically represented as
complement of \( \alpha \) at every syntactic level.

The Projection Principle projects the thematic structure of
a lexical item in the lexicon onto each syntactic level, i.e. D-
structure (DS), S-structure (SS) and LF, disregarding other ele-
ments like modifiers and 'secondary predicates' (cf. Rothstein
1983). In particular, modifiers will not be represented at such a
level at all. However, it is obvious that sentences do include
modifiers of all kinds. So I suggest that adjuncts and the like
which may serve as modifiers are inserted in the DS-SS mapping,
following Epstein 1987. They will be inserted in conformity with
the \( \overline{X} \) theory and must be licensed in some way.

Let us consider what kind of form a principle which identi-
fies modifiers and modificands may take. I suggest that modifi-
cation falls into the following three cases.

(4) a. \( \alpha \overline{X} X \) b. \( \alpha \overline{X} \overline{X} \) c. \( \alpha XP XP \)

(where the linear order of \( \alpha \) the modifier and its sister the
modificand is irrelevant, and their immediately dominating
node, \( XP \) or \( \overline{X} \), is a projection of one of its daughters, \( \overline{X} \)
or \( XP \), not of \( \alpha \))

Note that the configurations in (4) may well be cases of other con-
structions than modification, say, predication, topicalization, etc.

Notice that I exclude from modification (5a), where \( \alpha \) is not a modifier but a complement to \( X^0 \), and (5b), where \( \alpha \) is an element of a compound word:

\[
(5) a. \quad \overset{\alpha}{\chi} \quad b. \quad \overset{\alpha}{X^0}
\]

(where the order of \( \alpha \) and \( X^0 \) is irrelevant, subject to cross-linguistic or language internal variation)

I claim that (6) defines modification, identifying the modifier and the modificée.

(6) The Principle of Modification

In the configuration: \([\gamma \ldots \alpha \ldots \beta \ldots]\) (linear order irrelevant),

where (i) \( \gamma \) = a projection of \( \beta \)

(ii) \( \gamma \) immediately dominates \( \alpha \) and \( \beta \)

(iii) \( \alpha = XP \) (XP ranges over AP, AdvP, VP, PP, CP, etc.)

(iv) \( \beta / X^0 \)

\( \alpha \) modifies \( \beta \).

Let us consider some examples of modification.

(7)a. attractive, small, underpowered cars

b. attractive and small and underpowered cars

(8) fine white Georgian houses

Here (7) with a sequence of coordinated modifiers interspersed with pauses or connectives and (8) with stacked modifiers represent the two different types of modification. (7a) and (7b) illustrate what Sussex 1974 calls the broken construction. He observes that this type of modificational construction is not subject to strict grammatical ordering, and any broken sequence of adjectives can, in principle, be reordered, the only effect being one of
stylistic markedness:
(7)a'. underpowered, small, attractive cars

On the other hand, (8) is an example of Sussex's **unbroken** construction, where the order of adjectives is typically fixed: violation leads to an ungrammatical string as in (9a), unless accompanied by contrastive stress on the first adjective as in (9b), perhaps a result of movement in PF:
(9)a. *white fine houses  b. WHITE fine houses

I suggest that these two types of constructions have the following configurations associated with them at DS.

(10)a. Broken (Iteration)  b. Unbroken (Recursion or Stacking)

Following Goodall 1984, I assume that the broken construction in (10a) involves a union of phrase markers. Three phrase markers are involved in (10a): those of attractive cars, small cars, and underpowered cars. This cannot be represented in a single tree diagram of the usual kind. The tree diagram in (10a) is intended to represent this fact by connecting the three APs to $\overline{N}_0$ with dotted lines: none of these APs dominate or precede the others. The parallel structures in (10a) will be converted into a surface string such as (7a) or (7b) by linearization later. Thus each AP in (10a) separately modifies the identical $\overline{N}$, i.e. $\overline{N}_1$.

On the other hand, (10b) involves a single phrase structure, where each AP modifies a different $\overline{N}$: $AP_1$ modifies $\overline{N}_1$, $AP_2 \overline{N}_2$, and $AP_3 \overline{N}_3$. Thus we have a stacked interpretation.
2.1. The Adjacency Condition on Modification (ACOM)

I am assuming that APs may occur as prenominal modifiers (cf. (6) and (10)). The following examples may seem to be counter-examples to the assumption.

(11)a. *the \([\text{NP} \ {\text{AP}_A} \ {\text{proud of his children}}]\) man

b. *a \([\text{NP} \ {\text{AP}_A} \ {\text{shy about strangers}}]\) child

On the other hand, full-blown APs with complements of the adjectival head occur in postnominal and predicate position:

(12)a. \([\text{NP} \ {\text{AP}_A} \ {\text{proud of his children}}]\) (Fabb 1984)

b. \([\text{NP} \ {\text{AP}_A} \ {\text{happy with his work}}]\) (ditto)

(13)a. The man is proud of his children.

b. The man is happy with his work.

The same holds of APs with a modifier of the adjectival head, not its complements.

(14)a. *\([\text{NP} \ {\text{AP}_A} \ {\text{popular in Africa}}]\) novel

b. \([\text{NP} \ {\text{AP}_A} \ {\text{popular in Africa}}]\)

Data like (11) among others led Hendrick 1978 to propose that adjectives have no posthead complements in the base and that a structure-building transformation dubbed Complement Formation forms complements of adjectives. This analysis creates a number of problems, e.g. a limitation on the generality of the \(\bar{X}\) theory, an otherwise unwarranted increase in the descriptive power of transformations, etc. Furthermore this surface limitation on premodifiers is not restricted to AP by any means, as we will see later on.

To account for the data in (11), (12) and (14), I propose the Adjacency Condition on Modification (ACOM):

(15) The \(\bar{X}\)-level head of a modifier must be adjacent to the modificand. (Oshima 1986)
I tentatively assume that the ACOM applies at SS. Cf. §4.2. The relevant portion of the offending structure in (11) and (14a) is the following, where the boxed AP modifies the circled N (cf. (6) above):

\[
\begin{array}{c}
\text{Det} \quad \text{NP} \\
\text{AP} \quad \text{N} \\
\text{XP} \quad \text{YP}
\end{array}
\]

(16)

In (11), the XP complement to A in (16) intervenes between the modificand N and the X⁰-level head (i.e. the A in (16)) of the modifier AP, whereas in (14a), it is the YP modifier in (16) that intervenes between the two, the N and A. On the other hand nothing intervenes between them in (12) and (14b).¹

Note that the ACOM applies only to modification. Thus structures of predication, topicalization, etc. are not subject to the condition, though they may conform to the configuration in (6). Then they may be ruled out as modificalional structures by the ACOM, but they may serve as structures of predication, topicalization, etc.

The ACOM accounts for other forms of modification such as those in (17), (18), and (19), where a degree phrase (DegP) modifies an A modificand:

(17)a. *He's [AP [DegP [Deg so] [that he'll never get up in time]] [\text{\underline{A} tired}]].²

b. He's so tired [that he'll never get up in time].

(18)a. *He's [AP [DegP [Deg too] [to get up]] [\text{\underline{A} tired}]].

b. He's too tired [to get up].

(19)a. *He's [AP [DegP [Deg more] [than you are]] [\text{\underline{A} tired}]].

b. He's more tired [than you are].

While the X⁰-level head of the modifier (i.e. Deg) is adjacent to
the modifiee (i.e. $\overline{A}$) in the (b) cases of (17)-(19), it is not in the (a) cases with the complement to $\text{Deg}$ intervening, in violation of the ACOM.

More complicated modificational structures of the same kind receive the same explanation.

(20)a. too many stories about Bill for us to bear

b. as much too much bread as I could stand (Jackendoff 1977)

Let us examine (20b), which may be base-generated or may derive from the structure in (21). The configuration in (21) violates the ACOM, for $\text{Deg}_2$, the $X^0$-level head of $\text{DegP}_2$ the modifier, is not adjacent to its modificand $\overline{Q}_2$ because of an intervening PP. This PP cannot adjoin to $\text{QP}_2$, because then $Q_2$ the $X^0$-level head of $\text{QP}_2$ the modifier would not be adjacent to $\overline{\text{Deg}}_1$, its modificand. Neither can it adjoin to $\text{DegP}_1$, for then $\text{Deg}_1$ the $X^0$-level head of $\text{DegP}_1$ cannot be adjacent to $\overline{Q}_1$, its modificand, nor can it adjoin to $\text{QP}_1$, for now $Q_1$ the $X^0$-level head of $\text{QP}_1$ will not be adjacent to $\overline{N}$, the modificand. Thus the PP must postpone beyond $N$, bread, as in (20b). The same account applies to (20a). I will return to the question whether postposed phrases in (20) are base-generated or derived via movement in §4.2.

The ACOM accounts for the following data as well.

(22)a. the $[\overline{N} \text{ book}] [\overline{pp}[p \text{ under}] \text{ the table}]$

b. *the $[\overline{pp}[p \text{ under}] \text{ the table}] [\overline{N} \text{ book}]$

c. the $[\overline{pp}[p \text{ outside}]] [\overline{N} \text{ job}]$, the $[\overline{pp}[p \text{ down}]] [\overline{N} \text{ stroke}]$
2.2. Apparent Counterexamples to the ACOM

2.2.1. Group Genitives

Group genitives are most notable apparent counterexamples to the ACOM. Consider (23).

(23)a. The mayor of Boston's report was rejected.

b. The King of Denmark's court was in disarray.

Emonds 1985 notes that not all group genitives are acceptable. (Judgments on group genitives do vary with styles (e.g. colloquial or formal) and somewhat with speakers, however.)

(24)a. The mayor from New York State's report was rejected.

b. *The man without money's request was denied.

c. *The man smoking a cigar's comment was ridiculed.

So he proposes Recursion Restriction (RR) with a proviso attached to it:

(25) If a language is head-initial, any phrase $C^j$ in $X^2$ to the left of $X^0$ must terminate in its head $C^0$ in S-structure, except if $C^j$ terminates in a head of the same category and abstract case as $C^j$. (Emonds 1985)

The main portion of RR in (25) is intended to account for what our ACOM has so far covered, as far as head-initial languages like English are concerned. The proviso in the form of the except clause purportedly accounts for group genitive data. He assumes that of in (23a) and (23b) is a reflection of the genitive case. Thus the proviso says in effect that only group genitives of the form

(26) $[\text{NP}_1 \ldots \text{[NP}_2 \text{ of } \ldots \text{N}_2\text{]'}s]$ are not subject to RR, ruling (23) in and ruling (24) out.

Emonds' account in terms of RR is at best a description of facts and even not an accurate one. Consider (27): (a)-(c) are
predicted to be out, while (d) should be in.
(27)a. Someone else's shoes are missing.
   
   b. (?)The girl he goes with's mother arrived.
   
   c. The man about town's chambers are interesting.
   
   d. ?*One of our friends' car hit the lamppost and skidded.

   I claim that the ACOM (or the main portion of RR for head-
initial languages) can stand as is, requiring no proviso, as far
as group genitive facts go. Let us examine (23a). I propose that
the subject NP has the underlying structure of (28a) and that it
undergoes reanalysis as in (28b):

(28)a. \[ \text{NP}_2 \] \[ \text{NP}_1 \] \[ \text{N}_1 \] \[ \text{Det} \] \[ \text{the} \] \[ \text{NP}_3 \] \[ \text{report} \] \[ \text{mayor (of) Boston} \] \[ \rightarrow \] \[ \text{NP}_2 \] \[ \text{NP}_1 \] \[ \text{N}_1 \] \[ \text{Det} \] \[ \text{the} \] \[ \text{NP}_3 \] \[ \text{report} \] \[ \text{mayor (of) Boston} \]

In (28a) the $X^0$-level head $N_2$ of the modifier $NP_2$ is not adjacent
to the modified $N_1$ in violation of the ACOM. On the other hand,
the structure in (28b) observes the ACOM, because the newly created
node $N^*$, the $X^0$-level head of the modifier $NP_2$, is adjacent to the
modified $N_1$ under the assumption that reanalysis does not involve
movement and thus does not give rise to a trace. If it did involve
movement, it might leave a trace, which in turn would lead to vi-
olation of the ACOM. (For one plausible theory of reanalysis, see
Goodall 1984.) I will return to this question. Cf. §4.1.

Forms like my son-in-law's arrival with son-in-law hyphenated
are suggestive. In fact, there is good reason to believe that
this reanalysis of group genitives indeed takes place. In the
first place, prefixes like ex-, which can be affixed to nouns
alone, may be adjoined to forms like mayor of Boston:

(29)a. an ex-husband; b. an ex-premier; c. an ex-
editor]; d. *ex-[heavily drinking executives] (Levi 1978)

(30)a. an ex-[mayor of Boston]; b. an ex-[King of England]; c. *an ex-[the mayor of Boston]; d. *an ex-[the King of England]

As we can see in (29), ex- can be affixed to simple nouns like husband, premier, and to compound nouns like copy editor, but not to NPs like heavily drinking executives. The fact that it also attaches to things like mayor of Boston and King of England suggests that they are indeed (compound) nouns.

Another piece of evidence for the reanalysis comes from facts about anaphoric islands. Postal 1969 was the first to point out that lexical items are anaphoric islands. For example, he cites derivatives formed from proper nouns plus a suffix like -ist or -ite and notes that a pronoun cannot have as antecedent part of the derivative. Compare the (a) sentence with the (b) sentence in each of the following pairs:

(31)a. Followers of McCarthy are now puzzled by his intentions.
    b. *McCarthy-ites are now puzzled by his intentions.

(32)a. Supporters of Murphy are agreed that he is going to lose.
    b. *Murphy-ists are agreed that he is going to lose.

Simpson 1983 and Sproat 1985 cite examples involving compounds too.

(33)a. *Reagan-haters would never be seen standing next to him.
    b. *Truck-drivers fill them up with diesel.

Now consider the following examples:

(34)a. The coronation of the King of England took place shortly after its independence.
    b. *The King of England's coronation took place shortly after its independence.

(35)a. The election of the Mayor of Boston changed its politics
once and for all.

b. *The Mayor of Boston's election changed its politics once and for all.

The ungrammaticality of the (b) cases in (34)-(35) suggest that England in (34b) and Boston in (35b) are parts of (compound) nouns, namely, King of England and Mayor of Boston, unlike their counterparts in the (a) cases.

Since the reanalysis affects coreference possibilities, this must take place before or at SS, for otherwise the output of the reanalysis will not be an input both to the PF component, where phonology applies for correct phonetic interpretation of compounds, and to the LF component, where the Binding Theory (Chomsky 1981, 1986a) applies. A precondition for the Binding Theory is that each of the NPs involved be an independent NP, not part of a noun.

2.2.2. Coordination and Parentheticals

In cases of coordinated APs such as those in (7) the adjective heads of all the APs except the last one are not adjacent to the modified N in violation of the ACOM. But as I suggested in §1.2., these cases start out as the unions of phrase markers, which might be diagramed as in (10a), where none of the adjectives precede the others and hence they are all adjacent to the modified.

Under the assumption that the process of linearization which derives surface forms like (7) applies after the ACOM, these are no longer counterexamples to the ACOM. We assume that this linearization (Linearization (I)) takes place (after the ACOM) at SS.

A similar story will account for another group of apparent counterexamples to the ACOM, parentheticals. Consider (36).

(36) John did [\make a lot of money], frankly speaking, [PP\by]
engaging in some illegal transactions.)

In (36) an underscored parenthetical intervenes between the modified \( \theta \) and the \( X^0 \)-level head \( \theta \) of the modifier PP.

Again, suppose that cases like (36) involve two separate phrase markers, one for the parenthetical and another for the rest of the sentence, at DS, and that linearization (Linearization (II)) takes place after the ACOM, inserting the parenthetical as in (36). Then these will no longer constitute counterexamples to the ACOM.

We have evidence to believe that these processes of linearization do not affect semantic interpretation in some respects but do have some semantic consequences in others. McCawley 1982 notes that parentheticals in sentences like (37) act as if they were not constituents of the VP.

(37) John talked, of course, about politics, and Mary did too.

In (37) \textit{Mary did} means 'Mary talked about politics', not 'Mary talked, of course, about politics.' This indicates that the reconstruction of the elliptical VP in the second conjunct in cases like (37) takes place before the linearization of the parenthetical. I assume that 'VP-Deletion' is interpreted in the LF component, as convincingly argued for by Sag 1976, Williams 1977, etc.

McCawley goes on to show that nonrestrictive relative clauses behave like parentheticals in this respect. Thus we may treat them as parentheticals. I conclude that parentheticals are linearized at a post-LF stage, i.e. LF.

Notice that Linearization (I) (for coordinate constructions) must take place before the VP-Deletion Interpretation, since the former feeds the latter as in (37). This is consistent with our assumption that Linearization (I) applies at SS. The linearized forms may receive other interpretation. The order of coordinated
phrases may suggest a temporal sequence of events described.

Safir 1986 observes that we find scope effects with respect to parentheticals:

(38) John believes that Bill, in his strange way, loves Mary, and Harry does too.

In (38) only Bill can be the antecedent for his, although the PP in his strange way is not understood of Harry in the second conjunct with 'VP-Deletion'. The PP is understood to modify the manner of Bill's love, not John's belief. This fact shows that the PP is in construction with, and modifies, the phrase 'I loves Mary' in (38) at some stage of derivation, and that this interpretation is carried out after Linearization (II) (for parentheticals).

This entails that Linearization (II) must also take place in PF separately, because otherwise parentheticals would be missing in the phonetic outputs. This raises a serious question of how to match Linearization (II) in PF with that in LF'. Perhaps this process may be divided into two steps, the first for its abstract marking at or before SS and the second for its realization in PF and LF'.

2.2.3. The Construction of 'an easy to do test'

There are apparent counterexamples to the ACOM such as those in (39).

(39) an easy to take laxative; a tough to please boss

Nanni 1980 shows that only sequences consisting of adjectives followed by single infinitives may occur in prenominal position, not those that consist of adjectives followed by more than single infinitives [(40)], nor those that contain adverbial modifiers [(41)], nor those that contain for-PPs [(42)].
(40) *an easy to expect to finish problem
(41) *an easy to quickly clean room
(42) *an easy for Bill to finish problem

She notes that sequences of adjectives followed by single infinitives behave like compounds: they disallow complements (e.g. additional infinitives in (40) and for-PPs in (42)) and modifiers (e.g. adverbial modifiers in (41)). Lexical items in general exhibit such island-like behavior. Cf. Roeper and Siegel 1978. Nan-ni goes on to claim that these complex adjectives are lexically derived.

At any rate, if they are complex adjectives, as is plausible, then the forms in (39) observe the ACOM. The underscored phrases in (40), (41), and (42) are not complex adjectives but full-fledged APs, and are correctly excluded by the ACOM.

2.2.4. Specifiers

The grammatical sentences in (43) pose a problem to the ACOM as formulated in (15): the X⁰-level head of the modifier is not adjacent to the modified X in apparent violation of the ACOM.

(43)a. Did he [VP [V jump into the air] [NP [N two [N times]]]]?
b. Did he [VP [V talk about sex] [QP [C too [N much]]]]?⁴

In order to reconcile cases like those in (43) with the ACOM, I will claim that an element in specifier position is coindexed with the head, as often suggested in different contexts. The idea is that there is a special relationship between the head and its specifier. For example, the subject in the specifier position of IP(=S) may be related to I(NFL)(=the head of IP) through agreement in English and other languages. And then the wh-phrase in the specifier position of CP is related to its head C through selection, as Chomsky 1986b suggests.
I suggest that this specifier-head agreement in IP and CP be generalized to other XPs as well, i.e. NP, AP, QP, etc. It is well-known from many languages like Old English, French, German, etc. that determiners in the specifier position of NP agree in number, gender, case, etc. with the head noun in various ways. (44) French: son/*sa père 'his/her father'; *son/sa mère 'his/her mother'; *son/*sa/ses oncles 'his/her uncles'

Though we have little overt evidence for claiming such a relation in AP, QP, etc., I suggest that the specifier of XPs in general has an abstract relation of agreement to its head, which may or may not have overt realization. Then the underlined specifier (i.e. QP/DegP) in the modifier in (43) has an agreement relation to its head (i.e. N/Q). We might say that the specifier 'serves' as the head itself for the purposes of the ACOM in (15). There are a number of possible ways of executing this idea. The first that suggests itself is by coindexing the specifier and the head and then reformulating the ACOM in terms of adjacent coindexed items. I will leave this question of execution open. At any rate, under this auxiliary hypothesis (43) will be assimilated to standard cases that conform to the ACOM.

This auxiliary hypothesis about head and specifier will also provide an explanation for the fact that relative clauses are postnominal modifiers rather than premodifiers in head-initial languages like English. Consider (45):

(45)a. *[NP (the) [CP who [C[e] [IP Bill saw]]][man]]
    b. [NP the [man][CP who [C[e][IP Bill saw]]]]

The structure in (45a) obviously violates the ACOM, since neither the head of the modifier CP nor its specifier who is adjacent to the modified man. On the other hand, the structure
in (45b) can be taken to observe the ACOM if the specifier who
'serves' as the head $\emptyset$ of the modifier CP.

3. **The Universality of the ACOM**

3.1. **The Case of Head-initial Languages**

English is a head-initial language and observes the ACOM. It seems that other head-initial languages are subject to the ACOM. Consider the case of French, another such language. Rouveret 1978 discusses result clauses in French. Consider (46).

(46)a. *[$NP$ Un homme [$_{AP}[^{D_{egP}}$ si $[^{S}$ que toutes les conversations se sont tues]] furieux]] est entré dans la pièce.

b. [$_{NP}$ Un homme [$_{AP}[^{D_{egP}}$ si] furieux]] est entré dans la pièce, [$^{S}$ que toutes les conversations se sont tues]

'So angry a man came into the room that everyone remained silent.'

The ACOM correctly excludes cases like (46a), where $si$ the $X^0$-level head of the modifier $D_{egP}$ is not adjacent to the modified $furieux$, while it rules in those like (46b), where $si$ is adjacent to $furieux$. This is exactly parallel to English cases. The same account extends to $tant...que$ 'so many... that', $trop...pour(que)$ 'too...to', $assez...pour$ 'enough...to', $autant...que$ 'as many... as', etc.

French typically has postnominal modifiers. Since it is head-initial, its postnominal modifiers always observe the ACOM. The same holds of other postmodifiers, though not of premodifiers like $D_{egP}$ (in (46)). This is typical of head-initial languages.

3.2. **The Case of Head-final Languages**

Let us consider German. Observe the following forms.

(47)a. ein [$_{AP}$ [$^{A}$ auf seinen Sohn $[^{A}$ stolzer]]] Vater

'a father proud of his son'

'a father of his proud son'
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b. *een Vater [AP[^A auf seinen Sohn [A stolzer]]]

(48)a. der [VP[^V seine Pfeife [V rauchende]]] Mann

'the man smoking his pipe'

b. *der Mann [VP[^V seine Pfeife [V rauchende]]]

It is well-established that German is a head-final language. Thus, in contrast to a head-initial language like English, a phrasal modifier with a complement must precede the modificand in German, as the ACOM correctly predicts. This is illustrated by (47) and (48): the (a) forms with prenominal phrasal modifiers are grammatical, while the (b) forms with postnominal phrasal modifiers are ungrammatical.

In this connection I might note that Williams 1982 proposes the Head-Final Filter (HFF), a constraint barring post-head material in prenominal modifiers. This constraint will not only correctly account for the English data in (11), (14a), (20)- (21), (22b), (22c), (24), (40), (41), (42), (45a), etc., but also the German data in (47a), (48a), namely the cases of prenominal modifiers.

But since the filter says nothing about modifiers of non-nominal categories, it fails to account for (17), (18), (19), and (46). Also it is silent about postnominal modifiers, and hence it cannot account for (12), (14b), (22a), (47b), and (48b). A similar criticism applies to Emonds' RR (25), which is restricted to premodifiers, though not to modifiers of nominals. The RR has a further weakness in that it applies only to head-initial languages.

It is important to note that the following examples do not necessarily contravene my account.

(47)c. *e in Vater, auf seinen Sohn stolz,...
(48)c. der Mann, seine Pfeife rauchend,...
The $X^0$-head of the AP/VP in the (a) and (b) forms of (47)-(48) has a suffix: the adjective head in (47) has its characteristic adjectival suffix for agreement and so does the participial form of the verb head in (48). This can be taken to indicate that in conjunction with their complements they form adnominal modifiers.

On the other hand, the head of the corresponding AP/VP in the (c) examples of (47)-(48) lacks such a suffix. This fact suggests that these postnominal phrases are not adnominal modifiers but predicates, because predicate adjectives and predicate participial forms of verbs always lack such a suffix as in (49a) unlike adnominal modifiers in (49b), which do have such an agreement suffix.

(49)a. Der Weg ist lang. 'The way is long.'

b. der lange Weg 'the long way'
ein langer Weg 'a long way'

Then, the (c) examples of (47)-(48) are not counterexamples to the ACOM, since the AP/VP involved is not a modifier, hence immune to the ACOM.

NPs such as ein [leicht zu lesendes] Buch 'an easy to read book' can be taken to observe the ACOM under the assumption that leicht zu lesendes is not an AP with the suffixless adjective head leicht but a complex adjective with the adjective suffix -es following the participial suffix -d, much as in Nanni's analysis of their English counterparts. Cf. §2.2.3.

In German PPs must occur as postnominal modifiers exceptionally. But it is only a reflection of the fact that in German, PP is head-initial exceptionally (for a head-final language). Thus, exactly as in English sentences with prepositions (cf. (22)), PP modifiers occur postnominally, where the modifier head P is adjacent to the modified, as the ACOM predicts.
(50)a. der Mann [pp an der Ecke] cf. *der an der Ecke Mann
the man on the corner
b. der Mann [pp mit dem Brief] cf. *der mit dem Brief Mann
the man with the letter

Japanese modifiers occur prenominally without exception. Given the ACOM, this is to be expected more or less, because Japanese is strictly head-final. I say more or less, because the ACOM always allows modifiers with no complements or no modifiers of their own, regardless of whether they precede their modificands or not.

Now consider (51) and (52).
(51)a. takai yama
   high mountain
b. *yama takai
(52)a. sizukana mati
   quiet town
b. *mati sizukana

Since the adjective has no complement or modifier in (51a), the ungrammaticality of (51b) would not be predicted by the ACOM if takai were assumed to constitute an adjective, a further puzzle to be resolved somehow. Actually, (51b) supports the ACOM if we assume that in Japanese I(NFL) may take as complement either AP or VP, which in turn may contain AP. Then under the standard assumption that the final -i in takai is a present tense form of the adjective, takai is composed of the adjective taka and the tense morpheme -i. If so, takai containing I, where tense morphemes belong, must be taken to represent at least I (if we expand the class of modifiers to include categories of the ʎ level [cf. (6iii) and Fn. 4]) or IP, the maximal projection of I, with a sentence-initial null subject, an option allowed in Japanese. Then the facts about (51) are exactly what the ACOM predicts:
the head I of the modifier I or IP is adjacent to the modificand in (51a) but not in (51b).

A similar account holds of (52). The final -na in the modifier is normally viewed as an adnominal variant of copula da 'be'. Then sizukana can be taken as either a VP or I/IP with a null I (plus a null subject in the case of IP). So the facts about (52) are again just what the ACOM predicts. This line of analysis generalizes to cases like hasitte-ru syoonen 'running boy' with the present tense form -ru. Turkish, another head-final language, seems to confirm my account in terms of the ACOM.

4. Concluding Remarks

4.1. The ACOM and Traces

Williams 1982 shows that if we assume something like his HFF (cf. §3.2.) and the existence of a trace left behind in verbal passive constructions, we might be able to account for the ungrammaticality of verbal passive forms such as *the promised people in contrast to adjectival passive forms like the promised book, which are lexically derived perhaps without a trace.

He claims that a verbal passive form has the SS as in (53):

(53) \[
\{_{NP_{\text{VP}}}^{V \text{ promised}} \text{\_t\_}_{\text{N \ people}}}\]

Notice that (53) obviously violates our ACOM and the HFF, if the trace counts in these conditions.

This account can be extended to middle constructions. Keyser and Roeper 1984 suggest that middle constructions such as (54b) derive through syntactic movement from underlying forms such as (54a).

(54)a. e bribe bureaucrats easily

b. Bureaucrats bribe t easily.

Then, the ungrammaticality of a form like *easily bribing bureau-
crats may be attributed to the ACOM, as shown in (55).

\[(55) *\text{[VP}_\text{NP} \text{ easily [\text{bribing} \text{ bureaucrats}]]}\]

If this is correct, a syntactic trace clearly plays a role in the ACOM. Thus we must assume that group genitives arise through reanalysis, not involving movement. Cf. §2.2.1.

4.2. The Summary

It is not easy to decide whether degree clause and QP constructions such as (17b), (18b), (19b), (20b), etc. derive via movement from (17a), (18a), (19a), (21), etc. respectively, or are base-generated and interpreted. The null hypothesis is that these clauses may be freely base-generated in complement position as in (17a), (18a), (19a), (21), etc. (and optionally moved) or in the final position of a modified phrase (and optionally further moved).

Consider (56) [(56c) from Browning 1987]:

\[(56)\]

\[\text{a. } *[\text{NP}_\text{QP}_{\text{DegP}} \text{ too [to dance with them all]} \text{ many}] \text{ people} \]

came to the party (in complement position)

\[\text{b. } *[\text{NP}_\text{QP}_{\text{DegP}} \text{ too} \text{ many [to dance with them all]} \text{ people}] \]

came to the party (in post-quantifier position)

\[\text{c. } [\text{NP}_\text{QP}_{\text{DegP}} \text{ too} \text{ many] people [to dance with them all]}] \]

came to the party (in postnominal position)

All the three cases in (56) may be base-generated, where (56a) and (56b) will be ruled out by the ACOM, while (56c) may surface or optionally undergo extraposition.

Under these assumptions the ACOM may apply at SS, since cases like (17b) may be base-generated, not containing at SS a trace between the degree word (e.g. so) and the modificand (e.g. tired) that might lead to a violation of the ACOM.

Thus the various components of the grammar might be related
as indicated in (57), where four processes are ordered at SS as shown: (ii) and (iii) are intrinsically ordered with respect to each other, and (i), the pair of (ii) and (iii), and (iv) are extrinsically ordered.

(57)

\[
\begin{aligned}
&\text{DS} \\
&\text{Move-} \alpha \\
&(\text{i) Reanalysis for group genitives [§2.2.1.]} \\
&(\text{ii) Principle of Modification [(6) in §1.2.]} \\
&(\text{iii) ACOM [(15) in §2.1.]} \\
&(\text{iv) Linearization (I) (for coordination) [§2.2.2.]} \\
\end{aligned}
\]

\[
\begin{aligned}
&\ldots \\
&\text{Linearization (II) (for parentheticals) [§2.2.2.]} \\
&\ldots \\
&\text{VP-Deletion Interpretation [§2.2.2.]} \\
&\ldots \\
&\text{Linearization (II)} \\
&\ldots \\
&\text{LF'}
\end{aligned}
\]

At any rate, the ACOM seems to provide an explanation for the linear ordering of modifiers to a certain extent in a wide variety of at least configurational languages. It is a possible candidate for the status of a universal principle.

Footnotes
1. This analysis leaves the following case unaccounted for.

\( (i) \) *a [A proud] man [of his children] 

The postposing of complements of an adjective across the modificand \( \overline{N} \) does not improve acceptability in cases like (i). However, cases like (ii) and (iii) are perfect.
(ii) a similar job to this cf. job similar to this
(iii) the first man to arrive
So we need a further explanation for cases like (i).

2. Yagi 1977 shows that at least at some stage of derivation the internal structure of AP is of the form (i), not (ii), basically my structure.

(i) \[ AP[A\_Deg very][A\_afraid][PP of dogs] \]
(ii) \[ AP[Deg very][\_A\_afraid][PP of dogs] \]

Cf. Namiki 1979. Notice that even if (i) were the SS, my account in terms of the ACOM would not be affected at all, since neither (i) nor (ii) end in the head A. It might be that the initial structure is (ii), which is later 'reanalyzed' as something like (i).

3. Some group genitives are out because they have not undergone reanalysis. Thus this problem reduces to a question as to when the reanalysis can take place. This 'lexicalizability' may depend on styles (colloquialism versus formal writing) among others.

4. An SS like (i) may require us to revise (6) and generalize the modifier \( \alpha \) to include \( X \) as well as XP: \( I \) modifies \( N_2 \) in (i).

(i) \[ a [N_1\_N_2\_boy][I\_I\_not\_read\_ing][VP t_i\_the\_book]] \]
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