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A Modular Approach to the Grammar of Additive Particles: the Case of German *Auch*

MARGA REIS AND INGER ROSENGREN
Universität Tübingen and Lunds Universitet

Abstract

In this paper we give a modular account of the grammar of additive particles. In doing this we take issue with the standard descriptions of focus particles, which are based on just one possible pattern: the particle preceding the main stressed constituent it relates to (its RC). Additive particles, however, occur in a second, equally unmarked pattern: the RC preceding the main stressed particle. Former accounts do not only miss this complementary distribution as to position and stress pattern relative to the RC, but, as we demonstrate in detail, they misrepresent the relation between syntax, semantics and focus structure of these (and similar) particles in general.

Using German *Auch* as our prime example, we argue in particular (i) that there is just one *Auch* underlying the ± stressed variants, and that the complementary distribution cannot be explained by a movement analysis; (ii) that the set of alternatives the *Auch* proposition p and some contextually given proposition q induced by *Auch* belong to, is not supplied by the focus structure of p but by comparing p and q; (iii) that the syntactic scope of *Auch* is crucial for its semantics in that the adding operation applies to the material it contains, no matter whether it is the RC or predicative material common to p, q; (iv) that the complementary distribution of ± stressed *Auch* follows from the modular interaction of the syntax and semantics of *Auch* with focus structure; (v) that *Auch* gives rise to two utterance meanings, 'in addition/furthermore' and 'likewise', directly correlating with whether or not the scope of *Auch* contains RC material. What we argue, in short, is that so-called 'focus particles' are in reality 'scope particles'.

1 INTRODUCTION[1]

The by now accepted term for elements like English *only, also, even,* or their German equivalents *nur, auch, sogar* is 'focus particles' (or 'focus adverbs'). The conspicuous way they interact with focus structure is exemplified in (1), and has been roughly described like this: the respective focus particle enters a specific relation to the focused constituent (its 'related constituent' = RC), in our case *Maria*, indicating that Maria is the only one (*nur*), an additional one (*auch*) or the least expected one (*sogar*) of a set of candidates to fulfil the proposition in question, in our case: 'Peter wird x besuchen' ('Peter will visit x').

(1) a.   Peter wird nur *MaRIa* besuchen.[2]
     b.   Peter wird auch *MaRIa* besuchen.
     c.   Peter wird sogar *MaRIa* besuchen.
          Peter will {only/also/even} Maria visit
          Peter will visit {only/also/even} Maria.

Particles of this kind are found in practically all languages (see König 1991a). In recent years, an enormous amount of linguistic effort has gone into explicating their status and function, and as the term 'focus particle' indicates, focus structure has been a constitutive part of the explication. Strangely enough, however, there are only scattered remarks on the focus behaviour of these particles themselves, although many of them—as is well known—have stressed as well as unstressed variants. A moment's reflection shows that this cannot easily be integrated into the standard explications, which are tailored to the pattern illustrated in (1), namely 'unstressed particle > stressed RC'. Moreover, not all particles have stressed variants under the same conditions; cf. (1) vs. (2):

(2) a.   *Peter wird *Maria* NUR besuchen.
     b.   Peter wird *Maria* AUCH besuchen.

Whereas restrictive particles like *nur* typically stick to the pattern in (1a), disallowing non-contrastive stressed variants, especially to the right (2a), plain additive particles like *Auch*[3] occur equally unmarked to the left as well as to the right of the RC, exhibiting the following accentuation pattern: if to the left of the RC the RC bears main stress and the additive particle does not (1b); if to its right it is the other way around (2b), main stressed additive particles being no more contrastive or marked than their unstressed counterparts. In other words, unstressed vs. stressed additive particles are in complementary distribution with respect to position and stress of the RC: whichever comes later, the additive particle or the RC, will bear the nuclear accent (NA).

As is well known, the regularities just stated and illustrated by German examples hold for restrictive vs. additive particles in a great many languages (see König 1991a). This does not mean, however, that they are always as clearly visible as they are in German; cf. the English examples in (3):

(3) a.   Only *PEter* will visit Mary.   **Peter* will ONly visit Mary.
     b.   Peter will also visit *MAry*.   *Peter* will ALso visit Mary.
     c.   *Also *PEter* will visit Mary   **Peter* will visit *Mary* ALso.
     d.   *Peter*, TOO, will visit Mary.   Peter will visit *Mary*, TOO.
     e.   *Too *PEter* will visit Mary.
     f.   Peter will not visit *Mary* EITHer.

While *only*, just like German *nur*, visibly behaves as expected (3a), the picture offered by additive particles looks more complicated: unlike German, English has two primary additive particles: *also* and *too*, and these are subject to various, not always complementary restrictions: *also* appears stressed as well as unstressed, following its RC in the former case and preceding it in the latter; but, again unlike German *Auch*, there are syntactic restrictions as to its position relative to the RC and the status of the RC itself (3b, c). As for *too*, this particle is always stressed, but its occurrence is restricted to a few specific positions, the unmarked position being at the end of the clause (3d, e). In this position we also find the particle *either*, which is always stressed, taking over the additive job in negative clauses (3f). In spite of these restrictions and lexical variations, the main regularity holds in English, too: unstressed (*also*) and stressed occurrences of particles (*ALso, TOO, EITHer*) are in complementary distribution with respect to position and stress of the RC. But the fact that more than one lexical item partakes in it obscures this distribution. Nor is it easy to keep the specific semantics of the various lexical items under control.

It is the aim of this paper to isolate and describe the properties of additive particles in such a way that their complementary behaviour can be accounted for. In doing this, we shall take issue with the standard approach to focus particles, which is exclusively based on the pattern underlying (1): it does not only miss the generalization governing the stress behaviour of additive particles relative to their RC, but—as we shall demonstrate in detail—it also fails properly to account for the relation between syntax, semantics and focus structure of these particles in general.

In pursuing our aim, our object of investigation will be German *Auch*. The crucial advantage of this is the following: whereas in many other languages—for example, in English as we have seen in (3)—the job of additive particles is divided between several lexical items, German *Auch* has access to all positions open for additive particles, thus exhibiting the central complementary distribution in full and undisturbed from possible lexical differences. Moreover, given the identity of form, *Auch* has at least a very good chance of being the same word throughout. We hope that our investigation of German *Auch* will not only lead to a better understanding of the specifics of additive particles but also lay the basis for a more consistent account of focus particle behaviour in general.

The hypotheses we shall argue for in particular, are

- that there is indeed just one *Auch* underlying the ± stressed occurrences of this form;
- that the complementary distribution of ± stressed *Auch* fragmentarily illustrated in (1b)–(2b) follows from the semantics of *Auch* interacting

in a strictly modular way with its syntactic distribution and focus structure;

- that the division of the *Auch* proposition into RC and the rest of the proposition is not determined by its focus structure (as previously assumed), but by comparing it with some contextually given proposition in the same set of alternatives;

- that, instead, the syntactic division of the *Auch* proposition into material inside vs. outside the syntactic scope of *Auch* plays the crucial role for its semantics: what *Auch* adds to the corresponding part of a proposition in the same set of alternatives is not the RC (as previously assumed), but the material in its syntactic scope, which may be either the RC or the identical predicative material common to both propositions;

- that in principle *Auch* gives rise to two utterance meanings, 'in addition/ furthermore' and 'likewise', which depend on whether or not the syntactic scope of *Auch* contains RC material.

To put it in a nutshell: we shall argue, using *Auch* as our prime example, that the so-called 'focus particles' are in reality 'scope particles'.

The paper is organized as follows: in section 2, we will describe the complementary distribution of the ±stressed variants of *Auch*, and determine what kind of co-constituents both occur with, arguing that all our findings support the hypothesis that there is only one *Auch*. We will then show that *Auch* is a base-generated left-adjunct to XPs and sketch its syntax in GB-oriented terms. In section 3, we will discuss what we consider shortcomings of the previous semantic analyses of *Auch* and motivate a different approach allowing us to explain the relation between the syntax and semantics as well as the behaviour of both variants of *Auch* on a unified basis. In section 4, we will discuss the interaction between the syntax, semantics and focus structure of the *Auch* clause as well as the interaction of this whole complex with various forms of information structure, and derive the complementary distribution worked out in section 2. Finally, we will show that ±stressed *Auch* give rise to two utterance meanings, 'in addition/ furthermore' and 'likewise'. Section 5 contains a brief summary.

2 THE SYNTAX OF *AUCH*

In section 1 we presented examples showing that unstressed and stressed *Auch* display equally unmarked behaviour. In this section we shall show (i) that they are just variants of one and the same *Auch* that are in complementary distribution with respect to the RC and the NA (as part of the focus); (ii) that *Auch* itself is an XP adjoining to XPs of all kinds; (iii)

that the complementary distribution of its variants cannot be accounted for by deriving *AUCH* structures from *auch* structures, both being equally 'basic'; (iv) that the syntactically relevant notion is 'co-constituent (= CC)' of *Auch*, i.e. the XP *Auch* adjoins to, rather than 'RC'. Finally, we shall describe the various syntactic *Auch* configurations in GB-oriented terms.

Before we start, a brief remark on terminology. In the following the RC of *Auch* will be called AC (= 'added constituent'). The AC is the 'variable material' in the proposition of the *Auch* clause compared with some other proposition q in context, the rest the material common to both propositions, the ID (= identical material). The ID is normally contained within the same proposition as the AC, representing what the *Auch* clause has in common with this other proposition.[4] (For details see section 3.) We shall see in this section that AC as well as ID enter interesting relationships with the syntax of *Auch*.

2.1 auch/AUCH *in complementary distribution*

In this section we shall look at the distribution of *auch/Auch* relative to overt material.

2.1.1 The AC is part of the clause

Let us begin with a few typical cases showing that *auch/AUCH* are in complementary distribution with respect to their ACs and the position of the NA or focus respectively.

2.1.1.1 The whole AC is to the left or right of Auch. As already mentioned in (1), unstressed *auch* typically precedes the whole AC, which then invariably bears the NA (4)–(5); the material to the left of *auch* is ID material.

(4) a. Auch *PEter* hat das Buch gelesen.   (nicht nur *PAUL*)[5]
     Also Peter has the book read
     Peter, too, has read the book.   *(not only Paul)*

   b. Peter hat das Buch auch *geLEsen.*   (nicht nur *geKAUFT*)
      Peter has also read the book.   *(not only bought it)*

   c. Peter hat auch *das BUCH* gelesen.   (nicht nur *die RezenSION*)
      Peter has also read the book.   *(not only the review)*

   d. Peter hat auch *dem Paul ein BUCH*   (nicht nur *dir das ESsen*
      gekauft.   bezahlt)
      Peter also bought a book for Paul.   *(not only treated you to the*
                                                              meal)

(5) *PEter (auch) hat (auch) das Buch gelesen.
   Peter (also) has (also) the book read

Unstressed *auch* is usually adjacent to its AC (4), but there are also cases of optional non-adjacency (6). They seem to be somewhat degraded, but they certainly occur all the time, at least in spoken language.[6]

(6) a. Peter hat auch gestern   dem Paul *ein BUCH* gekauft.

                                          (nicht nur *eine CD*)

    Peter has also yesterday the Paul a book bought

    Yesterday, Peter also bought a book for Paul.   (not only a CD)

  b. Peter hat auch das Buch *geLEsen.*   (nicht nur *geKAUFT*)

    Peter has also read the book.   (not only bought it)

With *AUCH*, matters are just the other way around: main stressed *AUCH* typically follows its AC (7)–(8), having ID material to its right. Again, as (7) shows, there is adjacency as well as non-adjacency between the AC and *AUCH*.

(7) a. *Peter* hat AUCH das Buch sofort   gelesen.
   Peter has also   the book immediately read
   Peter also read the book immediately.

  b. *Peter* hat das Buch AUCH sofort gelesen.
   Peter also read the book immediately.

(8) a. *Peter hat AUCH *das Buch* sofort gelesen.
   b. *Peter hat AUCH das Buch sofort *gelesen.*

In other words, regarding position relative to the AC as well as stress (focus) behaviour, *auch* and *AUCH* are in complementary distribution.

Note that this also includes the distribution of secondary stress, for not only the AC preceding *AUCH* may, optionally, have one (9), but also the *auch* preceding its AC (10):

(9) {Peter/PEter} hat (AUCH) das {Buch/BUCH} (AUCH) sofort gelesen.
(10) a. Peter hat {auch/AUCH} *das BUCH* gelesen.
   b. Peter hat das Buch {auch/AUCH} sofort *geLEsen.*
   c. Ja, {auch/AUCH} mit *DIEsem* Fall hatten wir Probleme.
      Yes, also   with this   case had   we problems
      Yes, also with this case we had problems.

The specific functions of secondary stress on *Auch* will be discussed in section 4.2. Here, it suffices to notice that it may be assigned. Thus, the complementary distribution of *auch/AUCH* boils down to a very simple regularity:

(11) *The last element in the* Auch/AC *pair must carry the NA, the first element may carry a secondary accent.*[7]

Let us now check this regularity more carefully against cases where an overt AC constituent is moved to the left of *Auch* and leaves a trace behind in its base position. We see immediately that in constellations resulting from scrambling, topicalization or other instances of wh-movement it is the overt position of the AC constituents that counts. This is especially clear in cases like (12), where *Auch*, stressed or not, is in the same syntactic position, the AC being optionally to the right (base position) or to the left (movement position):

(12) a. Sie wollte auch Peter HEIraten.
   She wanted also Peter marry
   She also wanted to marry Peter.

  b. [Peter HEIraten]$_j$ wollte$_i$ sie AUCH t$_j$ t$_i$.
   Marrying Peter is what she wanted, too.

  c. *[Peter HEIraten]$_j$ wollte$_i$ sie auch t$_j$ t$_i$.

This shows that (11) pertains only to the overt distribution irrespective of its origin.

There is, however, one apparent exception to the above generalization: the finite verb, moved to the left by verb movement, may figure as the AC of *auch* (13a, b), but not of *AUCH* (13c):

(13) a. daß Peter das RefeRAT auch *TIPPte*
   that Peter the report   also typed
   that Peter also typed the report

  b. Peter *TIPPte*$_i$ das Referat auch t$_i$. (Er *korriGIERte*$_i$ es nicht nur t$_i$.)
   Peter also typed the report.   (He did not only correct it.)

  c. *Peter *tippte* das Referat AUCH t$_i$.

But on closer inspection this 'exception' is to be expected, for verb movement *is* always reconstructed,[8] no matter whether or not the verb is stressed, whereas scrambling and wh-movement types are not. Hence, the position of the trace is the relevant position here. Thus, (13) also conforms to the basic regularity formulated above, and the complementarity of *auch/AUCH* is again confirmed.

2.1.1.2 Split cases. In the examples given in the previous section the ID material was frequently split up, yielding the following combinations of the AC with ID material:

(14) a. (ID) *auch* (ID) AC (ID)
　　 b. (ID) AC (ID) *AUCH* (ID)

These combinations reflect the complementary distribution of *auch/AUCH* in that overt mixture of ID/AC material occurs only to the right of *auch* and to the left of *AUCH*. But they also show a potential asymmetry between *auch* and *AUCH* in what occurs to the right: *auch* has always AC material to the right (overtly or reconstructed in the case of the finite verb) but also allows ID material there, whereas the overt material to the right of *AUCH* is always ID material. (Traces of constituents moved to the left and figuring as AC are of course possible; see (12) above, but not relevant here.)

In this section we shall look at cases in which the AC is split, one overt part being to the right, the other to the left of *Auch*. This presupposes an AC consisting of constituents that can be syntactically separated, which more or less boils down to the AC being a V projection. What we will show is not only how splits fit into the complementary picture of *auch/AUCH*, but also that the asymmetry concerning the right hand side of *auch/AUCH* is systematic: overt material to the right of *AUCH* is always ID material.

Turning first to *auch,* split examples like (15) have been cited and discussed by Jacobs (1983: 114–117):[9]

(15) a. Gerd war verärgert, weil 　 Dr. No nicht nur *einen KolLEgen*
　　　　Gerd was annoyed because Dr. No not only a 　 colleague
　　　　zu Rate zog, sondern *Luise auch IMPFte.*
　　　　to advice drew but 　 Luise also vaccinated
　　　　Gerd was annoyed, because Dr. No not only asked a colleague for advice but also gave Luise an injection.

　　 b. Gerd war verärgert, weil 　 Dr. No nicht nur *Luise IMPFte,*
　　　　Gerd was annoyed because Dr. No not only Luise vaccinated
　　　　sondern *ihre Krankengeschichte auch seinem KolLEgen*
　　　　but 　 her medical history also his 　 colleague
　　　　anvertraute.
　　　　confided
　　　　Gerd was annoyed, because Dr. No not only gave Luise an injection, but also told her medical history to a colleague of his.

As the *nicht nur* continuations show, the object preceding *auch* always belongs to the AC, thus constituting partial exceptions to the ordering regularity *auch* > AC as stated. According to Jacobs (1983: 116) these exceptions are licensed by the preposed AC-parts being c-construable ('thematic') and

consequently non-accented ('de-accented'). But while this is typical, it is not the rule; see (14), where *einem Blinden* is clearly rhematic:

(16) Gerd hat heute nicht nur *ABgewaschen,* sondern *einem Blinden* auch
　　　Gerd has today not only off-washed but a 　 blind also
　　　über die STRASse geholfen.
　　　across the street 　 helped
　　　Today Gerd didn't only do the dishes, but he also helped a blind person across the street

If so, the only regularity governing these exceptions is that the preposed AC part cannot bear the NA, in other words: the AC part carrying the NA must always be to the right of auch. Note that the AC part carrying the NA must be the constituent that would normally carry the NA, if *auch* were not part of the clause. This fact shows conclusively that the regularities in question do not pertain to *Auch* in relation to the AC as such, but to the AC constituent potentially bearing the NA.

Turning now to *AUCH,* we do not find comparable splits; cf. the *AUCH* counterpart of (16), which is out no matter where *AUCH* is placed:

(17) Gerd hat heute *ABgewaschen,* und *einem Blinden* (*AUCH) *über die Straße* (*AUCH) *geholfen.*

In apparent contrast, cases like (18) are totally acceptable, although, at first glance, the AC seems to be split:

(18) Paul hat dem Vater nicht geschrieben, und er hat die Mutter
　　　Paul has the father not written 　 and he has the mother
　　　AUCH vergessen.
　　　also forgotten
　　　Paul didn't write to his father and he also forgot his mother.

Why is this so? The answer is that what is to the right of *AUCH* may be regarded as ID material, for *not to write to someone* may be equated with *forgetting someone* in the given co-text. In other words, in this interpretation (18) is no split case at all—the AC (*Vater* vs. *Mutter*) is totally to the left of *AUCH*—and only if interpreted in this way, will (18) be acceptable.

Summarizing then, the asymmetry noted above is systematic: *overt material to the right of* AUCH *must be ID material.*

This finding is also confirmed by looking at semi-acceptable cases like (19):

(19) Paul brachte eine 5 nach Hause. ??Und zu allem Unglück hat er
　　　Paul brought a 5 to home 　 and to all 　 bad luck has he
　　　seine {Uhr/UHR} AUCH verschlampt.
　　　his watch 　 also 　 mislaid
　　　Paul got a D and on top of this he managed to lose his watch, too.

They are not good, but considerably better than (17). The main reason for this is that, while 'eine 5 nach Hause bringen' and 'seine Uhr verschlampen' cannot possibly be identified, context will at least help us to identify an intrinsic common denominator (things going wrong and/or things usually making people unhappy), making the two propositions reasonably similar (which means that they appear as instances of the same type of event). Note that the part of the AC that would carry the NA, if *Auch* did not carry it, stays to the left of *AUCH* (whereas in split cases involving *auch* it must stay to the right).

To conclude, we have seen once more that (i) *auch/AUCH* are in complementary distribution with respect to the AC constituent able to carry the NA, (ii) *Auch* can only bear the NA if in the actual co-text no part to its right can bear it. What we have seen in addition is that *AUCH* differs from *auch* in not allowing AC splits.

2.1.2 Propositional constituents as ACs

As is to be expected, *auch* and *AUCH* behave in principle in the same way when the AC is the entire proposition as they do when the AC is only part of it.

2.1.2.1 Unsplit cases.

As for *auch*, the above regularities make us expect that it occurs to the left of the entire propositional AC, if possible. Syntax provides two ways to realize this option: *auch* may be adjoined to the CP,[10] see the 'initial *Auch*' case (20a)[11] as well as (21a, b), or to the VP denoting the whole proposition (20b, 21c):

(20) a. [Der Fernseher ist kaputt.] Auch hat ein Student mein AUto
    [The TV set   is broken.] Also has a   student my   car
    angefahren. [Dies alles hat nicht gerade meine Laune verbessert.]
    hit.   [This all   has not   exactly my   mood improved.]
    [The TV is broken.] Moreover, a student hit my car. [All this didn't exactly improve my mood.]
  b. [Der Fernseher ist kaputt.]
    Es hat auch *ein Student mein AUto angefahren.*
    It has also a   student my   car   hit.
    [Dies alles hat nicht gerade meine Laune verbessert.]
    [. . .] *Moreover, a student hit my car. [. . .]*
(21) a. [Der Fernseher ist kaputt.] Auch *daß ein Student mein AUto*
                              Also that a   student my   car
    angefahren hat, [hat nicht gerade meine Laune verbessert.]
    hit   has

    [. . .] *The fact that a student hit my car didn't exactly improve my mood.*
  b. [Daß der Fernseher kaputt ist und] auch *daß ein Student mein AUto angefahren hat,* [hat nicht gerade meine Laune verbessert.]
  c. [Daß der Fernseher kaputt ist und] daß auch *ein Student mein AUto angefahren hat,* [hat nicht gerade meine Laune verbessert.]

Neither (20a, b) nor (21a, b, c) are quite equivalent. But in either case the whole proposition can be the AC only if there is a common denominator—the ID—for the propositions connected by *auch*, in this case that the events are equally annoying. Note that the co-text (*dies alles hat meine Laune nicht verbessert*) lends a helping hand in identifying the ID, but this is not obligatory. What is obligatory, however, in these cases, is that the proposition(s) the *auch* clause is related to immediately precede it (the reason being, presumably, that otherwise the common denominator acting as the ID for propositional ACs would be too hard to identify).

As for *AUCH*, we do not find any simple *AUCH* clauses with unsplit propositional ACs, for the same reasons, of course, we did not find split cases with *AUCH*: overt AC-material to the right of *AUCH* is disallowed. We shall return to this fact below.[12]

2.1.2.2 Split cases.

As expected, *auch* may also turn up within a propositional AC, provided it is to the left of the constituent that would carry the NA if *auch* were not part of the clause. Cf. (22), the counterpart to (16):

(22) Es hat nicht nur Gerd heute ABgewaschen, sondern (auch) *Peter*
    It has not   only Gerd today off-washed but   also Peter
    (auch) *einem Blinden* (auch) *über die STRASse geholfen.*
    also a   blind   also across the street   helped
    Today Gerd didn't only do the dishes, but Peter also helped a blind person across the street.

As for *AUCH*, we also find what we expect: no true splits, but only counterparts to the apparent 'split' case (18).

In sum, only *auch* may take propositional ACs in simple clauses. The AC may be entirely to its right or split up, provided the constituent that would carry the NA, if *auch* were not part of the clause, stays to its right.

2.1.3 Summary

We have seen in section 2.1. that *auch* and *AUCH* are indeed in complementary distribution at surface structure: *auch* requires that the AC is (totally or partly) to its right and that it (or its rightward part) carries the NA, *AUCH* requires that the AC is (totally) to its left, ruling out a further accent to its right. Applying structuralistic reasoning to these findings, the complementary distribution suggests that *auch* and *AUCH* are indeed the same *Auch*, and the way in which they are complementary— *Auch* or (a part of) the AC, whichever comes last, carries the NA—suggests that this distribution is related to very general focus regularities (cf. section 4). There is, however, a remarkable asymmetry in this complementary distribution in that only *auch* allows split and propositional ACs, whereas *AUCH* does neither, which is based on the two systematic regularities worked out in this section: (i) *auch* requires to its right at least the AC constituent potentially bearing the NA; (ii) *AUCH* disallows overt AC material to its right.

2.2 Can AUCH *clauses be derived from* auch *clauses?*

Let us now turn to the question, how the complementary distribution described in section 2.1 is to be accounted for. We have already indicated that we take the relative order of *Auch* and (the NA part of) the AC at face value and that we will derive the different stress patterns by independent focus principles. The approach in the previous literature, however, has been more or less the other way around: since *Auch* is commonly taken to be a 'focus particle', i.e. a particle selecting for a focus (the AC) in its scope, the assumption is almost inevitable that the complementary distribution of *auch* and *AUCH* with respect to NA and AC position results from some kind of leftward AC-movement (combined with *Auch* picking up the focus accent).[13] In this section, we shall show that this assumption is untenable, no matter whether it is implemented by a straightforward AC movement analysis (section 2.2.1), or by a more sophisticated AC-bound variable analysis (section 2.2.2).

2.2.1 Can AUCH clauses be derived from auch clauses by AC movement?

The following arguments show that a straightforward movement analysis would be quite *ad hoc*, and in some respects impossible:

(a) The ACs to the left of *AUCH* may be in a base-generated position. The most notable case in point is illustrated in (23):

(23) weil   ja   *Peter* es ihm AUCH zeigen wollte.
     because yes[MP] Peter it him also   show   wanted
     because Peter wanted to show it to him, too.

The standard assumption in this case (well supported by the evidence) is that the subject must be in its base position, since it is below the modal particle (MP) and above weak pronouns that have remained in the VP (see Lenerz 1993, cf. also Ormelius-Sandblom 1997).

(b) Some types of ACs are possible for *AUCH*, but not for *auch*: a first case (cited already by Kowalski 1992: 92ff) are non-overt elements like those in (24):

(24) a. preverbal ellipsis: Hab ich AUCH schon erledigt.
                              Have I also   already finished
                              I've already finished this, too.

     b. imperative: Kommt bitte   pro AUCH.
                              Come   please also
                              Please come, too.

     c. infinitival subject: Er bat ihn, PRO AUCH zu kommen.
                              He asked him   also   to come
                              He asked him to also come.
                              (! ≠ Er bat ihn AUCH, zu kommen.)
                              (*He asked him, too, to come.*)

While (24a) might be possibly explained away by assuming ellipsis of the preverbal constituent to happen after movement, this explanation does not work in (24b) and (24c), for which we will have to assume base-generated pro/PRO elements,[14] for why should these elements move at all before Spell out?

A second case is provided by wh phrases, which are perfectly good ACs for *AUCH* (25a), but impossible as right-adjacent ACs for *auch* (25b):[15]

(25) a. [Ich stand vor dem Eingang.] Und wer stand da   plötzlich
        [*I stood at the entrance.*]   And who stood there suddenly
        AUCH?
        also
        [*I stood at the entrance] and who was there, too, all of a sudden?*

     b. *Auch WER stand da plötzlich?/ *WoHIN ist [auch WER]
        Also who stood there suddenly/ Whereto is also who
        gegangen?
        gone

(c)   Configurations where the AC is excluded from the scope of *AUCH*: a case where the exclusion is syntactically motivated is (26) (see Kowalski 1992: 91), where *AUCH* is inside a predicate phrase (26a) which cannot possibly host its AC, the overt subject *Petra*. Hence, (26a) has no grammatical source, which would have to be (26b).

(26) a.   Petra gilt   als AUCH sehr ehrgeizig.
      Petra is supposed as also   very ambitious
      Petra is supposed to be very ambitious, too.
    b.   *Es gilt   als auch PEtra sehr ehrgeizig.
      It is supposed as also Petra very ambitious.

A clear case where the exclusion is semantically motivated is (27) (also modelled after an example from Kowalski 1992: 105f).

(27)   [Peter ist 1.80 groß.]
     [Peter is 1.80 metres tall.]
    a.   Von seinen Freunden ist nur {Johannes/JoHANnes} AUCH
      Of his   friends is only Johannes   also
      1.80 groß.
      1.80 tall
      Among his friends only Johannes is also 1.80 metres tall.
    b.   *Von seinen Freunden ist auch nur JoHANnes 1.80 groß.

Whereas (27a) has the sensible meaning 'Johannes is also 1.80 (with the implicature that there is someone else of the same height, here instantiated by Peter) and nobody but Johannes is also 1.80', (27b) would have to mean 'nobody but Johannes is 1.80 and nobody but x ≠ Johannes is 1.80', which is a glaring contradiction. In other words: the movement analysis implies not only reversal of relative scope, but also that *auch* and *nur* in (27) apply to the same set of alternatives, which in view of the contrary meanings of these particles is impossible.

(d)   Crucially different behaviour of post-posed *nur/sogar*, which come closest to *Auch* in that they also occur after their AC, and with which 'post-posed' *AUCH* is often treated on a par (see e.g. Jacobs 1983: 101ff):

(28)   PEter {nur/sogar/*auch} hat einen Aufsatz geschrieben.[16]
     Peter {only/even/ also} has an   essay   written
     {Only/even} Peter wrote an essay.
(29) a.   PEter hat {nur/ sogar /*auch} ein Buch verfaßt.
     Peter has {only/ even / also} a   book written
     {Only/even} Peter wrote a book.

    b.   GeTIPPT hat Peter das Referat {nur/ sogar/*auch}.
     Typed   has Peter the report {only/ even / also}
     Peter {only/even} typed the report.
(30) ?* weil   ihn PEter gestern   {nur/ sogar} besuchte.
     because him Peter yesterday {only/ even} visited
(31) a.   *{Peter/PEter} wird NUR kommen.
     Peter   will only come
    b.   Es wird NUR Peter kommen.
     It will only Peter come
     Only Peter will come.
(32)   Peter kommt AUCH.
     Peter comes too
     Peter is coming, too.

Contrary to *auch*, (i) adjacent post-position of *nur/sogar* is possible, cf. (28), (ii) leftward movement of the AC is possible, but only to the preverbal position, cf. (29)–(30); (iii) even if to the left of *nur/sogar*, the AC must always bear the NA, cf. (28)–(29); (iv) if in post-position, *nur/sogar* may never be stressed (although at least *nur* allows for main stress in principle), cf. (31). Moreover, distant post-position of *nur* and *sogar* as in (29) is quite restricted, and apparently incompatible with non-scalar meaning (see also Altmann 1976:199). Neither is the case for *AUCH* in (32).

Now, given (i)–(ii), the *nur/sogar* cases allow for a straightforward movement explanation: the AC may left-adjoin to the XP it is part of, and from this escape-hatch position it is optionally moved to the preverbal position by the familiar process of topicalization. (That the results are marked is a general phenomenon with extractions from DPs.) If so, the AC must obviously take its main stress along, which may not even optionally be transferred to the particle left behind (iii)–(iv). But then it is also obvious that the NA on 'post-posed' *AUCH* cannot be derived in the same way.

(e)   Problems with extraction and focus theory, showing that a non-*ad hoc* movement account covering all occurrences of *AUCH* simply cannot be given:

First and foremost, how is this movement to be motivated? According to recent theory, movement should have a reason, for example the necessity to get features checked or at least some last resort reason. But what could be the reason for moving the AC out of the c-command domain of *Auch*? The only idea that comes to mind is Kowalski's (1992) 'topic' proposal (see section 2.2.2), but, as we will show, it is empirically untenable.

Second, this movement would have to have properties that are totally without parallel: to begin with, there is no evidence that the AC of *auch* may move to the escape hatch position of the *auch*-XP it is part of, see (28),

which would make extraction possible. Furthermore, extraction from DPs, which is presupposed by the movement analysis wherever the AC of *AUCH* is a DP, is heavily constrained and marked (see Müller 1995; Pafel 1995a), whereas the putative extraction from *auch* phrases would have to be totally unconstrained, producing unmarked results only.

Last but not least, a non-*ad hoc* description covering all the focus data cited in (d) seems impossible.

Note that the most plausible revision of the movement analysis—taking non-adjacent *auch* cases as source sentences, with the putative AC of *AUCH* thus moving out of a VP—will not really help: while the extraction problems could be circumvented this way, the problems cited in (a)–(d) would remain, and the focus problem be aggravated: why should *auch* pick up the focus accent left behind by a non-adjacent phrase at all?

The upshot of this is that a non-*ad hoc* AC movement analysis is not available, let alone a unified one.

2.2.2 Can *AUCH* cases be derived by assuming an AC-bound variable in the scope of *auch*?

Let us now look at a more sophisticated version of this analysis proposed by Kowalski (1992). Her idea is that *AUCH* always 'focuses' a semantic variable (i.e. the variable underlying the AC part) in its scope that may be bound from apparent AC material outside, and she tries to build a case for it in roughly the following way: (i) *AUCH* cases with invisible ACs (imperative and infinitival subjects, for example) are taken to be cases where the AC has no syntactic reflex, hence is just a semantic variable (i.e. the variable in the partition, see section 3 below); (ii) we can assume the variable part to be invisibly in the scope of *Auch*, if the following restrictions obtain: a) if the variable has no syntactic reflex, *AUCH* c-commands the base position of the element the variable in question is an argument of, b) if overt ACs to the left of *AUCH* bind the variable in question, they act as topics, which motivates their appearance to the left; (iii) it is possible to give (iia) and (iib) an interpretation such that the assumption of the variable part being invisibly in the scope of *Auch* is non *ad hoc*.

While her proposal (and our representation of it) is certainly not fully worked out, the outlines are clear enough to argue against it.

First, the basis of the case is not sound: all the invisible elements acting as ACs of *AUCH* can be shown to be syntactically 'real' elements of syntax (PRO for example)—with no evidence against their being to the left of *AUCH*—and those that are undoubtedly not projected into syntax (e.g. 'implicit arguments' like the goal argument in *Er teilt [jemandem] seinen*

Rücktritt mit 'He announces [somebody] his resignation') may not act as ACs of *AUCH*. Hence, *all* occurrences of *AUCH* have real ACs to their left, which makes the claim that in reality *AUCH* always 'focuses' to the right, implausible.

Second, contrary to (iib), the real ACs to the left of *AUCH* are not always topics: invisible ACs (PRO for example) never are topics, and visible ACs may appear beside a full-fledged topic, cf. (33) (where *Peter* is the AC and *a Gauguin* is the topic):

(33) [Mensch, Paul besitzt einen GauGUIN!]—
[*Boy, Paul possesses a Gauguin.*]—
Einen GauGUIN besitzt Peter AUCH [, aber ihm fehlen andere Impressionisten.]
A Gauguin possesses Peter also [. . .]

Peter possesses a Gauguin, too (but he doesn't have other impressionists.)

Furthermore, the purported AC restrictions on referentiality and specificity cited in favour of the topic analysis can be shown to result from straightforward positional restrictions *auch* and *AUCH* have in common (see section 2.3.1).

Third, the role focus plays in relation to stress and syntactic structure becomes totally obscure: what could it mean for a variable without syntactic reflex to be 'focused', and how would we account then for the stress patterns of *AUCH* clauses? In particular, why is *Auch* always stressed, if the AC is to its left? Kowalski seems to assume that its position behind the AC as such is responsible (p. 79), but this means stipulating what should be explained on the basis of general principles of focus and stress assignment.

Note finally that 'weak' pronouns like the accusative *es* and its cliticized form *'s* may act as ACs of *AUCH*:[17]

(34) [Das erste Projekt fördert ihr, hab ich gehört. Und wie habt ihr
The first project support you, have I heard. And how have you
Euch mit dem zweiten Projekt entschieden?]—Na ja, wir
yourselves with the second project decided —Well yes, we
{fördern es/fördern's} halt AUCH.
support it MP too
[*You'll support the first project, I've heard. And what did you decide on the second one?*]—*Well, we'll support it, too.*

Given the fact that these elements may never act as focused constituents, not even in contexts where corresponding nuclear or secondary stress is not assigned (e.g. second instance cases like *PETer hat nur das erste Projekt/*nur es/*

nur's gefördert (see also Hoeksema & Zwarts 1991: 67; Krifka 1995; Geilfuß-Wolfgang 1996: 14f), this is a final touch of evidence that the AC has no intrinsic relation to focus assignment.

In sum, Kowalski's proposal does not work either.

2.2.3 Summary

There is no non-*ad hoc* analysis that allows us to derive the *AUCH* cases from *auch* cases. Hence, the complementary distribution stated in section 2.1 must be accounted for in another way. We will try to show in section 4 that it is an epiphenomenon resulting from the interaction between syntax, semantics, and independent focus principles.

2.3 *The CCs of* Auch

In the beginning of section 2, we already introduced the notion CC, which is of course nothing else but the c-command domain of *Auch*. In this section we want to clarify the exact syntactic nature of this CC, thus preparing the ground for a consistent description not only of the syntax of *Auch* but also of its semantics and its focus behaviour. We shall first argue that *Auch* does not take heads as CCs (section 2.3.1), then determine what kind of XPs it takes as CCs (section 2.3.2).

In the course of the discussion, it will become evident that the regularities formulated in the previous sections (see section 2.1.3) in terms of 'to the right' vs. 'to the left' of *Auch* can all be restated in terms of 'inside the CC' vs. 'outside the CC' of *Auch*.

2.3.1 Can the CC be just a head?

Let us begin with disposing of the idea that *Auch* may take heads as CCs.[18] In this regard, the crucial case is (35), where the CC of *auch/AUCH* seems to be a head constituent, the finite verb:

(35) daß Peter das Referat auch TIPPte/ AUCH tippte
     that Peter the report also typed/ also   typed
     that Peter also typed the report/ that Peter typed the report, too

However, if the finite verb as such were the CC of *auch/AUCH*, the resulting constituent should also be a V° category, and it should be possible, in fact mandatory for *auch/AUCH* to be moved together with the verb. But this is strictly ruled out:

(36) a. *Peter [auch TIPPte]$_i$ das Referat t$_i$.
    b. *Peter [AUCH tippte]$_i$ das Referat t$_i$.
     Peter also   typed the report

Since *Auch* + CC has the same distribution in all other comparable cases as the CC by itself (see section 2.4), the only explanation is that the CC in (35) is not the finite verb as such, but something else. We suggest, in keeping with our views on VP structure (see section 2.4.2), that it is the VP immediately dominating the finite verb plus its closest modifiers (*inter alia* verb particles, directional elements, adjectival parts of resultative constructions, certain types of 'adverbial' particles, among them presumably *nicht* 'not', *noch* 'still', if there are any). There is excellent evidence that this is indeed correct, cf. the positional restrictions of *Auch* (no matter whether stressed or not) with respect to these elements illustrated in (37a–e):[19]

(37) a. daß er den Teller {Auch leer ißt /*leer Auch ißt
     that he the plate {also empty eats /empty also eats
     /*leer   gegessen Auch hat}
     / empty eaten   also has}
     that he also {eats/ate everything} on the plate ·
    b. weil   er {Auch kommen würde/*kommen Auch würde}
     because he {also come   would/ come   also would}
     because he would come, too
    c. weil   sie {Auch klug   ist/fährt // *klug
     because she {also   intelligent is/drives // intelligent
     Auch ist/fährt}
     also is/drives}
     because she {is also intelligent/is also an intelligent driver}
    d. als   er leider   {Auch nicht kam/*nicht Auch kam[20]}
     when he unfortunately {also not came/not also came}
     when, unfortunately, he didn't come either
    e. wenn Peter {Auch noch kommt/*noch Auch kommt}
     when Peter {also still comes / still also comes}
     if Peter will come too

The generalization covering these cases is that *Auch*, no matter in which variant, must be in a position *above* the VP that comprises not only the final verbal complex, but also its modifying elements including certain types of adverbial particles. While this VP can be very complex, see (38), clearly, all its elements except the governing verb are optional.

(38) weil   Peter sich [$_{VP}$ (Auch) noch (*Auch) nicht (*Auch)
     because Peter himself (also) still (also) not   (also)

gut (*Auch) zurecht (*Auch) gefunden (*Auch) zu haben (*Auch)
scheint]
good (also) right   (also) found   (also) to have   (also)
seems
because Peter does not yet seem to have found his way

Hence, the VP in question may just consist of the bare finite verb, which covers cases like (37).

If so, we can conclude that *Auch* does not take heads. Since there is no evidence that *Auch* takes other nonmaximal projections, we arrive at the generalization that *Auch* takes only XPs as CCs.

2.3.2 Can the CC of Auch be any XP?

Although we believe that there is only one *Auch*, which is sometimes unstressed and sometimes carries the NA, it is useful to keep the two variants apart when investigating what kinds of XPs they may take. The prediction is, of course, that as mere variants they take the same ones. In apparent contrast to this prediction, we will observe an asymmetry in the kinds of XPs figuring as the CCs of *auch* vs. *AUCH*, but we will also argue that this asymmetry is the result of interaction with independent regularities (see section 2.5). Thus, the hypothesis that there is just one *Auch* is not affected.

Let us begin with *auch*. One of the strongest descriptive generalizations of German syntax is the V2 constraint: with a few exceptions well under control, the finite verb in so-called V2 clauses may be preceded by one XP constituent only. If used as a test for constituency, it shows that unstressed *auch* takes all kinds of XPs—DP, PP, VP, AP, CP—as CCs:[21]

(38) a. [Auch *PEter*]$_i$ hat t$_i$ einen Aufsatz geschrieben.   DP
     Also   Peter has   an   essay   written
     Peter, too, wrote an essay.

  b. [Auch den *NEUen* Aufsatz]$_i$ finden nur wenige t$_i$ gut.   DP
     Also   the new   essay   find   only few   good
     The new essay too, is liked only by few people.

  c. [Auch an *einem AUFsatz*]$_i$ hat Peter t$_i$ gearbeitet.   PP
     Also   at an   essay   has Peter   worked
     Peter has also been working on an essay.

  d. [Auch *dem Paul ein BUCH gekauft*]$_i$ hat Peter t$_i$.   VP
     Also   the Paul a   book   bought has Peter
     Peter also bought a book for Paul.

  e. [Auch fleißig   *geLEsen*]$_i$ hat Peter t$_i$.   VP
     Also   diligent read   has Peter
     Peter has also read eagerly.

  f. [Auch *sehr LIEB*]$_i$ war er plötzlich t$_i$.   AP
     Also   very sweet   was he suddenly
     All of a sudden he was also very sweet.

  g. [Auch *EHRgeiziger* als   andere]$_i$ ist sie t$_i$.   AP
     Also   ambitious-er than others   is she
     She is also more ambitious than others.

  h. Auch *hat Peter einen AUFsatz geschrieben.*   CP
     Also   has Peter an   essay   written
     Peter wrote an essay too.

  i. [Auch daß *PEter* einen Aufsatz schreibt,]$_i$ wußten alle t$_i$.   CP
     Also   that Peter an   essay   writes   knew all
     That Peter was writing an essay, was also known to everybody.

Since topicalization has applied in all of these cases (except, of course, (38h)), we may assume that *auch* plus the XPs in question also form a constituent in their base position within the VP. This is confirmed by the fact that *auch* + XPs of various kinds may also appear to the left of modal particles (39): since according to standard assumptions modal particles top the highest base-generated VP, the *auch* + XP in question must have been moved out of the VP, and movement applies of course to constituents only.

(39) Dann hat auch {PETra/ IHR} halt einer von uns den Weg gezeigt.
    Then has also {Petra/ her} MP one of us the way showed
    Then one of us showed the way to {Petra/her}, too.

We may conclude then, that *auch* takes all kinds of lexical XPs as CCs, i.e. all kinds of XPs except functional A-projections.[22]

In the cases just cited *auch* invariably takes immediate constituents on the verbal projection line of a full-fledged clause. However, it may also appear within clause-like projections (40)–(41) which are parts of immediate constituents on the verbal projection line:

(40) a. Der [mit sich   auch sehr UNzufriedene] Professor ging weg.
    The with himself also very un-content   professor went away
    The professor who was very displeased with himself, too, went away.

  b. Der [auch [mit SICH] sehr unzufriedene] Professor ging weg.

(41) a. Der Professor, [auch DAmit unzufrieden], ging weg.
    The professor, also that-with un-content, went away
    The professor, displeased with this too, went away.

  b. Der Professor, [nun auch sich SELBST ein Rätsel], ging weg.
    The professor, now also him [dat.] self a   puzzle, went away.
    The professor, now a puzzle also to himself, went away.

c. Peter, nun auch mit PAUL im Clinch, wurde noch
Peter, now also with Paul   in fight,   became even
mißtrauischer.
distrustful-er
Peter, now quarrelling with Paul too, became even more distrustful.

The generalization is, clearly, that *auch* can take XPs in all clause-like projections, i.e. where there is a predicate projection line: in the case of (40a, b) and (41a) the predication is related to a visible head, the adjective, whereas in (41b, c) there is an invisible head only. That there is indeed a predicate projection line comparable to those in full-fledged clauses, is shown by reflexive cases like (40a, b) and (41b) above: since they demand a subject antecedent in the governing category, the respective structures obviously contain a PRO co-indexed with *Professor* (23a, b), which makes these constructions clause-like, in other words, there is an (extended) projection of a predicate head.

(42) a. Der [PRO$_i$ mit sich$_i$ auch sehr UNzufriedene] Professor$_i$ ging weg.
    b. Der Professor$_i$ [PRO$_i$ nun auch sich$_i$ SELBST ein Rätsel] ging weg.

If so, we can view the *auch* occurrences in (40)–(41) in the same way as those in (38)–(39): *auch* takes as its CCs immediate constituents on a predicate projection line in either case.[23]

Let us now turn to *AUCH*. Since we consider *AUCH* to be just the stressed variant of *Auch*, we would expect it to take the same XPs as CCs as the unstressed variant *auch*. But there is an important restriction, as can be seen from (43)–(44):

(43) A. Paul hat der Johanna den Aufsatz gezeigt.
    Paul showed Johanna the essay.
    B. a. Peter hat$_i$ der Johanna [AUCH den Aufsatz gezeigt t$_i$].
       b. [AUCH der Johanna den Aufsatz gezeigt]$_j$ hat$_i$ *PEter* e$_j$ t$_i$
          Peter has the Johanna[dat.] also the essay shown
          Peter showed Johanna the essay too.
       c. Peter hat$_i$ der Johanna den Aufsatz [AUCH gezeigt t$_i$].
       d. [AUCH gezeigt t$_i$]$_j$ hat$_i$ Peter der Johanna den Aufsatz e$_j$.
          Peter showed Johanna the essay too.
       e. Peter zeigte$_i$ der Johanna den Aufsatz [AUCH t$_i$].
          Peter showed Johanna the essay too.

(44) A. Paul hat Johanna auf den Aufsatz gestern   aufmerksam gemacht.
    Paul has Johanna on the essay   yesterday attentive   made
    Paul drew Johanna's attention to the essay yesterday.
    B. a. *[AUCH Johanna]$_i$ hat *Peter* e$_i$ auf den Aufsatz aufmerksam gemacht.

b. *[AUCH auf den Aufsatz]$_i$ hat *Peter* Johanna e$_i$ aufmerksam gemacht.
    c. *[AUCH gestern]$_i$ hat *Peter* Johanna auf den Aufsatz e$_i$ aufmerksam gemacht.

(43) shows that *AUCH* takes VPs of all sizes as its CCs,[24] in accordance with what we observed so far. But as (44) shows, it does not take DPs, PPs, AdvPs, etc. as its CCs. We can make sure that this holds irrespective of whether only the material in the CC or all the material to the right of *AUCH* is ID material by looking at cases like (45):

(45) *Der Johanna   wird [AUCH Peter] ja helfen.
    The Johanna[dat.] will also   Peter MP help

Here the AC is entirely to the left of *AUCH*, and the position before the modal particle allows only the given bracketing (due to the same reasons cited in connection with (39) above). Since constellations like (45) are always out, if *Auch* is stressed, the only possible cause can be that *AUCH* combines with a 'wrong' CC.

Thus, *AUCH* is distributionally far more restricted than *auch*, a reflex of this being that *AUCH* is always an immediate constituent on the predicate projection line. However, this restriction will turn out to be epiphenomenal, as we shall see later (sections 2.5, 4.2).

Since *AUCH* does take VPs, we expect that it also occurs in other clause-like constructions, and it does; cf. (46):

(46) a. Der {damit/DAmit} AUCH sehr unzufriedene Professor
       The that-with   also   very un-content   professor
       ging weg.
       went away
       The professor who was quite displeased with this, too, went away.[25]
    b. Der Professor, [nun sich SELBST AUCH ein Rätsel], ging weg.
       The professor, now him [dat.] self also   a   puzzle, went away.
       The professor, now a puzzle also to himself, went away.
    c. Peter, nun mit Paul AUCH im Clinch, wurde noch
       Peter, now with Paul also   in fight, became even
       mißtrauischer.
       distrustful-er
       Peter, now quarrelling with Paul too, became even more distrustful.

Recall (see above (42)) that these constructions contain a PRO co-indexed with *Professor* in (46a, b) and *Peter* in (46c). Given this, the possible ACs of *AUCH* are all to its left as usual. The possible CCs are again restricted to

projections of the predicate. Hence, *AUCH* behaves in these constructions just as it does in full-fledged clauses.[26]

In sum, *Auch*, unstressed as well as stressed, takes immediate constituents on predicate projection lines as its CCs, with the stressed variant being restricted (by intervening regularities) to the immediate predicate projections on these lines themselves.

Now, the following example (47) shows that *Auch* takes *only* immediate constituents on predicate projection lines. Thus, *inside* DPs, PPs, etc. occurrences of *Auch* like the following are out, no matter whether *Auch* is stressed or not. Note that the other focus particles, plus *nicht*, exhibit more or less parallel behaviour.

(47) Sie vermutete [$_{DP}$den (*Auch) Paß (*Auch) Pauls]$_{DP}$
     She supposed   the (also) passport (also) Paul's
     [$_{PP}$in (*Auch) dem Koffer]$_{PP}$.
        in (also)   the suitcase

These occurrence restrictions have been extensively discussed, ever since Jacobs brought them up (1983: 86ff.).[27] We account for them as the result of a specific syntactic property of *Auch* and focus particles in general, which is to bring about a division of its host clause (corresponding to the proposition it applies to) into the CC and the rest (the part of the clause not c-commanded by *Auch*) with the following properties: just one projection line is split, and the resulting parts are categorially homogeneous in that the *Auch* phrase (i.e. the phrase resulting from adjoining *Auch* to its CC) must be immediately dominated by projections of the same category as the rest of the clause. It is easy to see that (i) and (ii) can only be fulfilled, if the *Auch* phrase is an immediate constituent on a predicate projection line, thus dividing up its host proposition. The relevance of this division will show up later (see sections 2.5 and 3.2). Here it may suffice to just state the empirical generalization as a division rule, by which cases like (47) are out:

(48) *Auch divides its host proposition such that the* Auch *phrase is always an immediate constituent on the projection line of the predicate.*

Note that (48) also pertains to other elements having clausal semantic scope like *Auch* (see section 3.1), e.g. *kaum* 'hardly', *selten* 'rarely', *immer* 'always', in that they do not occur within DPs, PPs, etc. either.[28] Moreover, (48) provides a basis for understanding the apparent exceptions to it, inasmuch as they are systematic: *Auch* within DPs is the more acceptable, the more clause-like the DP is (in particular the more it corresponds to a proposition).[29]

Hence, in the absence of convincing alternatives,[30] there is reason enough to consider our approach to this restriction worth pursuing.

2.3.3 Summary

We have shown the following: (i) the CC of *Auch* is always an XP (never a head); (ii) *Auch* may take all kinds of XPs as its CC; (iii) *Auch* divides the clause or clause-like constructions it appears in into two parts such that the *Auch* phrase ('*Auch* + CC') is always an immediate constituent on the predicate projection line. It was also noted that *Auch* can only be stressed, if its CC is a predicate projection.

2.4 *The syntactic status of* Auch *and its positions in clause structure*

Let us now turn to discussing the syntactic status of *Auch* itself, and then explicate the relation between *Auch* and its CC in GB-oriented terms.

2.4.1 The syntactic status of *Auch*

In section 2.3 we determined the possible CCs of *Auch*, thereby confirming that there is only one *Auch*. We will now have to determine the status of *Auch* itself. There are two possibilities: it may be a head or an XP. We will begin with the first alternative.

Given the fact that *Auch* always takes XPs as CCs, there are two options: *Auch* may be a minor functional head in the sense of Rothstein (1991: 7) or it may be the head of a functional projection. The former position has been adopted by Bayer (1996), who assumes that *Auch* is a small functional head, which is subcategorized for XPs and projects only semantic head features, but not the syntactic ones:

(49)

        XP
       / \
      Y   XP

It is evident that categorial transparency is needed in the case of the particles in question. In (49) this is achieved by stipulating that minor functional heads do not project category features. But we could get the same result without stipulation, if *Auch* were just a maximal (non-expanding) projection adjoining to XPs. So there should be more to the minor functional head analysis than just that. All we can see, however, are further disadvantages: if *Auch* were a functional head:

(a) it should take just one type of XP-complement (see Abney 1987; Rothstein 1991). But as we have seen above, it obviously takes all sorts of them;

(b) it would block the possibility of the verb to move to functional projections above *Auch* (cf. the NegP in French, see *inter alia* Pollock 1989). There is no evidence for any blocking of this type;

(c) the *Auch* occupying the initial field could not be accounted for. Instead, we would have to assume that this is a separate *Auch*, an assumption that is not supported by the evidence (see note 12).

All this taken together rules out this version of the head hypothesis.

Let us now look at the other version, where *Auch* is a functional head, also projecting its category features, and takes an XP as its complement:

(50)

```
        YP
       /  \
      Y    XP
            |
          Auch
```
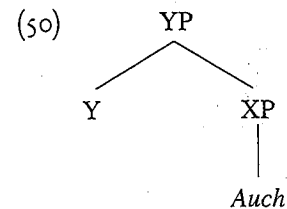
In this case, we would have to assume that the YP allows the verbal features to extend through it (the extended projection idea proposed by Grimshaw 1991). This, however, would be no real problem, since we have to assume this for other functional projections, e.g. the NegP in English, too. But the problems (a)/(c) would still remain.

Since the various head analyses fail, let us adopt the simple analysis already alluded to above: *Auch* is a *maximal* (non-expanding) phrase (51a) *adjoining* to XPs of all kinds (51b). By a non-expanding maximal projection we mean a head that projects to a maximal phrase in much the same way as sentential adverbs like *leider* 'unfortunately', *doch* 'however', etc.
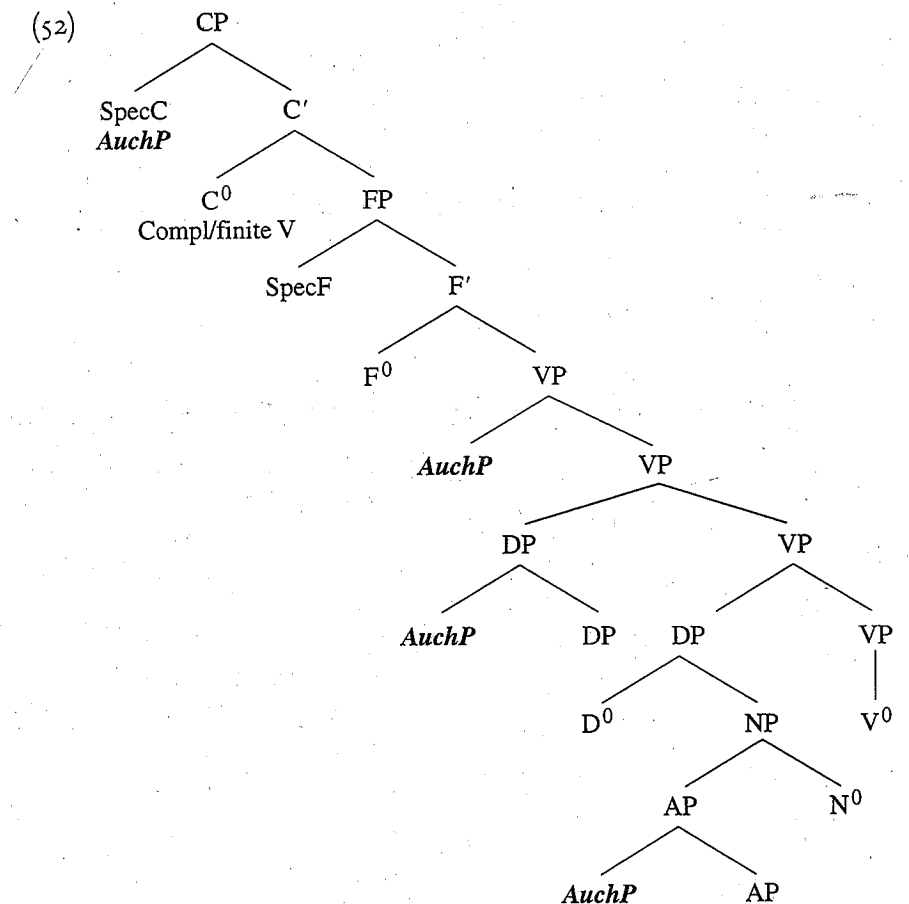
(51) a. *Auch*P   b.   XP
            | / \
          *Auch*⁰   *Auch*P   XP
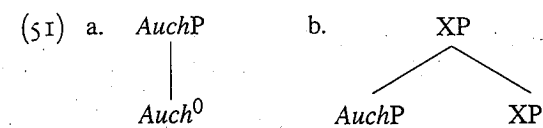
2.4.2 The positions of *Auch* in clause structure

The empirical generalization stated in section 2.3.2 as a division rule (48) was that *Auch* occurs with all lexical XPs as its CCs, i.e. all XPs lexical items can take as long as the (resulting) *Auch* phrases are immediate constituents on the projection line of a predicate. This rules out at least all functional A-projections on the extended projection line, but, as we have already seen, it does include A-bar projections like CPs.

We also tacitly assumed that *Auch* does not move itself. We do not know of any evidence contradicting this assumption. (On the contrary, the modal

particles with which particles like *Auch* may be compared, do not move either, see Ormelius-Sandblom 1997: 43f). The fact that *Auch* never moves itself, does, of course, not preclude that other constituents to the right of *Auch* may move to its left, be it by scrambling, topicalization or some other type of wh-movement, whenever such a movement is licit (which, as a rule, it is for constituents within VP, but not within DP/PP). The same movements are possible for *Auch* phrases. This amounts to the generalization that in every position in which a lexical phrase XP_i is licit (by movement or base generation), the phrase $[Auch [XP_i]]$ is also licit, subject to the division rule (48). This has been confirmed over and over again in the previous pages. We shall return to one apparent exception to this generalization below.

The following tree (which partially conforms to the clause structure proposed by Haider 1993 for SOV-languages) illustrates four theoretically possible positions of *Auch*. There are, of course, many more.

(52)

```
                  CP
                /    \
            SpecC     C'
            AuchP    /  \
                   C⁰    FP
              Compl/finite V  / \
                          SpecF   F'
                                 /  \
                               F⁰    VP
                                    /  \
                                AuchP   VP
                                       /  \
                                      DP   VP
                                     /  \    \
                                 AuchP  DP  DP  VP
                                           /  \   |
                                         D⁰   NP  V⁰
                                             /  \
                                            AP   N⁰
                                           /  \
                                       AuchP  AP
```

The account we have given so far covers all the well-known occurrence restrictions for *Auch* but one, the positional asymmetry of *Auch* CPs as exemplified in (53): a complement clause with an adjoined *Auch* cannot be extraposed, but it may well occur in the initial field of the matrix clause.

(53) a. Auch [daß der Kanzler zu DICK sei], hat Peter behauptet.
     Also that the chancellor too fat be[subj.] has Peter claimed
     Peter also claimed that the chancellor is too fat.
   b. *Peter hat behauptet, auch daß der Kanzler zu DICK sei.

This asymmetry, first observed by Altmann (1978: 22ff), has usually been treated on a par with the occurrence restrictions covered by our division rule (48). Accordingly, Jacobs (1983: 46ff) tried to relate the difference to his claim that *Auch* takes only V projections (bound up with the claim that there is no V2 constraint in German), with *Auch* taking a V projection in (53a) but not in (53b), and Bayer (1996) tried to relate it to ±canonical direction of government: in (53a) the verb governs the *auch* phrases to the left, which is the canonical direction, whereas in (53b) it does so to the right.

Both accounts have met with strong criticism (see note 30), which we will not repeat here. Rather, what we should like to point out is that this restriction is different from the others and thus should have no impact on the general analysis by which the others are covered.[31]

First, the following clause shows that a comparable positional restriction also holds for V2 clauses. The clause-initial construction (54a) is good, the extraposed construction (54b) is out:

(54) a. Auch hat ein Student dein AUto angefahren, glaube ich.
     Also has a student your car on-driven believe I
     A student also hit your car, I think.
   b. *Ich glaube, auch hat ein Student dein AUto angefahren.
     I think also has a student your car hit

This shows that *Auch* may not take V2-CPs either, but this is what we would expect, so far.

Second, and more importantly, a subclass of adverbial clauses occurs in extraposed position without problems (see also Altmann 1976: 160ff):

(55) a. Ich habe darauf verzichtet, auch weil ich MÜDE war.
     I have that-on refrained, also because I tired was
     I refrained from doing it, also because I was tired.
   b. Ich habe mich gut unterhalten, auch während Peter WEG war.
     I have me well entertained also during Peter away was
     I had a good time also while Peter was away.

This, we would not expect. These data show that *Auch* cannot be primarily responsible for the distributional difference in (53).

Third, elements like *doch* 'however', *übrigens* 'by the way' exhibit parallel behaviour to *Auch*:

(56) *Ich glaube, doch hat Peter seinem Freund das Referat
     I think however has Peter his friend [dat.] the report
   getippt.
   typed
(57) Doch hat Peter seinem Freund das Referat getippt,
     However has Peter his friend [dat.] the report typed
   glaube ich.
   think I
   Peter typed the report for his friend, I think.

The *doch* in the initial position has about the same meaning as *aber* 'but', but cannot appear in the middle field. Its function is to contrast the meaning of the proposition against another proposition in its co-text. Thus, the *doch* clause always has to be in a position such that it may be linked directly to the preceding clause. This seems to be the relevant parallel to the *Auch* clause. Thus, the ungrammaticality of (53b) may be based on a more general restriction including other particles with similar functions as well.

What (55) tells us is at least that the sharp ungrammaticality of (53b) cannot be due to *Auch* alone: there must be some additional factor ruling out extraposed *Auch* + *daß*/V2 clauses but leaving *Auch* + *weil/während* clauses unaffected. On the other hand, the comparison with *doch* may give rise to the idea that the acceptability of *Auch* + CPs in the initial field is due to the fact that in this position *Auch* directly links its clause to the matrix clause (note that extraposition makes subordinating constructions more like paratactic constructions), very much functioning as a conjunction like *und*. If this is the primary function *Auch* has when taking CPs as its CCs, then it cannot occur after the matrix clause, in which position the linking could not take place. In any case, the restriction in question seems peculiar enough to set it apart and give it a separate analysis.

2.4.3 Summary

In this section, we have argued that *Auch* itself is not a head, but an XP adjoining to XPs of all kinds, except functional A projections. We also assumed that *Auch* does not move itself. We then described the behaviour of *Auch* in terms of the clause structure proposed for German in Haider

(1993). Finally, we commented on the absence of extraposed *Auch* + *daß* clauses suggesting that this restriction has no impact on our analysis.

2.5 *The CC and the AC/ID division*

Let us now turn to the relation between the syntactic division of the *Auch* clause into CC and the rest and its division into AC and ID. In previous accounts this question was reduced to the relation between CC and AC, the communis opinio being that the AC is always included in the CC, i.e. c-commanded by *Auch* (a constraint posited for focus particles in general already by Jackendoff 1972: 25). Given the evidence accumulated in the previous sections, this is clearly untenable. The main evidence are, of course, *AUCH* cases, where the AC is always necessarily outside the CC (an AC movement analysis or the like, saving the c-command constraint on the *Auch*-AC relation, being out of the question (see section 2.2)). But as has been shown by the split cases discussed in section 2.1, unstressed *auch* does not fully conform to this constraint either, for part of the AC material can be outside the CC. All that holds is that the CC of unstressed *auch* must include the constituent carrying the NA rather than the AC.[32]

Does the failure of the traditional view mean that there is no interesting relation between the CC of *Auch* and the AC/ID division at all? By no means. Looking at the regularities worked out in the previous sections from a different angle, we can formulate the following generalization:

(58) *If the CC of Auch is a nonpredicative projection (DP, PP, AdvP, etc), then it always includes all*[33] *AC material.*
If the CC of Auch is a predicative projection, then it may (a) include overt AC material, or (b) it may not; in the latter case it contains only overt ID material or is empty.

Obviously, then, the regularity we observed in section 2.1.1.1—the last element in the *Auch*/AC pair has to carry the NA—reflects a regularity about AC/ID distribution with respect to the CC of *Auch*, yielding a further generalization concerning NA placement:

(59) *If the CC of Auch includes (overt) AC material, it gets the NA, if it does not, Auch gets it.*

Note that the restriction observed in section 2.3.2 that *AUCH* only occurs with predicate projections as CCs, which also means that the *Auch* in question is always an immediate constituent of the predicate projection line, follows immediately from (58)–(59), for CCs not containing overt AC

material thus licensing stressed *Auch* are limited to predicative constituents. Thus no independent explanation is necessary.

Note, too, that by (58) split AC cases can only occur when *Auch* takes a predicate projection. This is in keeping with what we observed in section 2.1.1.2.[34]

Thus, the syntax of *Auch*, in particular the division into CC and the rest of the clause is obviously significant for the possible AC/ID divisions of the proposition, which in turn, together with the syntactic position of *Auch* (± immediate constituent of the predicate projection line and position relative to the AC) is significant for the focus structures *Auch* clauses may have. We have summarized this in the two generalizations just stated, thus also indicating the essential topics that have still to be dealt with. We will return to generalization (58) in section 3, where we will also try to show why the ± predicative nature of the CC plays the important role it does for the AC/ID division, and to generalization (59) in section 4, showing that it can be derived from independent focus principles.

2.6 *Summary*

In section 2.1 we showed that *auch/AUCH* are in complementary distribution at surface structure—*auch* requires that the AC is (entirely or partly) to its right and that it (its rightward part respectively) carries the NA; *AUCH* requires that the AC is (totally) to its left, ruling out a further accent to its right—, from which we inferred that *auch/AUCH* are variants of the same *Auch*. We also noted a remarkable asymmetry in the complementary distribution in that only *auch*, but not *AUCH*, allows split ACs, which reflects two systematic regularities: (i) *auch* requires to its right the AC constituent potentially bearing the NA, not the whole AC; (ii) *AUCH* disallows overt AC material to its right.

In section 2.2 we argued that there is no non-*ad hoc* analysis allowing us to derive the *AUCH* cases from *auch* cases, which suggests that the complementary distribution stated in section 2.1 is an epiphenomenon to be derived from independent regularities.

In section 2.3 we discussed the CCs that *Auch* takes showing that (i) the CC of *Auch* is always an XP (never a head); (ii) *Auch* takes XPs of all kinds; (iii) *Auch* divides the clause or clause-like construction it appears in into two parts such that the *Auch* phrase is always an immediate constituent on the predicate projection line. By this division rule (48), the well-known restrictions concerning the absence of *Auch* from inside DPs, PPs, etc. were accounted for. It was also noted that *Auch* can only be stressed, if its CC is a predicate projection.

In section 2.4 we argued that *Auch* itself is an XP adjoining to other XPs. We also assumed that *Auch* does not move itself. We then described the behaviour of *Auch* in terms of the clause structure proposed for German by Haider (1993).

In section 2.5, finally, we summarized the evidence showing that the c-command condition on the relation between *Auch* and the AC is untenable, but that there are nonetheless important correlations between the syntactic division into CC and the rest of the clause and the AC/ID division. These correlations were captured in generalization (58), which brings out the importance of the ± predicative nature of the CC for the AC/ID division of *Auch* propositions. On the basis of (58) we derived a further generalization (59), which brings out the relation between the nature of the material in the CC and NA assignment in *Auch* clauses, and we showed that the restriction of stressed *AUCH* to predicative CCs follows from this generalization.

3 SEMANTICS OF *AUCH*

In the foregoing sections we argued that despite conspicuous variation in position and stress, there is just one lexical item *Auch*, which takes all kinds of lexical XPs on predicate projection lines as its CCs. We also argued that the syntactic division of the *Auch* clause into CC and the rest of the clause plays an important role for the AC/ID division of the corresponding proposition.

In this section, we will try to factor out the semantic properties of *Auch* in relation to the AC/ID division on the one hand and to the syntactic division into CC and the rest of the clause on the other, and then try to understand why the CC can interact with the AC/ID division in the way it does. We shall first sketch the central features of previous descriptions and point out where in our opinion they go wrong (section 3.1). This motivates our own proposal, which we present in section 3.2 and to which the CC is of central importance. In this connection we will also try to derive the generalization (58).

3.1 *Previous descriptions*

Let us first summarize the aspects of previous descriptions of the semantics of *Auch* that we find uncontroversial:

First, *Auch* does not affect the status of its host proposition p. This is illustrated by declaratives in (60a, b) and questions in (60c, d): whoever

asserts (60a) also asserts (60b), and whoever asks (60c) also asks (60d). In other words, *Auch*(p) entails p, preserving the truth value of p, if it has one.

(60)   a.   Peter hat Auch den Roman gelesen.
     b.   Peter hat   den Roman gelesen.
        Peter has (also) the novel read
        Peter read the novel (too).
     c.   Hat Peter Auch den Roman gelesen?
     d.   Hat Peter   den Roman gelesen?
        Has Peter (also) the novel read
        Did Peter read the novel (too)?

Second, *Auch* gives rise to the implicature that there is a true proposition q in context to which p (or parts of it) is added such that q, p are partially alike and partially different, i.e. have the same AC/ID division. In the case of (60a), q could be, for example, any of the following propositions in context (the AC part in which q differs from p being italicized):

(61)   a.   *Johannes* hat den Roman gelesen.
        Johannes read the novel.
     b.   Peter hat *die Tagebücher* gelesen.
        Peter read the diaries.
     c.   Peter hat den Roman *gekauft*.
        Peter bought the novel.
     d.   Peter hat *die Küche geputzt*.
        Peter cleaned the kitchen.

Depending on which of these qs figures in the context of the actual utterance of (60a), the AC/ID division of p is different, or, to put it into the by now familiar terms, p and q belong to different sets of alternatives defined by this division.

Naturally, the make-up of the clause denoting p—including stress from which we have abstracted here—may place additional restrictions on what kind of proposition in context could act as q to which p is added. Since this is one, perhaps *the* major point where we take issue with previous descriptions, we will postpone its discussion to section 3.1.3.

Third, the propositional domain over which the alternative set induced by *Auch* is defined, its so-called 'semantic scope', is subject to the normal restrictions we observe with all focus particles (see König 1991a: 46ff): it is syntactically restricted to the minimal clause (or, to be exact, the minimal clause-like projection) it appears in, and semantically restricted by other scope-taking elements, if *Auch* is in their syntactic scope within the same minimal clause.

The syntactic restriction is illustrated by (62)–(63), where the AC/ID division pertains to the proposition of the entire clause in (62a), but just to the proposition of the embedded clause in (62b), which results in a clear meaning difference: in (62), the ID part is *Hans wollte, daß Peter x betrachtete* in (62a), but just *Peter betrachtete x* in (62b); in (63) the ID part is *x wollte, daß Peter den Gauguin betrachtete* in (63a), but again just *Peter betrachtete x* in (63b).

(62) a. Hans wollte auch, daß Peter den GauGUIN betrachtete.
      Hans wanted also   that Peter the Gauguin   looked at
      Hans also wanted Peter to look at the Gauguin.

   b. Hans wollte, daß Peter auch den GauGUIN betrachtete.
      Hans wanted that Peter also the Gauguin   looked at
      Hans wanted Peter to look also at the Gauguin.

(63) a. Hans wollte AUCH, daß Peter den Gauguin betrachtete.
      Hans wanted also   that Peter the Gauguin looked at
      Hans, too, wanted Peter to look at the Gauguin.

   b. Hans wollte, daß Peter den Gauguin AUCH betrachtete.
      Hans wanted that Peter the Gauguin also   looked at
      Hans wanted Peter to also look at the Gauguin.

The semantic scope restriction induced by other scope-taking items like *selten* 'rarely', *oft* 'often', *alle* 'all', *nicht* 'not', etc. is illustrated in (64)–(65):

(64) a. Karl hat sonntags selten auch seine MUTTer   besucht.
   b. Karl hat sonntags selten   seine Mutter AUCH besucht.
      Karl has sunday-s seldom (also) his mother (also)   visited
      On Sundays, Karl very rarely also visited his mother.

(65) a. Karl hat sonntags auch seine MUTTer   selten besucht.
   b. Karl hat sonntags   seine Mutter AUCH selten besucht.
      Karl has sunday-s also his   mother also   rarely visited
      On Sundays, Karl visited also his mother very rarely.

(64a, b), where *Auch* is in the syntactic scope of *selten,* says that it was rarely the case on the (possibly many) Sundays that Karl visited e.g. his friends, that he also visited his mother—in other words, *selten* is outside *p, q*—, whereas (65a, b), where *Auch* has scope over *selten,* says that on Sundays Karl rarely visited his friends and also rarely visited his mother—in other words, *selten* belongs to the semantic scope domain of *Auch.* Clearly, what is relevant here is the syntactic scope of *Auch*: only if the other scope-taking item belongs to its CC, is it part of the domain over which the alternative set is defined.

This much in the meaning description is common ground. What then is controversial? To see this, let us look at how the meaning of *Auch* is usually

described, see for example (66) (a simplified version of the analysis by Krifka 1992: 19, see Kowalski 1992: 89):

(66) $\text{AUCH}\,(\langle\alpha,\beta\rangle) \leftrightarrow \alpha(\beta)\ \&\ \exists X[X \approx \beta\ \&\ X \neq \beta\ \&\ \alpha(X)]$
     1.   2.   3. β, X of the same type

What (66) says is this:

Part 1 says that *Auch* applies to a structured proposition, which means the division of *p* into an identical (ID) and a variable part (AC) is given from the start: β corresponds to the AC, α to the ID. The formula does not specify the source of this partition, but the standard assumption is that it is focus-background structure, with β corresponding to the focus, and α to the background (see *inter alia* Jacobs 1983, 1986; Rooth 1985; von Stechow 1991; König 1991a, 1991b, 1993; Krifka 1992; Bayer 1996). In other words, *Auch* is taken to operate on the set of alternatives supplied by the focus structure of the *Auch* clause, whence the name 'focus particles', 'focus adverbs' for *Auch* and its kin.

Part 2 says that the *Auch* clause denoting *p* entails *p*.

Part 3 specifies the existence of *q* in that it says (= second and third conjunct) that there is some X, which is different from β and also fulfils α. The first conjunct is supposed to express (via $\approx$) that this X must belong to the set of alternative focus values that are contextually salient. The status of the conveyed proposition *q* is that of a conventional implicature. Note that besides contributing this implicature, *Auch* has no grammatically determined meaning of its own.

We have, of course, no objections to part 2 of (66), or to part 3 inasmuch as it specifies the existence of *q* such that *p, q* belong to the same set of alternatives. But we do have problems with part 1 and certain aspects of 3: clearly, an adequate description of the meaning of one *Auch* should be able to account for both its variants, the unstressed as well as the stressed one. We contend—primarily but not exclusively on the basis of *AUCH* cases—that the standard description is unable to do the job: with respect to part 3, it is too weak in that the proper meaning contribution of *Auch* is just an implicature. With respect to part 1, it is too strong in that the exact partitioning of *p* into an identical (α) and a variable part (β) is already given from the start, supplied by the focus structure of the *Auch* clause. Let us now give substance to this contention.

3.1.2 Where former analyses are too weak

What is wrong with *Auch* contributing no more than a conventional implicature to the meaning proper of *Auch* clauses? Looking only at

unstressed *Auch*, it is difficult to see any problem, for both characteristic properties of conventional implicatures are fulfilled:

(i) Unlike p, q is unaffected by negation and illocutionary variation of the respective *auch* clause. Take, for example, (67) with p being (67a) and q (67b). The negated and question variants of this clause (68) no longer entail that p [=(67a)], whereas they still convey that q [= (67b)].

(67)   Auch PETer will kommen.
        Also Peter   will come
        Peter wants to come, too.
    a. Peter will kommen   (= p)
    b. Johannes will kommen.   (=q)
(68) a. Es ist nicht wahr, daß auch PEter kommen will.
        It is   not   true that also Peter come   will
        It's not true that Peter wants to come too.
    b. Will auch PEter kommen?
        Does Peter want to come too?

(ii) Negation of q does not affect the truth-value of p. Cf. (69): although B's answer entails the denial of q, the truth of p remains unaffected; only the use of *auch* in A's statement is made out to have been inappropriate.

(69) A: Auch PEter will kommen (= 67)
     B: Interessant, aber bisher will offenbar   niemand sonst kommen.
        Interesting, but   so far will apparently nobody else come
        Interesting, but so far apparently nobody else wants to come.

But as soon as we turn to stressed *Auch*, there are problems with this analysis. Obviously, *Auch* can be focused (70), and as such the meaning contribution spelled out in (66)/part 3 may even be sensitive to negation: whereas (71) is always interpreted as the denial of p, with q remaining intact, (72) (also, perhaps even preferably) allows for an interpretation as a denial of the existence of q rather than of p.[35]

(70) Hans will AUCH kommen.
     Hans will also   come
     Hans wants to come too.
(71) Es ist nicht {wahr/WAHR}, daß auch HANS kommen will.
                                        (reading: denial of p)
     It is not   true   that also Hans come   will
     It isn't true that Hans wants to come too.

(72) ?Es ist nicht {wahr/WAHR}, daß Hans AUCH kommen will.
                              (preferred reading: denial of q)
     It isn't true that Hans also wants to come.

In other words, the paraphrase of (72) is (73).

(73) Es ist nicht wahr, daß jemand außer Hans kommen will.
     It is not true that anybody else except Hans wants to come.

The standard analysis cannot come to grips with these facts, for the meaning element to which focusing in (71) and denial in (72) pertains, would be the conventional implicature as such. But this is quite *ad hoc*: elements that contribute solely or primarily a conventional implicature usually cannot be focused;[36] cf. *aber* 'but', and *sogar* 'even', which primarily contribute an adversative and a scalar implicature respectively (74)–(75), or *übrigens* 'by the way' (76), which contributes an implicature of 'disconnectedness' of its host proposition.[37]

(74) a. *Peter ist intelligent, ABER faul.
        Peter is intelligent but   lazy
    b. [Das hier ist NEU UND brauchbar,] *das hier ist ALT,
        [*This here is new and useful*]   this here is old
        ABER brauchbar.
        but useful
(75) *SoGAR Peter ist gekommen./*Peter ist soGAR gekommen.
      Even Peter is come   Peter is even   come
(76) *Peter ist ÜBrigens   gekommen.
      Peter is by the way come

Since conventional implicatures are, by definition (see Grice 1975), disjoint from the truth-conditional meaning of their host proposition, they should not be sensitive to negation either. Hence, we have to assume that the meaning contribution of *Auch* must be more than a conventional implicature; it must have a reflex in the propositional representation of the *Auch* clause that can be focused and negated.

All this suggests that *Auch*, stressed or not, contributes a non-implicated, truth-relevant meaning element, which we shall call ADD (for 'in addition'). Thus, an *Auch* clause corresponds to ADD (p), meaning roughly, 'in addition' p. Like all other meaning elements, ADD may be focused, and since negation affects focused rather than backgrounded meaning (see Moser 1992), ADD may then also be affected by negation. Note that negating ADD (p) means denying that an adding operation took place, which amounts to denying that there is a q to which p is added. This

suggests, of course, that the implicature concerning the existence of q and the entailment of p be made dependent on ADD.[38]

Indirect support for describing the meaning of *Auch* like this comes from related lexical items. Apparently, the properties we ascribe to ADD co-occur whenever the meaning of a lexical item involves the notion of co-occur whenever the meaning of a lexical item involves the notion of addition. Cf. for example adverbs like *zusätzlich* 'in addition', *überdies* 'moreover', *außerdem* 'besides', *plus, extra* and verbs like *hinzufügen, addieren* 'add': they always involve two elements, the added element A, and the element B to which A is added, whereby the status of A does not depend on its being added ($\Rightarrow$ the 'entailment' property of ADD), but being added would be unthinkable without the existence of some B ($\Rightarrow$ the 'implicature' property of ADD). Clearly, one would not hesitate postulating a meaning element like ADD defined *inter alia* by these properties for these items, thus also bringing out the meaning component they have in common. If so, one should do likewise in the case of *Auch*, for *Auch* overlaps with these items in meaning.

Moreover, additive particles have a clear etymological affinity to words denoting 'increase' or 'addition' and to coordinating elements in all languages (König 1991a: 164f). Thus, our paradigm case *Auch* is etymologically related to the stem of Gothic *aukan* 'increase' (cf. Latin *augere* 'increase') and the coordinating particle in Swedish (*och*) or Danish (*og*). It is hard to see how these relationships could be captured without appealing to something like ADD as meaning component of (at least some of) these items, including *Auch*, for ADD by its very meaning combines aspects of addition, increase and connectivity at the same time.

In sum, we believe that positing an element ADD as part of the meaning of *Auch* is necessary, the most salient justification for this being its ability to be focused.

3.1.3 Where former analyses are too strong

What is wrong with assuming that the AC/ID division of p is fixed from the start by focus structure (an assumption most clearly expressed by assuming *Auch* to operate on structured propositions)? Two things: (i) in determining the set of alternatives p, q belong to, the role of the focus-background division of p is misrepresented, and, correspondingly, the role of q (and context in general) is totally underrated, (ii) the role of the syntactic division of the clause denoting p into CC and the rest of the clause is misrepresented and its true significance unrecognized. In both regards we think that former analyses have been led astray by their almost exclusive reliance on cases with unstressed *Auch*.

Turning first to (i), there can be no doubt that in cases with unstressed *Auch* there is systematic covariation between the focus/background and the AC/ID division. Thus, the narrow foci in (77a, b) correspond unambiguously to the AC, which restricts possible qs to those which differ from p just in the focus value, see the examples right below (77a, b):

(77) a. Auch PETer hat den Roman gelesen.
   possible q for (a): *Johannes* hat den Roman gelesen.
   b. Peter hat den Roman auch geLESen.
   possible q for (b): Peter hat den Roman *gekauft*.

In these cases, the AC/ID division shared by p, q is identical with the focus-background division of p, 'given' by it so to speak. In other cases, the focus structure of p may be ambiguous; cf. (78a), where the focus structure is such that we cannot know which of the two possible qs is the 'right' one (78b) or (78c). Only looking into the co-text or context, i.e. comparing with q, allows us to choose between them.

(78) a. Peter hat auch den RoMAN gelesen. $=p$
   Peter also read the novel.
   b. Peter hat etwas getan $\neq$ Roman lesen. $=q$
   Peter did something $\neq$ reading a novel
   c. Peter hat etwas $\neq$ Roman gelesen. $=q$
   Peter read something $\neq$ a novel

Still, the correlation between focus ambiguities of p and possible qs, hence possible alternative sets, is also systematic. Thus it is quite understandable how the unstressed *Auch* cases could lead to the standard assumption that the AC/ID division is given by the focus structure of p, in other words that *Auch* operates on the set of alternatives supplied by the focus structure of p.

But cases with stressed *AUCH* do not fit the picture at all, for if the NA is on *AUCH*, indicating a narrow focus, the focus structure cannot possibly tell us anything about the AC/ID division. How then is this division determined in *AUCH* clauses? In many cases, just looking at p leaves it indeterminate; cf. (79) (the possible ACs being indicated by brackets):

(79) daß [*Paul*] [[*seiner*] *Mutter*] [[*diesen*] *Roman*] AUCH schenkte
   that Paul   his   mother   this   novel   also   gave
   that Paul gave this novel to his mother for a present, too

In this case the AC (and hence the AC/ID division) can only be determined in co-text or context, i.e. by comparing the AUCH clause with the proposition q it is added to. Trying to resolve the indeterminacy by positing structural ambiguity would be completely *ad hoc*. Neither can AC movement (cf. section 2.2) account for the indeterminacy.

On the other hand, even if we can determine the partitioning from just looking at p, as in (80)–(83), focus structure does not play the role stipulated for it:

(80) *Peter* las · AUCH den Roman.
Peter read also the novel
Peter read the novel too.

(81) Alle wollten *Peter* AUCH einladen.
All wanted Peter also invite
Everyone wanted to invite Peter too.

(82) Und *seiner MUTter /Mutter* schenkte er den Roman AUCH.
And his mother[dat.] gave he the novel also
And he also gave the novel to his mother.

(83) Peter hat *diesen Kuchen* AUCH gebacken.
Peter has this cake also baked
Peter baked this cake too.

Rather, the determining factors, all cooperating with the basic regularity that the AC is to the left of *AUCH*, come from quite different sources: syntax as in (80), excluding *las*, which is reconstructed, thus leaving only *Peter* as possible AC; semantics as in (81), excluding *alle*, which as AC would lead to a contradiction; secondary accent as in (82): those accents must have a reason, which, in the absence of other interpretive options, could be highlighting rhematic material and thus identifying the AC. But it may be a topic, too, and—in the right context—the direct object would then be interpreted as the AC, although it is not accented (see section 4.2). Of course, extra-linguistic knowledge may also play a role, as in (83): the same cake cannot be produced twice, by different people, which excludes *Peter* as AC, etc.

The conclusion is obvious: the division of *p* into AC/ID is not fixed in advance.

This much one might say is not really new, rather just additional strong evidence for the approach advocated by Rooth (1992) (see especially Rooth 1992: 107ff and 1996: 279f): there, no lexical focus selection is stipulated, which allows the AC/ID division triggered by *Auch*, first, to differ from the focus-background division of *p*, second, to be pragmatically fixed by whatever factors come into play, even without the helping hand of focus.

But Rooth and the others following him (see especially von Fintel 1995) go only half-way towards the correct solution, still misrepresenting the role of the CC. This is where our objection (ii) gets in. What persists even in these approaches is the traditional doctrine about the role the CC plays with respect to the operation particles like *Auch* perform on the set of alternatives: it is still taken as a matter of course that the operation, in the

case of *Auch* the adding operation, crucially affects only the variable part (AC), this being the 'domain of quantification', and that all there is to the CC is that it happens to house the AC. What this amounts to is claiming, in effect, that the specific syntax of *Auch* does not play a role for its specific meaning contribution at all.

Now, we have not only seen that the c-command condition, i.e. that the AC is always in the CC of *Auch*, is untenable (see section 2.5), but also that there are significant correlations between the CC and *both* parts of the AC/ID division, which is totally mysterious under the traditional view. The conclusion we draw from this is that the traditional view should be given up: it is not the case that the operation a particle performs is defined over the AC which happens to be housed by the CC, but the other way around: the operation is defined over the objects represented in the CC, which in the case of *Auch* may house AC or ID material. This way, the specific syntax of *Auch* comes into play for its specific semantics, as should have been expected all along.

3.2 *Our proposal*

Let us now try to understand why the syntactic division into CC and the rest of the clause can affect the AC/ID division, and how. In doing this, we should be able to account for the generalization (58), here repeated for convenience, which shows that the ± predicative nature of the CC plays an important role for the overt distribution of AC and ID material.

(84) *If the CC of* Auch *is a nonpredicative projection (DP, PP, AdvP, etc), then it always includes all AC material.*
If the CC of Auch *is a predicative projection, then it may (a) include overt AC material, or (b) it may not; in the latter case it contains only overt ID material or is empty.*

The cornerstones of our explanation are the following:

(i) the meaning operation ADD, which is characteristic for *Auch*, does not apply to the AC-elements in its CCs: rather what *Auch* does by virtue of its meaning contribution to the clause, is adding[39] the contents of its CC in its host proposition *p* to the corresponding part of some contextually given proposition *q*, both propositions belonging to the same set of alternatives (AS);

(ii) the AC/ID division defining the AS results in principle from the comparison between *p* and *q* (i.e. from context). Syntax and focus structure of *p* may place additional restrictions on possible *q*s;

(iii) the added CC may contain either the (relevant part of the) AC or (part of) the ID including the predicate. Adding AC material means that

entities are added to one another that have nothing in common, whereas adding predicative ID material means that events are added to one another that are tokens of the same event type.

The fact that addition, the meaning operation characteristic for *Auch*, results in adding of both AC and ID material is what distinguishes additive particles from restrictive particles like *nur* 'only', where the excluding operation necessarily pertains only to the variable part (which corresponding to (i) is always in the CC of *nur*), the ID being no more than the defining property of the alternatives. We suggest that *all* differences between these two classes of particles can be related to this difference, although here we shall exclusively concentrate on what this distinctive property of *Auch* implies for *Auch* itself.

(i)–(iii) provide the basis for deriving the AC/ID distribution with respect to the CC as described in (84). All we need in addition is the rather natural assumption (85), which will allow us to understand why the distinction between ± predicative CCs is relevant.

(85) *Predicative XPs represent event types; nonpredicative XPs (DPs,PPs, etc) represent objects which by themselves cannot define an event type.*

Now let us turn to the various constellations mentioned in (84):

(a) The CC of *Auch* is a nonpredicative projection, say a DP (as in (4a)). It follows from (85) that it does not represent an event type; it represents a term. Now by (iii) the CC must be added to some suitable part in q, from which it differs, another term. Differing terms, however, must always be ACs. This accounts for the first part of generalization (84).

(b) The CC of *Auch* is a predicative projection, say a VP. If so, it always contains an element giving rise to the predication of the clause in its scope, by which the events are defined that p and q represent. This element occurs either in overt form or reconstructed, represented by a trace. Since the predications pertain to different events, no matter whether they belong to the same or different types, see (iii) and (85), the precondition for the adding operation that there be different entities is always fulfilled. Naturally, there is no way in this case to predict what the CC contains in the way of AC/ID except comparing p with q. This accounts for the second part of generalization (84).

The comparison with q results in the following subcases:

(ba) the overt or reconstructed material in the predicative CC is all AC (as in (4b), (4d)) or mixed, some part being AC, some ID (as in (4c) or (6a, b)). The predicate may belong to either in this constellation.

(bb) the overt or reconstructed material in the CC is all ID material (as in

(7), (32)). Then, p, q must be instances of the same event type. Since two events must differ in some part, it follows that the AC will be to the left of the CC. If there is no trace of it in the CC, then the AC has its base position to the left of the *Auch* in question.

(bc) the CC contains no overt material and only insignificant reconstructed material, the finite verb being an auxiliary or the like (as in (12b)). It follows that the infinite predicate defining the event type (the main verb, etc) is overtly to the left, and only represented in the CC by its trace. Depending on whether this predicate figures as part of the AC or ID, p and q will be understood as representing events of different types or events of the same type.

(a, b) exhaust the acceptable options. Let us now see how the impossible cases are excluded:

What excludes that we have an AC/ID distribution like the one in (86), where the CC of *Auch* contains only ID material?

(86) Auch Hans hat *dem* PET*er* das Buch gezeigt.
Also Hans has the [dat.] Peter the book shown
Hans too showed Peter the book.
q: Hans hat *Franz* das Buch gezeigt.

The answer is: the adding operation, which is defined over the CC, requires differing entities, but q shows that this condition is not fulfilled. Hence (86) is out. This answer can be extended to cases where all material is ID material. In this case the propositions just cannot indicate two different events of the same type, they are the same event.

What about cases containing AC material not only in the CC, but also beyond it? In (bb), which concerns CCs that are predicate projections, this constellation was not excluded, because there are split cases and also occasional examples of double ACs on the predicate projection line. But cases like (87a, b) with AC material outside the CC are obviously impossible:

(87) a. Auch *Peter* hat seiner Mutter *ein BUCH* gezeigt.
Also Peter has his mother[dat.] a book shown
q: Paul hat seiner Mutter ein Bild gezeigt.
b. Auch PET*er* hat seiner Mutter *ein Buch* gezeigt.
q: Paul hat seiner Mutter ein Bild gezeigt.

Obviously, a constraint is at work that AC parts must belong to the same XP projection, even if they are interrupted by ID material (which is not different from what we meet in the case of focus structure interacting with theme-rheme structure). There cannot be such a thing as a proposition with

two ACs, one lying within the CC and the other outside it. This restricts split ACs to predicate projections as required.

Taking all this together, there can be no doubt about the relevance of the syntactic division into CC and the rest of the clause for the interpretation of *Auch* clauses with respect to the AC/ID division. We shall see later on (section 4.3) how the different constellations in the CC also give rise to different utterance meanings.

To sum up, what we think should be represented in the meaning description of *Auch* is the following:

1. a non-implicated meaning element ADD, with which is associated
   a) the entailment of its host proposition p
   b) the implicature that a proposition q exists to which p is added;
2. the implicature that p, q belong to the same AS, i.e. have the same AC/ID division;
3. access to the division into the CC and the rest of the clause such that the ADDing operation applies to the objects represented by the contents of the CC and the corresponding part in q.

Furthermore, we argued

4. that the AC/ID division results in principle from the comparison between p and q (i.e. from context). Syntax and focus structure of p may place additional restrictions on possible qs, but this is strictly optional;
5. that ADDing p to q in the same AS implies that IDs containing the predicate are two different instances of the same event type; hence, not only ACs can be added to each other, but also predicative IDs;
6. that given (85), it follows that nonpredicative XPs always denote alternative values if added, hence must be ACs, whereas predicative XPs can figure as ACs, but also as IDs.
7. that the correlations between the division into CC and the rest of the clause and the AC/ID division stated in (58)/(84) can be completely derived on the basis of 1–6.

3.3 *Summary*

In this section, we first sketched previous descriptions of *Auch* and then discussed what we consider their major flaws arguing (i) that a non-implicated meaning element ADD is needed, (ii) that in determining the AC/ID division the focus structure of p is irrelevant, and context (comparing p with q) almost exclusively relevant, (iii) that in the adding

operation characteristic for *Auch* the material contained in the CC plays the crucial role. We then presented our own proposal, in which we try to do justice to (i)–(iii). Finally, we showed how the generalization (58)/(84) can be derived on this basis.

4 FOCUS STRUCTURE AND ITS RELATION TO THE SYNTAX AND SEMANTICS OF *AUCH*

Given the results of the foregoing sections, we will now try to solve the final, modular task: to show that the accent pattern as well as the interpretation of *Auch* clauses—which comprises the actual division of the host clause of *Auch* into the variable (AC) and the identical part (ID), plus the observable variations in utterance meaning—derive without further stipulation from the syntax and semantics of *Auch* interacting with principles of focus structure and context.

4.1 *The focus-background theory*

Let us begin with a few remarks on the basics of our focus theory:

First, our focus theory is syntactically based.[40] By this we mean that the focus-background structure (=FBS) of a clause is determined by the *free* assignment of a syntactic focus feature [+ F] to a constituent in this clause. The FBS of a clause, therefore, is fixed when the clause so to speak meets information structure, which is the same as to say that information structure cannot alter it; it can only use it for its own purposes.

Second, since the FBS is thus, by definition, fixed in syntax and only read off at the level of information structure, it is in principle totally independent of topic/comment (TCS) and theme/rheme structure (TRS), the latter being the same as given/new in our approach (see Molnár 1991, 1993, and below). With both of them, however, FBS interacts in a systematic way. Thus, rhematic material must in principle be focused and thematic material can never carry the NA, except in contrastive function.

Third, the FBS has a very general function: highlighting the information in the focused constituent, thus backgrounding everything else in the clause. Normally, the FBS evokes a set of contextually salient alternatives thereby highlighting the focused constituent. This, however, is not the only function the FBS has, as we shall see below.

Fourth, the overt realization of focusing is accentuation, determined in PF (in interaction with syntactic structure). Since the same accent pattern

may sometimes realize different focus structures, clauses may be overtly ambiguous as to their FBS. In this case, and only in this case, the co-text or context may disambiguate them.

Now to the specifics of this focus theory:

First, [+F] may be assigned to any (lexical) constituent (sometimes to more than one constituent) in the syntactic structure of the clause, but must be assigned to at least one. In order to be identifiable at PF (where the accent pattern is determined), [+F] must be assigned to one or more constituents before Spell-out. We will assume furthermore that there is no covert movement of [+F] after Spell-out, on its way to LF, so to speak (no focus raising, etc.). [+F], finally, has no meaning of its own beyond the informational function of highlighting the whole clause or part of it.

Second, the focus domain in this model does not result from [+F] percolating up the tree (= the bottom–up approach proposed by Rochemont 1986; Selkirk 1984; Hetland 1992; Winkler 1997; and others), but from spreading downwards from a dominating node (top–down) to all constituents dominated by [+F] (see Jacobs 1993; Uhmann 1991; Rosengren 1993b, 1994). In the case of wide focus (i.e. the whole clause being in focus), the dominating node is the uppermost node of VP. [+F] may also be assigned further down in VP, thus giving rise to focus domains covering only part of the VP, or it may be assigned to DPs, PPs, APs, etc. or parts of them, in both cases giving rise to a more or less narrow focus. Note that all constituents which lie within a focus domain are focused, irrespective of their status. Consequently, if the uppermost VP bears [+F], all adverbials contained in it are focused, too. Hence, the domain dominated by [+F] constitutes a focus domain. The top–down model restricts the extension of the focus domain in a natural way. (A bottom–up percolating feature e.g. on the direct object would percolate at least to the top of the VP since the percolation could not be stopped without stipulation) A top–down model also avoids another problem bound to a percolating [+F] feature: since percolation by definition is operating bottom-up, it is difficult (if not impossible) to explain how [+F] can 'jump' from the 'focus exponent' (=FE), as a rule a non-head, to the head and from there percolate up the head line.

Restricting focus assignment to lexical projections amounts to saying that functional projections (TP, AgrP, etc) are not part of the focus of a clause, not even if the focus is wide (as for the special status of Verum focus, see note 8). The theoretical consequences of this are too manifold to be discussed here (cf. Rosengren 1993b, 1994) and of no importance for the issue at hand. Let us just note that language specific differences concerning functional A projections such as weak and strong features—which do have

consequences for the result of Spell-out (weak features being checked at LF and strong being checked before Spell-out)—do not have any impact on focus structure (at least not in languages like German and English).

Third, wide focus enclosing the whole clause presupposes basic word order (being the order in which the arguments of the lexical predicate are projected into syntax). Changes in relative order by which a constituent leaves the focus domain in order to pass by another constituent (e.g. by scrambling, but sometimes also by topicalization; see Rosengren 1993b, 1994) will automatically result in a restricted focus domain (which is not the same as a narrow focus domain). In other words, the focus component interacts with a syntactic word order subcomponent (until now left undefined in the minimalist program) which rearranges constituents in such a way that wide focus cannot be obtained any more. Since only these by-pass movements have this effect, topicalization of the subject, for example, which preserves relative order, will be possible without any impact on the focus domain. Finally, there may be more than one [+F] in a clause, resulting in more than one focus domain. This is to be kept strictly apart from [+F] spreading down within the same focus domain.

Fourth, there exists a systematic relation between focus assignment and argument structure, which (at least in part) determines the accent assignment in PF. We assume that the phonological correlate of [+F] is an abstract accent marker [+P], which is related to [+F] in a systematic way, and triggers the nuclear accent (NA) in PF. The constituent carrying [+P] in the domain of [+F] will be called focus exponent (FE). In the case of wide focus, [+P] is normally placed on the verb next argument. Under certain conditions, however, adjuncts and predicates may also be focus exponents.

Let us now demonstrate briefly what this model predicts about focus structure in clauses with more than one argument:

(88) [CP Paul hat$_i$ $_{+F}$[VP gestern   seiner Mutter Grass' neues BUCH
     Paul has   yesterday his   mother Grass's new   book
  gekauft t$_i$]].
  bought
  Yesterday, Paul bought his mother the new book by Grass.

Our focus theory tells us that (88) should have a wide focus reading, for (i) [+F] dominates the whole VP and the rightmost argument, the direct object, is the focus exponent, (ii) the clause exhibits the basic relative word order between the arguments, which is not altered by the optional topicalization of the subject, nor by the adjunction of *gestern* to the VP. However, if the direct object (the focus exponent in (88)) is scrambled as in (89) or topicalized, passing by the subject or an adverbial, the object leaves

the focus domain indicated by [+F] on the uppermost VP, the result being a reduced focus domain. In this case the indirect object, which is now the verb next argument, will take over the function as FE.

(89) [$_{CP}$Paul hat$_i$ [$_{VP}$[Grass' neues Buch]$_j$ $_{+F}$[gestern   seiner MUtter t$_j$
      Paul has   Grass's new book   yesterday his   mother
      gekauft t$_i$]]].
      bought
      Paul bought the new book by Grass for his mother yesterday.

Note, too, that the moved direct object may be unfocused as in (89), thus being part of the background, but it may also carry a [+F] of its own, this focus then being narrow.

4.2 *How does focus work in* Auch *clauses?*

In keeping with our modular approach, we expect that *in principle* the focus behaviour of *Auch* clauses does not differ from the focus behaviour in clauses without *Auch*. Likewise, we expect that the interaction of the FBS with TRS and TCS is the same. But since there is one more focusable element—*Auch*—, we should not be surprised to also find differences between the focus structure of the *Auch*-less clause and the *Auch* clause for which this additional element is responsible. In fact, as we actually saw above, there is a systematic relation between focusing and the CC of *Auch*, as shown by the empirical generalization formulated in section 2.5, here repeated for convenience:

(90) *If the CC of* Auch *includes overt AC material, it gets the NA, if it does not,* Auch *gets it.*

Given the fact that overt AC material in the CC of *Auch*—which then is always unstressed—always includes the focus exponent, i.e. the constituent that would normally carry the NA in the corresponding *Auch*-less clause (cf. sections 2.1 and 2.5), the first half of (90) is entirely in keeping with normal focus behaviour. Since *Auch* says that the proposition of the *Auch* clause belongs to an alternative set, the AC part being one of the alternative values, the AC is coextensive to a focus domain. Thus, in clauses with unstressed *auch* the focus does its normal work: it highlights the alternative in question. Note that the focus domain may include *auch* (in split cases), which means that +F could in principle also directly dominate *auch* in unsplit cases. (Since in this case the FE will still be within the CC, nothing depends on whether +F is assigned to the entire *auch* phrase or just to the CC. We will therefore not pursue this question any further).

But what about the second half of (90)?

In section 3.4. we saw that whenever *Auch* gets the NA, there is only ID material in its CC or the CC is empty. Thus the obvious explanation would be that in the constellation described in the second half of (90) *Auch* is the last focusable material in the clause, which in terms of FBS means that the rest of the clause is background. In other words, the constituent carrying the NA if there were no *Auch*, does not carry it; at best, assignment of a secondary accent is possible. Hence, the AC domain does not correspond to a focus domain any more either. Obviously then, focusing *Auch* overrules the normal FBS, and identifying the AC/ID division is more or less (*AUCH* signals itself that overt material to its right is ID material and syntax may offer a helping hand) relegated to context, i.e. the comparison between *p* and *q*.

Clearly, the fact that focusing *Auch* has these consequences must be related to the function this focusing has. What then is this function?

A comparison with modal particles (MP) may be instructive. Ormelius-Sandblom (1997: 101ff) argues (i) that MPs themselves may be focused or be included in the focus domain if the focus projects, but may also lie outside it (cf. also Meibauer 1994: 62ff), (ii) that MPs are (minimally) focused, whenever they are the last focusable material in the clause, and that they may carry secondary stress when to the left of the NA, (iii) that they are not part of the TRS.

Obviously, *Auch* behaves just like MPs regarding (i) and (ii). Here, we are just interested in (iii), which may seem controversial. Ormelius-Sandblom argues in the following way: since MPs always carry new information and, therefore, by definition, should always be rhematic and hence focused themselves, the fact that they may stay unfocused would lead to a contradiction, if we keep to the assumption that they take part in the TRS. Looked upon from the perspective of the TRS, we may also put it in the following way: the distinction between theme and rheme implies that what can be a rheme should also be able to be a theme, but MPs are obviously never c-construable. Hence, the theme/rheme distinction does not make sense in their case.

The parallel between MPs and *Auch* is obvious: *Auch*, focused or not, contributes new information to the clause. Hence focusing it cannot be taken as just signalling that it belongs to the rhematic part of the clause, and leaving it unfocused will not turn it into thematic material. We will assume, therefore, that *Auch*, like MPs, is not part of the TRS either.[41] The same argument holds, by and large, for all so-called focus particles.

What, then, is the function of focusing *Auch*, if it is not highlighting that it is rhematic? All that seems to happen is, trivially, that the adding

operation is focused, otherwise the AC is focused. If so, focusing in *Auch* clauses follows from completely general focus principles. In a way, the only interesting contribution coming from ±focusing *Auch* is informational: focusing it 'means' that there is only ID material or no overt material to its right and that consequently the AC material is to its left and not focusing it 'means' that the AC material (or part of it, including the FE) must be to its right.

In order to illustrate the relation between the CC of *Auch*, the AC/ID division and the focus structure, let us now look at a few concrete examples.

The following three cases have the same AC/ID division but different CCs: [42]

(91) daß [Peter $_{ID}$] [auch [$_{CC}$ [$_{+F}$ seiner MUtter $_{AC}$]
    that Peter   also   his   mother
    [das Buch gezeigt hat $_{ID}$]]]
    the book shown has
    that Peter also showed the book to his mother

(91')
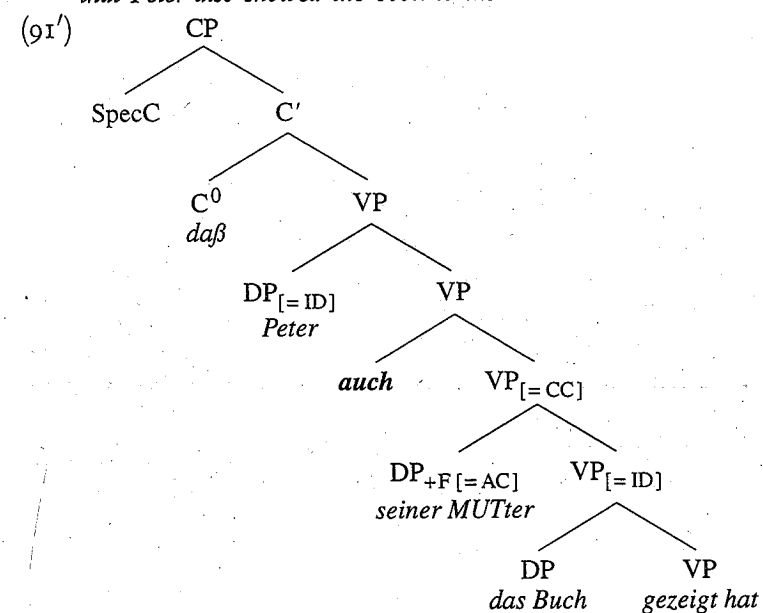
In (91), *Auch* takes a VP as its CC, which happens to contain a minimally focused constituent. It goes without saying that this focus identifies the AC, which as the last focusable material gets the NA. Everything else must be ID material. Hence, in this case, the AC can be inferred from the position of the NA (*seiner* perhaps being c-construable).

In (92) *Auch* takes the DP (= IO) as its CC:

(92) daß [Peter $_{ID}$] [$_{+F}$ auch [$_{CC}$ [seiner MUtter $_{AC}$]]]
    that Peter   also   his   mother
    [das Buch gezeigt hat $_{ID}$]
    the book shown has
    that Peter showed the book also to his mother

(92')
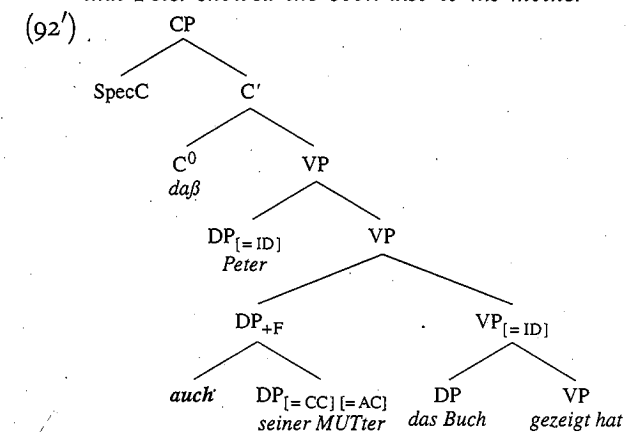
As a consequence, the CC must contain all the AC material (see above (58)/(84)), to which the focus must correspond. In every other respect (91) and (92) are alike.

(93) daß [Peter $_{ID}$] [seiner Mutter $_{AC}$] [[$_{+F}$ AUCH]
    that Peter   his   mother   also
    [$_{CC}$ [das Buch gezeigt hat $_{ID}$]]]
    the book shown has
    that Peter has shown the book to his mother, too

(93')
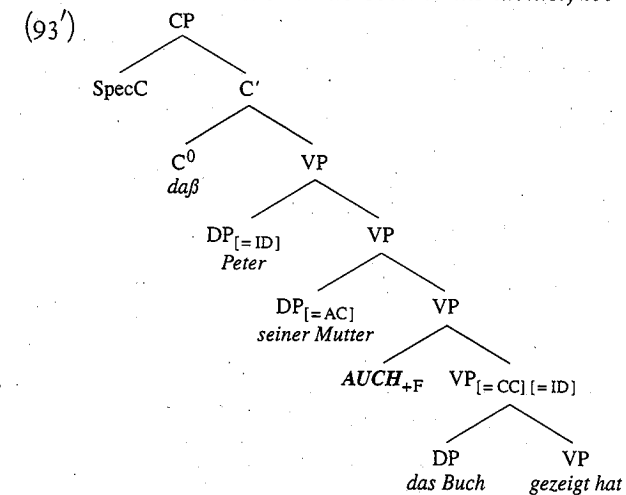
In (93) *Auch* is focused, in which case it must have a VP as its CC that

contains only ID material, thereby indicating that the AC is to the left. The exact AC/ID division can only be determined by comparison with q.

Let us now look at a split case, the AC being the entire proposition:

(94) daß [$_{+F}$ [ein Student $_{AC}$] [auch [$_{CC}$ mein AUto angefahren hat $_{AC}$]]]
     that   a   student   also   my car hit   has
     that, in addition, a student hit my car

(94′)

                CP
           /   \
      SpecC   C′
               /   \
            C⁰   VP$_{+F\,[=AC]}$
           daß   / \
               DP   VP
            ein Student / \
              auch   VP$_{[=CC]}$
                     / \
                 DP$_{+P}$ VP
              mein Auto *angefahren hat*
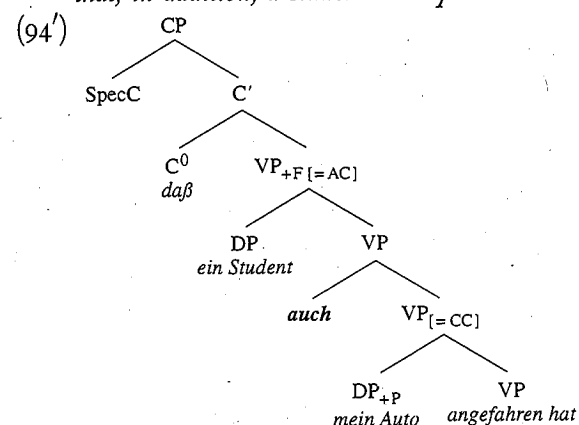
In correspondence to this AC, [+F] comprises the highest VP; accordingly the FE must be the DO. *Auch* is included in the +F-domain, but could also have been adjoined to the highest VP. (Note that in this case a common denominator for p and q functioning as ID has to be inferred.) The overt accent does not tell us that we have a split case, being compatible with a number of other AC/ID divisions and corresponding +F assignments. This ambiguity can only be resolved in context, i.e. by comparing p and q.

Let us now look at a case where the CC is overtly empty:

(95) [seiner Mutter das Buch gezeigt $_{AC}$]$_i$ hat$_j$ [[Peter $_{ID}$] [[$_{+F}$ AUCH] [$_{CC}$ t$_i$ t$_j$]]]

In this case, the whole VP, which contains AC material, following *Auch* is moved to the initial field. This requires at once that *Auch* carries the NA, since it is now overtly the last focusable material in the clause. A secondary stress on *Buch* is not obligatory in this case but may be useful when processing the information structure of the clause. (Cf. also below). As for the AC/ID division, the non-normal constituent order tells us that not all material to the right can be AC material. Thus, *Peter* must be ID material. Of course, the AC/ID distribution could overtly be just the other way around. Between these options only comparison between p and q can decide.

Let us finally look at a case where the 'split' of the AC is so to speak upside down in that the AC part within the CC is to the left and higher in the configuration than the AC material outside the CC:

(96) [Heute ist ein furchtbarer Tag. Die KINder weinen dauernd,
     Today is an awful   day. The children cry   constantly,
     der FERNseher geht   nicht, und] auch der HUND
     the TV set   works not, and also the dog
     ist verschwunden.
     is disappeared
     [*Today is an awful day. The children keep crying, the TV set doesn't work and*] *the dog ran away, too.*

(96) represents a so-called thetic clause, i.e. a clause with wide focus, where the subject is the FE (see Rosengren 1997 for a recent discussion of this kind of clause). This corresponds to the AC being the entire proposition. Still, *Auch* just takes the DP in the initial field as its CC, thus c-commanding only the AC constituent carrying the NA.[43] This case is especially interesting because it is the only case where an *Auch*+DP may be FE in a wide focus projection, i.e. a projection with a +F on top of the VP (another projection line). This shows even more clearly than normal split cases that not more than the FE need be within the CC of *Auch*, which then projects in its usual way.

Let us now illustrate a more complicated interaction between the AC/ID division *Auch* gives rise to, the FBS and the TRS. We saw in section 2.1.1.2 that there is no 1:1 relation between AC and rhematic material in that the AC may comprise c-construable thematic material, which is in line with how the FBS and TRS usually interact. Much more interesting, however, are examples like the following, where the interaction in *Auch* clauses differs from what we would expect in the corresponding *Auch*-less clause:

(97) Was tat Gerda, als   sie in das Zimmer trat,   in dem   Gerd
     What did Gerda when she in the room   entered in which Gerd
     die Blumen goß?
     the flowers watered
     What did Gerda do when entering the room in which Gerd was watering the plants?
    a. Sie hat [$_{+F}$ Gerd beGRÜSST]
       She has   Gerd greeted
       She greeted Gerd.
    b. *Sie hat [$_{+F}$ GERD begrüßt].
    c. Sie hat auch [$_{+F}$ GERD begrüßt].

    d. *Sie hat auch [$_{+F}$ Gerd beGRÜSST].
    e. ??Sie hat Gerd [$_{+F}$ AUCH] begrüßt.

The *auch*-less examples (97a) and (97b) were used by Jacobs (1988) to point out that the NA cannot be on the expected FE (*Gerd*), since this is thematic material, the NA therefore being carried by the verb. But as soon as *Auch* is adjoined to the respective VP, the only really acceptable assignment of the NA is to *Gerd* (in the relevant reading: 'what Gerda did in addition to other things was saying hallo to Gerd'). Why is this so? Obviously, *Auch* dominates the information structure in that the FBS is taken to be in the primary service of the AC/ID division induced by *Auch*: the AC corresponds to the entire focus domain, and must be made 'visible' by the accent pattern regularly signalling this domain; thus the TRS and normal effects of TRS–FBS interaction may be overruled. The deviance of (97d) underlines this point: the FBS is taken at face value by the AC/ID division; hence, the verb carrying the NA is interpreted as minimally focused, and thus should be the only AC material in the clause, but this interpretation is not supported by the relevant context (the question). As for the marginality of (91e), AUCH would require that the material in its CC is ID material, which is also ruled out by the relevant context. Note, however, that the informational dominance of the AC/ID division does not mean that the TRS cannot be derived from context. In the context of a question like in (97), prompting an adequate reply, the TRS may figure, too, but 'behind' the AC/ID division, so to speak.

    Let us now turn to the function of possible secondary stress in *Auch* clauses, which as we pointed out in section 2.1.1.1, may occur (i) on a constituent to the left of *Auch*, if *Auch* or its AC to the right carries the NA, (ii) on *Auch* itself, if the AC part carrying the NA is to its right. Concerning the first case, let us again stress the fact that secondary accent is not in the service of identifying the AC. Rather, secondary accents do the same work they always do (we restrict ourselves to focus accents, of course), i.e. (optionally) marking further focusable material, or contrastive constituents, or topics. If the constituent marked this way happens to coincide with the AC, the secondary accent will in a way 'signal' that it is the AC, otherwise it will not.

    Neither is the assignment of secondary stress dependent on the rhematicity of the AC: a rhematic AC need not get secondary stress, as we have seen over and over again, nor need the AC always be rhematic; cf. (98), where *Peter* is thematic material c-construable via the question (98A), but still the AC of the clause in (98A′–A″). More importantly, this example demonstrates that secondary stress may mark a topic which is not the AC at the same time:

(98) A. Wer hat denn die schönsten   Impressionisten,
        Who has [MP] the beautiful-est impressionists
        Johannes oder Peter?
        Johannes or   Peter
        Who has got the most beautiful impressionists, Johannes or Peter?
    B. Johannes hat jedenfalls einen GauGUIN.
        Johannes has any case a   Gauguin
        At any rate, Johannes has got a Gauguin.
    A′. Einen GauGUIN$_i$ hat Peter/PEter AUCH t$_i$.
       A   Gauguin has Peter   also
       Peter also has got a Gauguin.
    A″. Einen GauGUIN$_i$ hat auch PEter t$_i$.

Two things are of interest here: first, in (98A″) *Peter* must carry the NA, since it is the last focusable material, in (98A′) it may carry a secondary stress, the function of which may be contrastive or to highlight rhematic material, as well as highlighting the AC, or any combination of them; second in (98A′), and in (98A″), cases of so-called i-topicalization, the preverbal constituent has got a secondary rise-fall contour. This rise-fall contour is typical for i-topics (cf. Büring 1997; Jacobs 1997; Molnár & Rosengren 1997) and has nothing to do with the division into AC and ID. This underlines that secondary stress may be in the service of other information structures, which can be realized by the *Auch* clause in addition to its characteristic information structure, the AC/ID division, and the FBS.

    The following examples are counterparts to (98) in that the material in the scope of *Auch* is AC material.

(99) a. Sie ist klug.   Aber sie ist auch EHRgeizig.
         She is intelligent but she is also ambitious
     b. Aber EHRgeizig ist sie AUCH.
         But ambitious is she also
         But she is also ambitious.
(100) a. Er hat Luise geschwängert, und er hat sie auch geHEIratet.
         He has Luise made pregnant and he has she also married
         He got Luise pregnant and he also married her.
     b. Er hat Luise geschwängert, und geHEIratet hat er sie AUCH.
         He got Luise pregnant and he also married her.

In (99a)–(100a) we have an AC to the right of *Auch*. Moving this material out of the scope of *Auch* (in order to topicalize it) as in (99b)–(100b), results automatically in *Auch* now carrying the NA, since nothing is left in its scope

that could carry it. (Cf. also (104) below). Note that the rise-contour on the moved constituent is optional.

Let us now discuss the function of secondary stress on *Auch*,[44] looking first at the normal case in which this accent is optional:

(101) Petra ist sehr intelligent, aber sie ist AUCH sehr EHRgeizig.
Petra is very intelligent but she is also   very ambitious

(102) Ja,   AUCH mit DIEsem Fall hatten wir Probleme.
Yes, also   with this   case had   we problems
Yes, we did have problems with this case too.

The function of the secondary accent on *Auch* in (101)–(102) is quite different from the function of primary stress on *Auch* discussed above. What it apparently does is to underline the truth of the added proposition *p* against contextually salient doubts or even assumptions of the opposite. Evidence supporting this hypothesis is the fact that this type of secondary accent typically occurs in the context of *aber* 'but'. It implicates the kind of contradictory assumption required, which in the case of (101) would be that being intelligent excludes being ambitious. Also typical is that these accents occur in utterances trying to dispel doubts concerning certain facts, as can be easily imagined as a context for (102).

Note that there are also cases like (103), in which the accent is not only outright contrastive, but plainly corrective: what is conveyed is that *nur* 'only' is an inappropriate word to be replaced by *Auch*. In this case, and as it seems, only in this case, *Auch* carries the NA, although its AC is still to the right.

(103) Es geht nicht NUR ums   Geld.   Es geht AUCH ums   Geld.
It goes not   only about money It goes also   about-the money
It's not only about money, it's also about money.

Let us finally look at examples, where we have obligatory secondary stress on *AUCH* in the initial field; cf. (104a, b) vs. (104c, d) and the representation of (104e') in (104'):

(104) a. Peter und Ulrike wollten$_j$ auch zusammen SPIElen t$_j$.
Peter and Ulrike wanted also together   play
Peter and Ulrike also wanted to play together.

   b. [Auch zusammen SPIElen]$_i$ wollten$_j$ Peter und Ulrike t$_i$ t$_j$.
Peter and Ulrike also wanted to play together.

   c. Peter und Ulrike wollten$_j$ AUCH zusammen spielen t$_j$.
Peter and Ulrike wanted to play together, too.

   d. [Zusammen spielen]$_i$ wollten$_j$ Peter und Ulrike AUCH t$_i$ t$_j$.
Peter and Ulrike wanted to play together, too.

   e. [AUCH zusammen spielen]$_i$ wollten$_j$ PEter und UlRIke t$_i$ t$_j$.
Peter and Ulrike wanted to play together, too.

(104e') [[$_{+F}$ AUCH] [$_{CC}$ zusammen spielen $_{ID}$]]$_i$ wollten [$_{+F}$ Peter und UlRIke t$_i$]
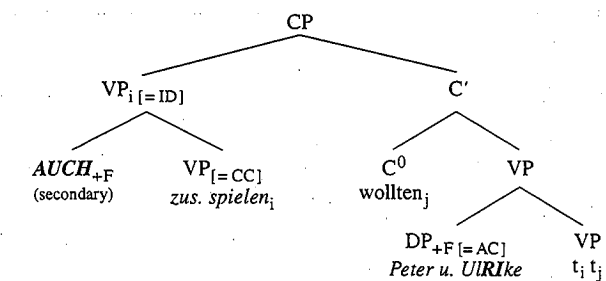
As for (104a, b), the AC being in the scope of *auch* will, of course, carry the NA no matter whether the *Auch* phrase is in its final position or in the initial field. The interesting cases are (104c, d). In (104c) *AUCH* tells us that *zusammen spielen* is ID material. In (104d) only the CC, comprising ID material, is moved to the initial field. Moved material in this position, however, could also be AC material. Hence, (104d) is overtly ambiguous: either the moved VP or the subject is the AC. In (104e), however, the VP including *Auch* is moved, the AC gets the NA as the last focusable material in the clause, but *Auch* nonetheless *requires* a secondary accent in this position. We cannot really explain this. What is obvious, however, is the parallel to what we have seen when the *AUCH* VP is in situ: if it contains the AC, it will get the NA, if it contains only ID material, *Auch* must get the NA, thus signalling that there is only ID material in its scope. What happens apparently, if *Auch*-constituents are moved, is that they retain their NA, which in the case of (104e) can only be realized as secondary stress. This secondary stress may in turn be taken as signalling that the topicalized CC material is just ID material.

Summarizing this subsection, we have argued (i) that focusing in *Auch* clauses does not differ in principle from focusing in *Auch*-less clauses, (ii) that the function of focus on *Auch* is to highlight the adding operation, which results in its overruling the FBS, (iii) that as a result of this function focusing *Auch* has purely informational effects. We also showed that the accent pattern in *Auch* clauses is just an instance of the independent principle that the last focusable material in a clause must get the NA. Finally we discussed a number of examples displaying interesting aspects of the interaction between syntax of *Auch*, semantics of *Auch*, focus structure and context in relation to the AC/ID division.

4.3 *The utterance meanings of* Auch

So far, we have concentrated on the interaction between the focus structure, the syntactic structure and the grammatically determined meaning of *Auch*. In section 3.2 we mentioned that this gives rise to two utterance meanings: 'in addition/furthermore' and 'likewise'. We shall now look at these utterance meanings in more detail.[45]

As shown in section 3, *Auch* says (i) that its host proposition p and some proposition q in context are in the same AS, i.e. p, q are partly different (AC) and partly identical (ID); (ii) that the content of its CC is added to the corresponding part in q. As also shown, the CC must contain the AC, if it is a nonpredicative XP (DP, PP etc), but if it is a predicative XP, all options are possible: only AC material, only ID material, or a mixture of both. In that case only comparison with q can decide which option is realized.

How does this give rise to different utterance meanings? Given the central role of the CC, we may expect that if *Auch* adds only differing material or corresponding traces, the utterance meaning will be 'furthermore' emphasizing the aspect of difference between p, q, and if it adds only identical material or corresponding traces the utterance meaning is 'likewise' emphasizing the aspect of sameness. (What will happen if *Auch* adds both kinds of material is somewhat more difficult to predict. Perhaps this will give rise to a conflict between the two options.)

In the previous section, we argued that +F will always be assigned to the last focusable element, i.e. the overt AC part in the scope of *Auch*, if there is one, otherwise to *Auch* itself, i.e. there is no overt AC material. Since the CC can be all ID only in the latter case, the utterance meaning 'likewise' will only occur with stressed *Auch*. But since focusing operates on overt structures, *Auch* is also stressed if its CC contains AC traces. Thus, we cannot expect a 1:1 relation between *auch/AUCH* and the two utterance meanings.

Let us now look at some telling cases. A minimal pair is provided by (105a, b), where the covert material in the CC of *AUCH* is the same, but the trace of the main predicate *gearbeitet* corresponds to exclusively AC material in (105a), and to exclusively ID material in (105b):

(105) a. [Paul war gestern im Kino.] *GeARbeitet*ᵢ hat *Paul*
Paul was yesterday in the cinema. Worked has Paul
gestern AUCH tᵢ.
yesterday also
Yesterday Paul went to the movies. He also worked yesterday.

b. [Peter hat gestern gearbeitet.] GeARbeitetᵢ hat *Paul*
Peter has yesterday worked. Worked has Paul
gestern AUCH tᵢ.
yesterday also.
Peter worked yesterday. Paul also worked yesterday.

There is a clear intuition that in (105a) only the utterance meaning 'furthermore' is possible, in (105b) only 'likewise'. That this is not a chance effect is shown by the cases (98)–(100), where the material behind *Auch* has also been topicalized: in (98A′) where the trace in the scope of *Auch* represents ID material, the natural interpretation is 'likewise', i.e. Peter, just like Johannes, has a Gauguin. In (99b)–(100b), however, where the trace represents AC material, the 'furthermore' interpretation is clearly preferred.

Another minimal pair, involving *auch* vs. *AUCH*, is (106), which takes up (18) above: the AC/ID division is in principle the same in both clauses, but the CC of *auch* contains the AC, the CC of *AUCH* only ID material.

(106) a. Paul hat *dem VAter* nicht geschrieben und er hat auch
Paul has the father not written and he has also
die MUtter vergessen.
the mother forgotten
Paul didn't write to his father and he also forgot his mother.

b. Paul hat *dem VAter* nicht geschrieben und er hat
Paul has the father not written and he has
die MUtter AUCH vergessen.
the mother also forgotten
Paul didn't write to his father and he also forgot his mother.

Again, the contents of the CC determine what is highlighted: in (106a) it is the variable part (*Vater* vs. *Mutter*), giving rise to the 'furthermore' interpretation, whereas in (106b) the fact that we have two tokens of the same event types is emphasized, giving rise to the 'likewise' interpretation. Note that in (106b) but not in (106a), 'not writing' *must* be identified with 'forgetting', which actually proves the same point.

This effect appears in more dramatic form in the examples (107)–(108) (adapted from Kaplan's 1984 discussion of differences between English *also* and *too*, but originally going back to Green 1968, 1973):

(107) Ich sah, daß
I saw that
a. PEter vom FISCH nahm und PAUL auch *vom*
Peter of-the fish took and Paul also of-the

FLEISCH nahm.
meat   took
Peter took some of the fish and Paul also took some of the meat.

  b. PEter vom   FISCH nahm und PAUL auch *das FLEISCH*
    Peter of-the fish   took and Paul also the meat
    nicht verschmähte.
    not   scorned
    Peter took some of the fish and Paul didn't say no to the meat either.

(108) Ich sah, daß

  a. ??PEter vom FISCH nahm und PAUL *vom Fleisch* AUCH nahm

  b. ?*PEter vom FISCH nahm und PAUL *das Fleisch* AUCH nicht
    verschmähte.

Consider first the *auch*-variants (107a, b), which are more or less understood the same way (i.e. 'von X nehmen' is equated with 'X nicht verschmähen'): Paul took from the meat *in addition* to taking from the fish. That he took from the fish rather than from something else is an implicature: the second conjunct containing *auch* implies the existence of a proposition 'Paul nahm von $x \neq$ Fleisch', with the first conjunct as the closest co-text forcing the further specification of $x =$ Fisch. Note that *auch* must be interpreted as 'in addition/furthermore'; any 'likewise' reading is impossible.

By contrast, the *AUCH* counterparts in (108) sound almost incongruent: apparently, *AUCH* induces an identity reading of the predicates suggesting that eating fish = eating meat. At first glance, one might suspect that this only happens if *Paul* is inadvertently taken as the AC of *AUCH*. However, the incongruence effect remains stable even in the reading where the AC = *das Fleisch*, which shows that in *AUCH*-constellations like (108) the aspect of sameness of the two propositions in question rather than their difference is highlighted. In other words, *AUCH* induces the utterance meaning 'likewise', as predicted.

The difference showing up in minimal pairs is confirmed by AC/ID constellations in which either *auch* or *AUCH* is licit:

As pointed out in section 2.1.1.1, if the AC is the finite verb, only unstressed *auch* is possible, the reason being that the finite verb, visibly or reconstructed, always lies in the scope of *Auch*. Cf. (109) (corresponding to (13) above):

(109) a. daß Peter das Referat auch *TIPPte* / Peter *TIPPte*$_i$ das Referat auch t$_i$.
    (that) Peter the report also typed
    (that) Peter also typed the report

  b. *Peter *tippte* das Referat AUCH t$_i$.

Since the NA unambiguously tells us that there cannot be two events of the

same type, the prerequisite for the 'likewise' reading, we expect the 'in addition/furthermore' reading to be clearly prominent, which it is.

In the following case, only *AUCH* seems possible:

(110) A. Ich wünsche Dir einen schönen Sommer.
    I   wish   you a   nice   summer
    I hope you enjoy your summer.

  a. B. Ich dir AUCH (??auch ICH DIR).
    I   you also   (also I   you)
    The same to you.

  b. B. Danke, gleichfalls. / Danke, dito, dito. / Ich wünsch
    Thanks, likewise.   / Thanks, dito, dito. / I wish
    dir das gleiche.
    you the same
    (Thanks,) the same to you.

AUCH seems to be the only variant acceptable in this context, the reason being that the utterance meaning must be 'likewise' here. That the context (including the conventions for replying to good wishes) do in fact require this utterance meaning, is supported by the possible alternative replies in this situation (110b), which all turn on the notion of sameness.[46]

Let us now turn to a case that seems to contradict our predictions:

(111) a. Wenn DU MICH besuchst, werde auch ICH DICH besuchen.
    If   you me   visit   will also I   you   visit
    If you visit me I will visit you too.

  b. Wer SCHOTten BOURbon verkauft, verkauft auch
    Who Scots[dat.] Bourbon sells   sells   also
    ESkimos EISschränke.
    Eskimos fridges
    Whoever can sell Bourbon to the Scots can also sell fridges to the Eskimos.

In these cases the co-text shows that the finite verb is always ID material, but there are two ACs to the right of *auch*. Still, the utterance meaning 'likewise' is by far the preferred meaning in both (111a) and (111b), if not the only acceptable one. Why is this so? The answer may be that in (111a) as well as (111b), there is a common denominator for the two events: in (111a) the compared AC parts are in a way identical (speaker + adressee), and the variation results solely from the different thematic role of the pronouns; in (111b) the two propositions exemplify the same general meaning that there are people succeeding in selling other people things they already have or do not need, in other words, they are two tokens of the same event type. Thus, co-text or context blocks the utterance meaning 'furthermore', which would be meaningless here.

In concluding let us point out that the difference in utterance meanings predicted in our approach is intuitively clear in many cases, but not in all. Thus, to us the *auch* and *AUCH* variants in (112)–(113) seem practically equivalent in use, or the differences at least very subtle (though going into the direction we predict):

(112) Beck hat den ersten Fall gelöst.
    Beck has the first   case solved
    Beck solved the first case.
    a. Wenn er auch den ZWEIten Fall löst . . .
       If   he also the second   case solves
    b. Wenn er den zweiten Fall AUCH löst . . .
       If   he the second   case also   solves
       If he also solves the second case . . .

(113) A. Ute kommt.
     Ute comes
     Ute is coming.
    B. Ich weiß, aber {auch SUsi kommt / Susi kommt AUCH}.
      I   know but {also Susi comes / Susi comes also}
      I know, but Susi is coming, too.

But this should not be really surprising. After all, 'foregrounding' the partial identity between *p* and the proposition *q* it is added to does not make the difference between *p* and *q* disappear; it just becomes a matter of inference, and the same is true vice versa. Thus we can claim the existence of two utterance meanings related to the character of the material contained in the scope of *Auch* as further support for the correctness of our approach.

5 SUMMARY

From the start it has been our purpose to demonstrate that there is only one *Auch* and that the differences between its ± stressed variants are derivable from the interaction between syntax, semantics and focus structure. We have isolated and described the specific properties of this central additive particle and thereby shown that the standard approaches do not only miss the complementary pattern characterizing the stress behaviour of additive particles relative to their AC, but also the relation between the syntax and semantic of *Auch*, which is much more intimate than previously assumed: it is the syntactic division into CC and the rest of the clause induced by *Auch* which yields the domain over which the adding operation characteristic for *Auch* is defined: what *Auch* adds to the corresponding part of a contextually

given proposition *q* is the material in its CC. At the same time, the relation between the syntax and semantics of the *Auch* clause and its focus structure turned out to be much more superficial than previously assumed, showing in effect that our modular approach to the grammar of *Auch* is correct.

As for particulars, we have argued (i) that the complementary distribution of *auch* vs. *AUCH* cannot be explained by a movement analysis or the like, as has been previously assumed; (ii) that *Auch* and similar particles are XPs adjoining to XPs of all kinds; (iii) that the *Auch* phrase (*Auch* + CC) always is an immediate constituent on a predicate projection line; (iv) that the meaning requirement of *Auch* that its host proposition *p* belongs to the same set of alternatives as some contextually given proposition *q*, is not implemented via the focus structure of *p* but via comparing *p* with *q* in context; (v) that the *syntactic* division of the *Auch* clause into the CC vs. rest of the clause plays a crucial role for its semantics: what *Auch* adds to the corresponding part of *q* is the material in its CC, which may be either the AC or predicative ID material; (vi) that the difference in CC material results in two utterance meanings, 'furthermore/in addition' and 'likewise'; (vii) that the accent pattern of *Auch* clauses follows from independent focus regularities, the focus on *Auch* having purely informational functions. In short, we have shown that what has been called 'focus particles' in recent years are in reality 'scope particles'.

MARGA REIS
Deutsches Seminar der Universität Tübingen
Wilhelmstraße 50
D-72074 Tübingen
Germany
e-mail: mer@uni-tuebingen.de

INGER ROSENGREN
Tyska institutionen
Lunds Universitet
Helgonabacken 14
S-223 62 LUND
Sweden
e-mail: inger.rosengren@tyska.lu.se

NOTES

2. We shall use italics to mark the RC and

capitals for stressed syllables whenever necessary. The expression 'A > B' to be introduced below is shorthand for 'A precedes B'.

3 Henceforth we shall use *Auch* as the particle name, also using *auch* for its unstressed and *AUCH* for its stressed variant.

4 For the time being we shall use as examples only simple clauses where the proposition of the clause equals the proposition *Auch* operates on (ultimately effecting its division into AC vs. ID). We thus avoid the well-known problems of so-called 'semantic scope'; see section 3.1.1.

5 The *nicht nur* continuation indicates a possible co-text in accordance with the AC marked in italics.

6 Jacobs (1983: 83ff) considers them as outright deviant, as opposed to cases of so-called obligatory non-adjacency like (i). (In (ia) non-adjacency is forced by semantics: relative scope of *Auch* vis-à-vis the scope-taking item *zwei Freunde*; see section 3.1.1; in (ib) by syntactic reasons, the adjacent position being always ruled out; see section 2.3.2.)

(i) a. Er hat auch zwei Freunden
    He has also two friends
    BÜcher gekauft. (≠ Er hat zwei
    books bought. (He has two
    Freunden auch *BÜcher* gekauft.)
    friends also books bought.)
    He also bought books for two friends.
    (≠ *He also bought two friends books.*)
  b. Auch ohne   *GELD* war er.
    Also without money was he.
    (*Ohne   auch *GELD* war er.)
    (Without also money was he.)
    Neither had he any money.

We do not think that such a sharp distinction in acceptability between obligatory and optional cases of non-adjacency exists. In fact, it should not even be expected: since non-adjacency can be induced by exclusively semantic factors, non-adjacency is syntactically possible; hence, there is no reason why there should not exist optional non-adjacency as in (6). Thus, we consider Jacobs' principle of 'maximal proximity to the focus' (1983: 86) as a stylistic rather than syntactic principle. Note, too, that there are occasional examples with two ACs (as already observed by Anderson 1972; cf. (11) below), as well as systematic discrepancies between possible ACs and CCs of *Auch* (in particular with respect to head categories; see section 2.3.1), which also argues against adjacency to the AC as a syntactically relevant notion.

7. Cases like (i)–(ii) (cited as counterexamples to this generalization by a reviewer, the intended AC in (i)–(ii) being *Napoleon*) seem unacceptable to us in the intended interpretation.

(i) Napòleon kam bekanntlich àuch mit nur drèi Stunden SCHLAF pro Nacht aus.
    As is well known, Napoleon, too, needed only three hours of sleep per night.

(ii) Auch Napòleon hat sich gelègentlich während einer Schlàcht ein Stündchen aufs OHR gelegt.
    Napoleon, too, used to sometimes take a one hour's nap during a battle.

(i) is grammatical in the reading in which *Schlaf* is the AC, whereas (ii) is totally out, since *Napoleon* being the CC of *Auch* must carry the NA (see section 2.5).

8 The most important cases showing this are coordination (cases like *Er sieht einen Film oder hört CDs* 'He is watching a movie or listening to CDs' would violate the condition that only constituents can be coordinated, unless it is the verbal trace that counts: *Er sieht_i [einen Film t_i] oder hört_i [CDs t_i]*), focus projection (unlike most types of leftward movement, verb movement has no influence on possible focus domains), and above all scope phenomena (with

respect to scope-taking elements the fronted finite verb always behaves as if it were in their scope, i.e. in final position, see Höhle 1988: 7). Since *Auch* (and so-called focus particles in general) are also scope-taking elements, data like (12) are certainly no surprise.

Note that this also holds for the so-called 'Verum' element (Höhle 1988, 1992), although this is associated with the left-peripheral verb position and not with the finite verb itself. Thus, cases like (i) where Verum functions as the AC of *auch* and necessarily precedes it, are not true exceptions to the regularities in question either.

(i) [Er WOLLte es nicht nur tippen,] er TIPPte es auch/HAT es auch getippt.
    He didn't only intend to type it, he did in fact type it.

Reconstruction comprises, of course, all kinds of finite verbs (main verbs as well as auxiliary verbs). However, as will become evident in section 3, only the reconstruction of the main finite verb counts as semantically relevant.

9 In these examples the material to the right of *auch* is totally AC-material (which is not necessary; cf. *er hat einen Anzug gekauft und dann seiner Mutter auch ein KLEID gekauft* 'he bought a suit and then he bought his mother a dress, too'). We shall keep to this option here, since what is important is only that there must be AC material to the right of *auch*.

10 In the following, we will refer to all clausal projections as CPs. The question whether CP is to be split up or whether all clauses correspond to the same functional projection is immaterial to our discussion.

11 In former analyses, initial *Auch* (i.e. *Auch* occurring all by itself in preverbal position) has often been set apart as belonging to a different category. But its obvious peculiarities regarding co-textual restrictions (a clause beginning with initial *Auch* must immediately follow the proposition(s) to which the *Auch* proposition is added, initial *Auch* may never bear the NA) can be derived as consequences of its syntactic position interacting with independent principles (concerning the AC/ID division of *Auch* clauses and focus assignment). Otherwise it fits into all *Auch* generalizations formulated in this paper. This is reason enough to assign it to the same category as the other occurrence of *Auch*'s considered so far.

12 Of course, there are complex ones like (i), which follow the usual regularities.

(i) Daß jemand mein AUto
    That someone my   car
    angefahren hat, hat mich AUCH
    hit   has, has me also
    geärgert.
    annoyed
    That someone hit my car, annoyed me, too.

13 This assumption is common (see also Hoeksema & Zwarts 1991), but rarely as explicitly stated as in Jacobs (1983: 104). (Although his analysis is formulated in a different framework, it is undeniably in the spirit of the 'AC movement' approach to post-posed particles, and subject to the same criticism.) On the whole, the tendency to take the priority of the 'unstressed particle > stressed AC' pattern for granted is coupled with either not dealing with the stressed variants of additive particles at all, or reconciling them *ad hoc* with the prevailing pattern of analysis by claiming that in the case of *AUCH, TOO*, etc. focus (lying on the AC) and stress (lying on the particle) are divorced (see *inter alia* König 1991a, b, 1993), which clearly presupposes a kind of 'AC movement' analysis. The only thorough study of the problems raised by this analysis of post-posed additive particles is Kowalski

(1992), which we will comment on below.

14 Regarding PRO, this is common knowledge. Concerning pro in imperative clauses, see Platzack & Rosengren (1998), where it is also maintained that this element does not move.

15 Note that (24)–(25) do not testify to an essential difference between *auch* and *AUCH* after all: as to (24), the impossibility of *[*auch* PRO] etc. follows from the fact that unstressed *auch* to the left of its AC is only licensed by an NA on its AC, which empty elements cannot realize. Concerning the fact that *auch* does not combine with + wh operator phrases (nor other SpecC operator phrases), no explanation has come forward yet (see Taglicht 1993: 1003), but the likely options for such an explanation seem all to be independent from the *Auch* variation.

16 In the eighteenth century immediate postposition of *auch* was still possible, cf. *Der üble Weg auch hatte ihn verdrießlich gemacht* 'the bad road, too, had made him moody' (Goethe, *Leiden des jungen Werther*, p. 145). This suggests that its degraded status in present-day German (see also Jacobs 1983: 99) as such has no systematic linguistic causes.

17 Including this example was motivated by an argument by M. Krifka (p.c.) in favour of a Kowalski-type analysis, which turned on examples involving weak pronouns.

18 That *Auch*, and focus particles in general, may take heads as its CCs is assumed in more surface-oriented analyses (see especially the treatment of so-called 'ad-adnominal' and 'ad-article' cases in Jacobs 1983: 64ff), but sometimes also assumed elsewhere with regard to verbs (see König 1993: 983). We concentrate on the verbal head because it is the only head that syntactically occurs all by itself; hence there could be no additional syntactic restriction preventing *Auch* from adjoining to it, if *Auch* were able to do so.

19 This positional restriction takes care of a number of much-discussed differences between *auch* and *AUCH* (see Schwarz 1991; Kowalski 1992: 66ff), and also of the distinctive specificity effects discussed in this connection, see (i):

(i) a. Theo hat auch {einige/keine}
Theo has also {a few/ no }
LIMericks gedichtet.
Limericks composed
Theo also wrote a few limericks/Theo didn't write any limericks either.
  b. *Theo hat {einige/keine}
Limericks AUCH gedichtet.

If we take into account in (a) that the position of indefinite DPs including their existential reading must be after *Nicht*/neg (possibly within the smallest VP, see Pafel 1995b), whereas the position before *Nicht*/neg induces the specific readings, (b) that the lowest possible position of *Auch* is before *Nicht*/neg—note that we are not talking about the higher negation position active in some clause types, see note 20—then it follows that *Auch* must precede an AC having the existential reading in the middle field, which rules out the stressed variant. (The fact that (ib) is out is a natural result of the object being specific, and *dichten* being an 'effective' verb: specific objects cannot be created more than once).

20 In some clause types, notably conditional clauses, the ordering *nicht* > *Auch* is acceptable, cf. *wenn nicht auch PETer zustimmt, /wenn Peter nicht AUCH zustimmt,* ('if Peter does not give his ok, too,'). Since there is probably no way around assuming a second negation position higher up in these clauses, this does not impinge on the above generalization. Cases like *Daß er nicht auch am Donnerstag gekommen ist, ist erstaunlich* ('that he didn't come on Thursday, too, is amazing') cited to us by a reviewer can most likely also be subsumed under this type of negation.

21 This is also the traditional view (most

explicitly formulated in Altmann 1976, 1978: 84ff). The alternative position maintained by Jacobs (1983: 40ff)—*Auch* takes only V projections (with the V2 clause also counting as such), which leads to V2 clause structures roughly like (i)—cannot be upheld for mainly two reasons (see König 1991a: 23ff; Bayer 1996: 19ff): (a) (i) violates the V2 constraint, for the CC of *auch* is not the preverbal constituent (moreover, this *auch* can also combine with exceptional 'second' preverbal constituents as in *Auch PEter aber/indessen wußte . . .* ('also Peter however knew . . .') showing that preverbal *auch* is not on a par with them), (b) the structure assigned to (i) by Jacobs wrongly implies that *auch*-AC patterns like (ii) should be good, for according to the structure in (i) the AC in (ii) is c-commanded by the *auch* in question. Note also that preverbal *auch* constituents may be the result of extraction (iii), which is also inexplicable under Jacobs' analysis, for extraction applies to just one constituent (whereas for Jacobs *auch nach Paris* would be a string of constituents). Obviously, the traditional syntactic analysis has no problem in either case. (Concerning a further argument from so-called thetic cases, see note 43).

(i) [v''' auch [v''' der NEUe Professor
     also   the new professor
   [v'' hat [v' schon ein Haus
     has   already a house
   gekauft.]]]]
   bought
   The new professor, too, has already bought a house.
(ii) *Auch der neue Professor hat schon ein HAUS gekauft / ein Haus geKAUFT.
(iii) Auch nach PaRIS, glaube ich,
     Also to Paris think I
   daß er fahren will.
   that he go wants
   To Paris, too, I think that he wants to go.

None the less, we think that there is a valid intuition behind Jacobs' position, which we propose to capture in terms of an independent division rule for *Auch* domains (see below), also taking care of the syntactic restrictions cited by Jacobs (1983: 45 ff) in support of his view.

22 This means that *Auch* also takes complementizer-introduced CPs as well as V2-CPs. Note that the initial Spec position may also be regarded as an adjunct position (cf. Kayne 1994).

23 Note that DP nominalizations may also contain *auch*; cf. *die Teilnahme/Verleumdung auch des Chefs* ('the participation/denouncing of also the boss'), although these are somewhat marked. More marked, though still at least half-way acceptable in many cases, are DPs like *Fotos auch von Peter* ('pictures also of Peter') or *das Haus auch des Chefs* ('the house of also the boss'), whereas *auch* within DPs like *der Inbegriff* (*auch) eines Genies* ('the epitome of a genius') are out. Since nominalizations correspond to propositions, and possessive phrases to predications, whereas [*Inbegriff* + XP] does neither, this is in keeping with what we observed above.

Note, too, that DPs like *Fotos* (?*auch*) *von Peter* are much better than *Fotos* (??*auch*) *Peters* ('pictures also Peter's'). This corresponds to PP attributes being much less cohesive than genitive attributes, which also shows up in their ability to undergo DP extraction; cf. *von Peter/*Peters habe ich* (*auch*) *Fotos gesehen* ('of Peter/Peter's have I pictures seen'). Since movement, as a rule, is a privilege of immediate constituents on predicate projection lines, this is again in keeping with the above.

24 Note that stressed *AUCH* does not cooccur with CPs, which are extended V projections; cf. (i):

(i) *AUCH [hat Paul Johanna auf den Aufsatz aufmerksam gemacht].

This, however, has a simple reason: as already pointed out above, *AUCH* can

only take ID material as its overt CC. In the case of (i) the whole clause would have to be ID material, which is communicatively unacceptable in itself and opens up no possibility to infer alternating ACs. Hence (i) is out.

25 Examples like these were cited by a reviewer as counterexamples to our claim that *AUCH* may not take straightforward DPs/PPs, etc. as CCs, but only projections that are predicatively used. As is evident from above, they are not counterexamples to our claim, but rather confirm it.

26 Note that stressed *AUCH* is licit in strictly clause-like projections only; in contrast to *auch* (see note 23), it never appears within DPs, not even in nominalizations. Cf. the counterpart to the example cited there: *die {Teilnahme/ Verleumdung} (*AUCH) seines Chefs* (*AUCH). We think that this is related to the fact that *Auch* may only be stressed, if its CC is a true predicative projection, which implies that the predicative head must always be in the CC. In the DPs in question this requirement simply cannot be fulfilled without violating others (in particular that there be an AC to the left in the same projection).

27 To these restrictions may be added the observation by Bayer (1996: 157ff) that PP objects of adjectives, which have their unmarked position to the left but may also be placed to the right of the adjective, are considerably worse in this position, if combined with *auch*.

(i) a. daß Peter unseres Erachtens
that Peter our opinion [gen.]
{auch auf seinen SOHN stolz//?stolz
{also on his son proud/ proud
auch auf seinen SOHN} war
also on his son} was
*that in our opinion Peter was proud of
his son, too*

Since movement in the middle field is always to the left, and *stolz (auch) auf*

seinen Sohn forms a constituent in the initial field, it is quite likely that this constituent is still a P projection. But then it is also quite likely that the same constraint outlawing *Auch* within PPs and DPs is at work here.

As for the remaining asymmetry concerning *Auch* + CP mentioned by Jacobs (1983: 47ff), see section 2.4.2.

28 The similarity between 'adsententials' and focus particles has already been clearly worked out by Jacobs (1983: 59); in fact it determines his analysis. What is missing in his analysis is that it does not pay attention to the syntactic difference between focus particles and those 'adsententials', which is, first and foremost, that focus particles take all kinds of XPs as CCs, whereas adsententials obey the additional condition that their CC must be a predicate projection.

29 See notes 23 and 26. Perhaps not all of the examples of focus particles within DPs, PPs, etc. that have come to light over the years (for an overview cf. Hoeksema & Zwarts 1991: 59ff and Bayer 1996) can be accounted for this way. But the remaining exceptions are often marginal (especially concerning *Auch* within PPs), and do not seem to follow a systematic pattern within a given language, nor has it been convincingly shown so far that language-specific differences in violations of (48) are a matter of linguistic principle rather than just convention.

30 For a critical review of the previous attempts by Jacobs (1983), Rooth (1985) and Bayer (1996) (which is a comprehensive version of his earlier work), see Hoeksema & Zwarts (1991: 59ff) and Kowalski (1992). Jacobs' and Rooth's approach is extensively reviewed in Bayer (1996: 19ff); see also note 21.

31 Note that our division rule will also exclude (53b) provided we subscribe to traditional theories of extraposition. Given Haider's (1993) theory of extraposition, however, which is not implausible, extraposed constituents are also

immediate constituents of the predicate projection line; thus by (48) extraposed *Auch* CPs should be syntactically acceptable.

32 Additional evidence is offered by the so-called thetic cases; see section 4.2.

33 Recall that the finite verb is always reconstructed (see section 2.1.1.1), thus counting as overt material.

34 The one apparent exception—thetic cases, where *Auch* takes a DP but the AC comprises the entire constituent—will be dealt with section 74.2.

35 This effect is apparently confined to negations expressed by matrix expressions embedding the *Auch* clause. As has been pointed out by a reviewer, discourse denials like in *Haus will AUCH kommen.—Nein, stimmt nicht* ('Hans, too, wants to come.—No, that's not true') are preferably read as denials of *p*. As for cases with clause internal negations like *ich bin erstaunt, daß Hans nicht AUCH kommen will* ('I am amazed that Hans doesn't want to come either') (see note 20), they are always read as denials of *p*. However, the fact that ±stress on *Auch* leads to different interpretations in one and the same negative environment remains, calling for an explanation. (Note that accounting for the 'denial of *q*' effect of the negation in (71) as metalinguistic negation, i.e. as denial that using the word *Auch* is appropriate will not really do: metalinguistic negation is always followed by an appropriate rewording of what was negated, cf. (i), which is not the case in (71)).

(i) A: Hans kommt vielleicht.
Hans comes probably.
Hans will probably come.
B: Nein, Hans kommt nicht vielleicht,
No, Hans comes not probably,
er kommt ganz sicher.
he comes quite certainly.
*No, Hans won't come probably,
he will most certainly come.*

36 Stressed modal particles and Verum focus might at first glance look like

counterexamples to the claim that implicated meanings cannot be focused. But on closer inspection, it turns out that what is focused in these cases are non-implicated meaning elements, too—see the descriptions of modal particles in Ormelius-Sandblom (1997) and the Verum element introduced in Höhle (1988, 1992) and identified with the declarative sentence mood operator (see *inter alia* Rosengren 1993a)—and thus accessible to focusing. (Being accessible to focusing does not imply being accessible to negation, as shown by the MPs, which due to their different function always take scope over the negation.)

37 Note that what we maintain is that these elements cannot carry the NA of the clause. This does not mean that they cannot carry an accent. Thus, *aber* in (70) may carry secondary stress, if the NA lies on *faul. Auch*, however, can carry the NA as the only accent of the clause.

38 It has been suggested to us (M. Krifka, p.c.) that ADD is not necessary since it is possible to derive the corresponding effects from the interaction between two components of the meaning of *Auch*: the assertion of *p* and the implicature of an existing alternative *q* to *p*. This may be so, but our argument was that independent evidence—focusing and negation—forces us to assume ADD anyway. Once available, it must of course be taken to be the carrier of the two meaning components in question.

39 Note that the meaning part of *Auch* which we assume to be ADD, is also a meaning part of other elements, in particular conjunctions like *und* (see section 3.1.2). But these conjunctions lack the rest of the meaning of *Auch*, which is that the addition must be to a proposition *q* in the same AS.

40 For further details we refer to the relevant literature as it is found in Jackendorff (1972), Gussenhoven (1984), Culicover

& Rochemont (1983), Selkirk (1984), Rochemont (1986), Uhmann (1991), Hetland (1992), Rosengren (1993b, 1994), Winkler (1997), and many others.

41 A further case where the function of focus is similar to that of MPs and *Auch* may be so-called Verum focus (see Höhle 1992, where a number of additional focus functions differing form the typical function of evoking alternatives are discussed).

42 As for *auch* being part of the focus domain, see the comment to (90) in the text.

43 Jacobs (1983: 89f, 1986: 125, note 21) has used examples like these as an additional argument that, given the c-command relation between *Auch* and its AC, clauses like these are V projections, which implies giving up the V2 constraint for German (see note 21). As we maintain above, it is just the other way around: we should not give up the V2 constraint, but the c-command condition on the *Auch*–AC relation.

44 Regarding accents on *Auch*, we had the opportunity to check through prosodically transcribed material (a transcript of a reading of 'Die Leiden des jungen Werther' containing 116 occurrences of *Auch*), for which we are indebted to Gregorz Dogil and his crew (University of Stuttgart). Our findings are fully in line with the views stated above: there are secondary accents on *Auch* having the specific functions in question; moreover, the distribution of utterance

meanings going along with *auch* vs. *Auch* predicted by our theory (see section 4.3) is by and large borne out.

45 As is well known, *Auch* also allows for scalar utterance meanings (Jacobs 1983: 149; König 1991a), but only in the case of unstressed *auch*; cf. (i) vs. (ii):

(i) Auch der Klassenprimus schrieb
    Also the class-primus wrote
    eine 5.
    a   5
    Even the best student in class got a D.
(ii) Der Klassenprimus schrieb AUCH
    The class-primus wrote also
    eine 5.
    a   5
    The best student in class got a D.

The scalar meaning in (i)—the best student of the class being the least likely to also get a D in the exam—is triggered by the lexical meaning of *Klassenprimus*, which suggests ordering the alternative values to which the AC belongs, on a scale. Since this meaning may only arise if the variable part is lying in the scope of *Auch*, this might constitute indirect evidence for positing two 'basic' utterance meanings, the scalar interpretation being naturally compatible with 'in addition' and incompatible with 'likewise', but we will not pursue the question here.

46 Much the same point concerning the semantics of *too* is made by Goddard (1986: 638f).

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