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Who Climbs the Grammar-Tree

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Marga Reis

The Category of Invariant *alles* in Wh-Clauses: On Syntactic Quantifiers vs. Quantifying Particles in German¹

1. Introduction

German wh-clauses often contain an invariant expression *alles*, which has two salient properties:

First, *alles* is related to the wh-phrase (its antecedent) in a quantificational way, cf. (1):

(1) Wen (*alles*) hat Hans besucht?

If *alles* is added, some kind of universal quantification takes place: the question is taken to imply that *all* the people visited by Hans must be identified in the answer, and moreover, that Hans visited a plurality of people. Without *alles*, wh-questions are not so understood: there is at most an existential implicature, and the answer(s) given must be true, but not necessarily exhaustive. Second, *alles* may appear in variable positions: either immediately adjacent to its antecedent or in various nonadjacent positions to the right, the quantificational effects always being the same:

(2) (a) Wen (*alles*) hat er (*alles*) gestern (*alles*) besucht?
 (b) Was (*alles*) für Leute (*alles*) hätte er denn (*alles*) dort (*alles*) treffen können?

Both these properties are shared by the universal quantifier *alle(s)* which belongs to the class of syntactic DP quantifiers that participate in so-called quantifier floating (QF),² cf.(3):

¹ I am indebted to the members of my Tübingen research group on wh-interrogatives as well as various audiences in Rendsburg, Stuttgart and Lund for valuable discussion of earlier versions of this study. Special thanks are due to H. Altmann, V. Molnár, J. Pafel, and I. Rosengren, whose comments and criticisms have clarified (and sometimes changed) my views in important respects. Thanks also to D. Le Claire and F.-J. d'Avis for much-needed technical assistance in preparing the final version of this paper.

² Regarding the nature of QF, I shall proceed from the by now standard position that nonadjacent positions of quantifier and antecedent are not a result of rightward 'quantifier floating', but - if a movement analysis is adopted at all - of leftward movement of the antecedent DP. For a recent account along these lines cf. Sportiche (1988), for its extension to German cf. Giusti (1990, 1991a), and, making use of the revision of Sportiche's account by Shlonsky (1991), Giusti (1991b). While this account may be criticized in various respects (see Bhatt (1990:211-213), Drubig (1991:52f.), see also the non-movement analysis of Pérennec (1988)), these criticisms are immaterial for the following discussion. - Regarding the scope of QF, what matters here are just the 'totality quantifiers' with definite antecedents (see below 2.2, 2.7), to which *alle(s)* belongs. There is no need to take a stand on the status of split constructions involving bare antecedents and quantifiers like *viele*, *einige* (cf. Fanselow (1988)), which have sometimes also been treated under the heading of QF, but may be instances of a different construction.

- (3) (a) (Allen) seinen Freunden (allen) hat er (allen) gestern (allen) Bescheid gesagt.
 (b) (Alles) das (alles) hat er (alles) gestern (alles) für uns (alles) mitgebracht.

Hence, it seems natural to treat the cases in (1-2) also as instances of this quantifier, - instances which lack agreement with their antecedent, but are otherwise unremarkable. This is exactly what we find in the literature on QF in German (Link (1974), Vater (1980), Reis/Vater (1980), Fehlich (1986), Kniffka (1986), Müller (1986), Pérennec (1988), Giusti (1990, 1991a)), even in the one case (Giusti (1991a)) where the syntactic properties of invariant *alles* are dealt with at some length. In other words, it is commonly presupposed that *alle(s)* as in (1-2) and (3) are instances of the same lexical item: the floating quantifier *alle(s)*, and that their different agreement behavior is a mere morphological quirk, on a par with the case of copular sentences with a predicate nominal, where floating invariant forms of *alle(s)* also occur:

- (4) (a) Hans, Fritz, Otto, Uwe sind schließlich alles Schüler von ihm.
 (b) Diese Typen da drüben sind alles Linguisten.

In this paper, I should like to argue that this view is mistaken. To this effect, I shall first present evidence (section 2) that invariant *alles* in wh-clauses (henceforth *I-alles*) and QF-cases involving *alle(s)* (henceforth *QF-alle(s)*) differ in so many syntactic and semantic respects that, in spite of the parallels mentioned at the outset, they cannot be instances of the same phenomenon. Hence, the assumption of categorial identity between *I-alles* and *QF-alle(s)* must be given up. This gives rise to the question, what the categorial status of *I-alles* could be, keeping in mind that not only the differences but also the parallels to *QF-alle(s)* have to be accounted for. The answer that I shall try to make precise and give substance to (section 3), is that *I-alles* belongs to a hitherto unrecognized class of quantifying particles with rather special properties. In the concluding section, I shall draw attention to the many questions this first attempt at descriptive adequacy concerning *I-alles* has to leave open.

2. Differences between *QF-alle(s)* and *I-alles*

2.1 Agreement?

Whereas *QF-alle(s)* typically agrees with its antecedent phrase, *I-alles* is always invariant. However, as should be pointed out from the start, this difference is not decisive, for invariant *alles* in copular sentences such as (4) will turn out to be bona fide instances of *QF-alle(s)* (see below 2.4). Still, being uninflected is a necessary property of *I-alles* (as for right-adjacent inflected cases of *all-* that seem to share some of the properties of *I-alles*, cf. Link (1974:106, 124 note 7) and below, 3.4, note 24).

2.2 Range of participating elements

Besides *all-*, the following quantifiers participate in QF in German: *beid-*, *sämtlich-* (for those speakers that treat *sämtlich-* as an adjectival quantifier, and not just as an adjective), *jed-*, QF of the latter being more or less restricted to the invariant form *jedes* (see Kniffka (1986:65), Fehlich (1986:89ff.)).

- (5) Die Kinder haben alle/beide/sämtliche/jedes schon ein Eis bekommen.
 But none of these may occur in wh-clauses replacing *I-alles*:

- (6) Wer hat alles/*beides/*sämtliches/*jedes schon ein Eis bekommen?

If *I-alles* is an instance of *QF-alle(s)*, then, obviously, the reasons for its uniqueness cannot be syntactic. However, semantics does not offer an easy way out either: Since *sämtlich-* virtually has the same meaning as *all-* (in terms of Reis/Vater (1980), it is not only [+distributive], but also [+total]), at least this quantifier should be semantically admissible, if QF were involved. Hence, it appears as if this difference between *I-alles* and *QF-alle(s)* could not be reduced to independent factors.

2.3 Focussing properties

Whereas *QF-alle(s)* may bear main stress, which means it may be minimally focussed, this is impossible for *I-alles*, cf. (7) vs. (8):

- (7) (a) Das hat er alles für dich getan. - Die Leute sind alle interessiert.
 (b) Das hat er ALLES für dich getan. - Die Leute sind ALLE interessiert.
 (8) (a) Was hat er alles für dich getan? - Wer ist alles interessiert?
 (b) *Was hat er ALLES für dich getan? - *Wer ist ALLES interessiert?

Since the possible focus-background structures of wh-clauses and declarative clauses are normally parallel (see Rosengren (1991)), there is again no way of systematically reducing this difference to the difference in clause type and/or antecedent phrase involved.

2.4 Modifying elements

While *QF-alle(s)* may combine with modifying elements that are typical for quantifiers: *fast (alle)*, *so gut wie (alle)*, *(alle) bis auf einen*, *I-alles* may not, cf. (9) vs. (10). On the other hand, *I-alles* may cooccur with 'nonexhaustive' *so* (an unstressed particle that indicates non-exhaustive listings/unexact descriptions in declaratives, and licenses nonexhaustive answers in wh-interrogatives), which is impossible with *QF-alle(s)*, especially if it is focussed.

- (9) Diese Kollegen möchte er fast alle/ *so ALLE kennenlernen.
 (10) Wen möchte er *fast alles/ so alles kennenlernen.

With this additional piece of evidence we have already sufficient criteria to identify invariant *alles* in copular sentences as instances of QF-*alle(s)*. As (4') shows, it may be stressed/focussed, it is interchangeable at least with invariant *beides*, and it may combine with modifiers such as *fast*, but not with nonexhaustive *so*.

(4') Diese Typen da drüben sind (*so) ALLES/beides/ fast alles Linguisten.

As can be easily verified, these findings are confirmed by the differences to be discussed in 2.5ff.: wherever structurally possible, invariant *alles* in copular sentences invariably sides with QF-*alle(s)* rather than with I-*alles*. Hence, it is certainly no accident that inflected *alle/beide* may be used interchangeably with *alles/beides* in this context, cf.(4''): in copular sentences, the uninflected forms are really no more than variants of QF-*alle(s)* (for additional observations on the use of uninflected *alles* in copular sentences, cf. Giusti (1991a:337ff)).

(4'') Diese Typen da drüben sind (*so) ALLe/beide/fast alle Linguisten.

2.5 Syntactic restrictions on admissible antecedents

As has already been observed by Link (1974:107f.) QF-*alle(s)* is often incompatible with PPs,³ and always incompatible with genitive DPs, as distant antecedents:

(12) (a) ?*Mit diesen Leuten hat er allen schreckliche Probleme gehabt.

(b) *Von diesen Studenten wurde er allen nachgeahmt.

(13) *Dieser Kollegen/*Unser hat er sich aller angenommen.

However, the corresponding wh-cases with I-*alles* are always good:

(14) (a) Mit wem hat er alles schreckliche Probleme gehabt?

(b) Von wem wurde er alles nachgeahmt?

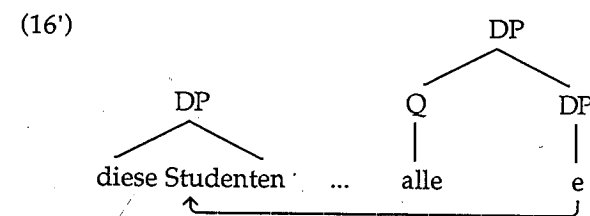
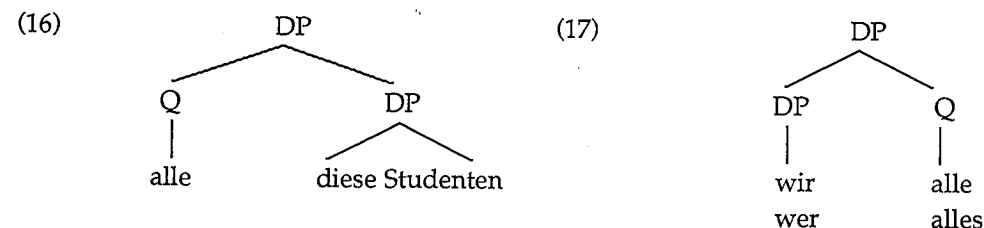
(15) Wessen/Welcher Kollegen hat er sich alles angenommen?

This shows that the ways in which QF-*alle(s)* vs. I-*alles* are structurally related to their antecedent phrase must be significantly different, otherwise the interaction with the same grammatical principles could not produce such different effects.

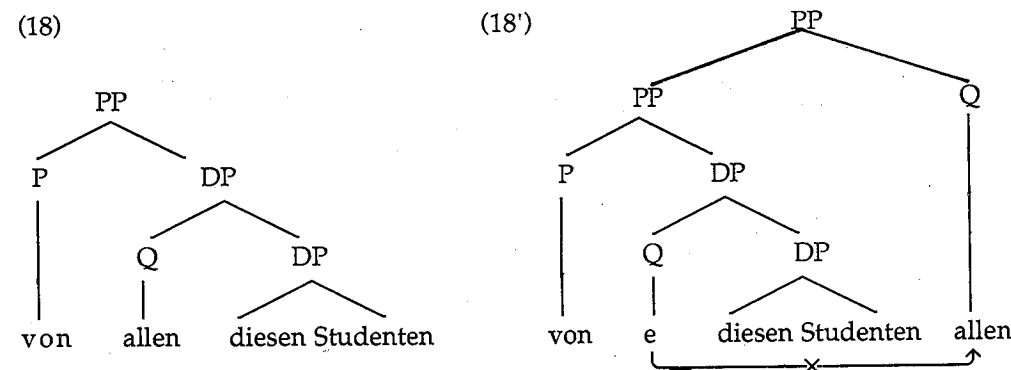
The only attempt I know of to come to grips with these contrasts, at least regarding the PP cases, is by Giusti (1991a:344f.). Following Sportiche (1988) in postulating adjacency for QF-*alle(s)* and its antecedent DP in deep structure, she tries to explain the difference between (12) and (14) by positing different base positions for *alle(s)* according to whether the

³ Acceptability judgements seem to vary with the preposition involved and its respective properties (the case it assigns, its being selected or not), albeit in ways that are as yet unclear (cf. also Giusti (1991a:332f.), Pérennec (1988)). There can be no doubt, however, that there are significant structural restrictions turning on the PP status every theory of QF has to account for.

'antecedent' DP is pronominal (Q right-adjacent) or not (Q left-adjacent), cf. (16) vs. (17); I-*alles* is of course subsumed under QF-*alle(s)*.



Extending Sportiche's account of distant QF constructions, which result from leftward movement of the DP, cf. (16'), to QF constructions involving PPs, the difference between (12) and (14) is then accounted for by appealing to the Left Branch Condition. This condition would always be violated by the necessary intermediate PP structure (18') to be derived from (18) in the case of (12), but would not be violated in the case of (14), where Q starts out on the right branch, cf. (17).



However, even disregarding that structures like (18') are not always unacceptable (cf. Link (1974:107)), this account clearly does not work. First of all, it cannot be extended to the genitive cases, cf. (13) vs. (15), where intermediate structures with rightward moving Q are as

unnecessary as with accusative and dative antecedents. Second, it is on the wrong track even in the PP cases, cf. (12'), (14'):

- (12') (a) ?*Mit uns hat er allen schreckliche Probleme gehabt.
 (b) *Von ihnen wurde er allen nachgeahmt.
 (14') (a) Mit was für Leuten hat er alles schreckliche Probleme gehabt?
 (b) Von welchen Leuten wurde er alles nachgeahmt?

As (12') and (14') show, constructions with QF-*alle(s)* are still ruled out, even if the PP-antecedent is pronominal, and constructions with I-*alles* are still ruled in, even if the antecedent wh-PP is nonpronominal.⁴ Hence, the contrasts between (12-13) vs. (14-15) cannot be explained as long as they are uniformly held to be instances of the same structural configurations. Rather, the reasons for the difference must be located in the different nature of QF-*alle(s)* vs. I-*alles* itself.

2.6 Syntactic-semantic restrictions on admissible antecedents

As is well-known, QF-*alle(s)* presupposes definite antecedent phrases, that is phrases that denote a set with its membership fixed in advance, cf. (19a) vs. (19b,c). This restriction also shows up with respect to relative clauses, where (contra Sportiche (1988:438)) QF-*alle(s)* fares well only with appositive relative antecedents, cf. (20a) vs. (20b), and forces the appositive interpretation for relative constructions that would otherwise be ambiguous, cf. (21).

- (19) (a) Die/Diese/Unsere/Pauls Studenten/Sie hatten alle eine Vorliebe für Syntax.
 (b) *Studenten hatten alle eine Vorliebe für Syntax.
 (c) *Keine/*Manche/*Viele Studenten hatten alle eine Vorliebe für Syntax.
 (20) (a) Diejenigen Studenten, die den Test ?*alle nicht bestehen, müssen ihn wiederholen.
 (b) Diese vier Studenten, die den Test alle nicht bestanden haben, ...
 (21) Die Fakultäten, die Vogt alle überprüfen will, richten sich auf sein Kommen ein.

As for I-*alles*, we have so far concentrated on occurrences with interrogative wh-phrase antecedents. However, although this is by far the most important class of possible antecedents, there are others: exclamative wh- and d-phrases, with I-*alles* typically in distant position, cf. (22-23), restrictive relative phrases (although much more marked), cf. (24), and, marginally, also wh-phrases appearing in 'unconditional constructions' (see Zaefferer (1991)), cf. (25).

⁴ This problem is recognized by Giusti, who tries to account for the different behavior of I-*alles* with respect to PPs by attributing it to the wh-feature of its antecedent (1991a:345). It is doubtful that this is more than a restatement of the facts, but if it is, it is refuted by PP-versions of examples such as (28-28') to be discussed below (2.7), in which QF-*alle(s)* has a wh-antecedent, too, cf. (i-i'):
 (i) *Von wessen Häusern habt ihr allen Aufnahmen gemacht?
 (i') Von wessen Häusern habt ihr alles Aufnahmen gemacht?

- (22) (a) Wen der nicht alles kennt.
 (b) Wo die schon alles gewesen ist.
 (c) Was für Leute der schon alles in Rezensionen verrissen hat.
 (23) (a) Die Leute, die der alles kennt.
 (b) Die Orte, wo/an denen der schon alles gewesen ist.
 (24) (a) ?Diejenigen Studenten, die alles den Test nicht bestehen, müssen ihn wiederholen.
 (b) ?Such die Ingenieure raus, die alles Cahuilla sprechen.
 (25) ?Was für Leute/Wen auch immer du alles zum Essen mitbringst, ich bin gerüstet.

Note that all these antecedents belong to a highly specific syntactic class: they are operator phrases that may appear in SpecC position (i.e. the initial position of finite verb final clauses). That this is a necessary condition for I-*alles* antecedents is borne out by the fact that I-*alles* is incompatible with XP antecedents that are excluded from SpecC position, cf. (26), no matter whether they are definite or indefinite, cf. (19'):

- (26) *Hans weiß, die/diese/unsere/Pauls/keine/manche/viele Studenten stets eine Vorliebe für Syntax hatten.
 (19') (a) *Die/*Diese/*Unsere/*Pauls Studenten/*Sie hatten alles eine Vorliebe für Syntax.
 (b) *Studenten hatten alles eine Vorliebe für Syntax.
 (c) *Keine/*Manche/*Viele Studenten hatten alles eine Vorliebe für Syntax.

This leaves as an interesting question what happens in the case of definite SpecC operator phrases. Applying Hawkins' notion of 'definiteness', by which a definite expression denotes a set that is identical to an 'antecedent set' independently given via discourse or situation (see Hawkins (1978, 1991), cf. also Enç (1991:9)), the only viable candidates are appositive relative pronouns/phrases, which, unlike all other XPs appearing in SpecC position, "semantically function as anaphoric pronouns/[phrases]" (Zimmermann (1991:264)). We have already seen in (20-21) that they are compatible with QF-*alle(s)*. In contrast, I-*alles* is next to incompatible with them, cf. (20'b), in any case much better with restrictive relative antecedents as in (24).

- (20') (b) ?*Diese Studenten, die alles den Test nicht bestanden haben, ...

This suggests the generalization that only indefinite SpecC operator phrases occur as antecedents of I-*alles*. In other words, I-*alles* antecedents do not correspond to (an expression containing) an anaphoric pronoun but to (an expression containing) a variable.

There is another type of SpecC phrases that has been called 'definite' in the literature: exclamative wh-phrases as in (22) and (27), which are definite in the sense that they refer to a uniquely identifiable set, the identity of which is known to the speaker (see Rosengren (1992:283)).⁵

⁵ Given the interchangeability of exclamative wh- and relative constructions, cf. *welche Ärzte der kennt - die Ärzte, die der kennt*, it will be obvious that this notion of definiteness is more like Russell's, underlying his term 'definite descriptions'. As for the relation between this and Hawkins' notion of 'definiteness', see Vater (1984:32ff.) and Hawkins (1991).

- (27) (a) Wen der kennt.
 (b) Von welchen Künstlern der Autogramme besitzt.
 (c) Wie ruhig es hier ist.

They are, however, not definite in Hawkins' sense specified above, in that there is no anaphoric or deictic/situational link to an independently established antecedent set. Since exclamative wh-phrases do allow for *I-alles*, cf. (22), it is obviously Hawkins' notion of definiteness that is relevant here, since it yields the generalization just cited.⁶

The respective restrictions on antecedents of *QF-alle(s)* vs. *I-alles* may accordingly be formulated as follows:

- (28) (a) *QF-alle(s)* requires that its antecedent phrase be definite, i.e. denote 'closed sets'.
 (b) *I-alles* requires that its antecedent phrase be indefinite, i.e. denote 'open sets', that is: *I-alles* is related to the variable expression that interrogative, restrictive relative, etc. operator phrases denote.

Obviously, (28) marks a decisive difference between *QF-alle(s)* and *I-alles*, which it is hard to imagine how to explain away.

2.7 Contrasts in antecedent relations

While the evidence presented in 2.1-2.6 shows that *I-alles* markedly differs from *QF-alle(s)*, there is still a credibility gap: *QF-alle(s)* and *I-alles* have so far only been observed in complementary distribution. This gap is closed by examining the rare cases in which *QF-alle(s)* and *I-alles* occur in the same environment, the best one being provided by wh-clauses with possessive wh-phrase antecedents, cf. (29-29'):

- (29) Wessen Bücher wurden alle von Reich-Ranicki schlecht rezensiert?
 (29') Wessen Bücher wurden alles von Reich-Ranicki schlecht rezensiert?

There is a clear contrast in the way *QF-alle(s)* and *I-alles* relate to the antecedent they apparently have in common: while *QF-alle(s)* is related to the antecedent phrase as a whole, *I-alles* is related to the possessive wh-specifier only. In other words, (29) and (29') do not ask the same thing: in (29) the question is about authors whose entire book production has been negatively reviewed by Reich-Ranicki (and there might be no more than one unlucky author

⁶ A further case calling for comment is provided by Pafel (1991:166-169), according to whom interrogative *wer/was*- and *welch*- phrases, all of which occur freely with *I-alles*, are definite, because they are said to behave exactly like noninterrogative definite DPs regarding word order and relative scope interaction. However, no matter which concept of definiteness is adopted, they do not constitute viable counterexamples. Regarding *wer/was*- phrases, Pafel's data seem too weak to support the conclusion (the word order contrasts (ibid.:167) are at best minimal, and could also be accounted for if *wer/was* were assumed to be indefinite interrogatives; as for scope properties, *wer/was*- phrases seem to be different from *welch*- phrases, and closer to indefinite NPs at that). Regarding *welch*- phrases, the data seem correct, but what is definite about them is arguably irrelevant for *I-alles*, cf. the discussion in 2.8 below.

like this), whereas (29') is about all the authors (and there is supposed to be a plurality of them) of books (one or more) that have been negatively reviewed by Reich-Ranicki, no matter whether other books by some such author exist and/or have been negatively or positively reviewed by Reich-Ranicki.

These facts can be brought into line with (28) as follows: possessive phrases such as in (29-29'), although they contain a possessor phrase which, according to (28b) above is indefinite, are, as a whole, still definite enough to allow *QF-alle(s)*. To see that this is not ad hoc, cf. the parallel non-interrogative indefinite cases in (30):

- (30) (a) Eines Kindes Träume können gar nicht alle in Erfüllung gehen.
 (b) Sogar eines Enkels zahlreiche Freundinnen mußte sie alle einladen.

Obviously, what makes them definite in the required sense is not the identity of the possessor phrase, but the possessive construction as a whole.⁷ Hence, a possessive wh-phrase is one of the rare cases, where one and the same syntactic phrase provides simultaneously a definite DP (the whole phrase) and a separately identifiable indefinite wh-DP (the possessor phrase), thus allowing (28a) as well as (28b) to be satisfied, albeit in different ways.

I-alles and *QF-alle(s)* exhibit the same difference in antecedent relations in the dialectal possessive dative construction, which may also appear in colloquial standard, cf. (31-31'):

- (31) Wem seine Bücher hat der Kerl alles verrissen?
 (31') Wem seine Bücher hat der Kerl alle verrissen?

⁷ This is much less obvious than has been commonly assumed in the literature (e.g. by Olsen (1989) and Bhatt (1990)). That possessive DP constructions are not invariably definite, has been argued by Zimmermann (1991:35ff.) on comparative grounds. But it is also true for German, where there are not only indefinite possessive phrases with the possessor phrase in postnominal position (*Bücher meines Sohnes, ein Geschenk Pauls*, etc.), but also indefinite possessive phrases with a prenominal possessor phrase, cf. the (in)definiteness effect in diagnostic right dislocation and *es*-structures illustrated in (i-ii) (see also Grimshaw (1990:55) for similar effects in English):

- (i) Wir haben sie belächelt, *?eines Kindes Träume/??die Träume eines Kindes/des Kindes Träume/die Träume des Kindes.
 (ii) Es wurden Spuren eines Kindes/eines Kindes Spuren/??die Spuren eines Kindes/??des Kindes Spuren gefunden.

This raises, of course, the question why (30) above is acceptable at all. A natural guess would be that 'specificity' is involved (in the sense of Enç (1991), in which indefinite noun phrases linked to a previously established set are 'specific'). However, considering the nonspecific nature of the respective DP in (30a), which is at least as good as the specific case (30b), and the fact that (i) is bad, although the indefinite DP is clearly specific, an explanation along these lines seems implausible. At present, there seems no way around concluding (a) that the (in)definiteness effects may be different in different domains, cf. (30) vs. (i-ii), (b) that a certain definiteness value must be attributed to the possessive construction as such, no matter how it is induced. While this leaves many questions unanswered, it does not impair the argument 2.7 is about.

Since their indefinite non-interrogative counterparts likewise admit QF-*alle(s)*, these effects can be made compatible with (28) in the same way as in the case of the standard possessive construction.⁸

These data constitute an insoluble dilemma for a uniform QF-analysis including I-*alles*: in bona fide cases of QF the distant quantifier always has a full, independent DP as antecedent, never a partial DP, which means it is always c-commanded by its antecedent-DP (see Sportiche (1988:432)), and this remains true even in cases with invariant Q-forms, cf. (32):

- (32) (also was Meier, Müller, Schubert, Schlägle, und Krotz angeht.)
 (a) [[*deren*]_i Kinder]_j haben jedes_{i/j} ein Eis bekommen.
 (b) [[*deren*]_i Kinder]_j sind alles_{i/j} Intelligenzbestien.

Hence, any syntactic-semantic theory of QF that does justice to this central fact about bona fide cases, must rule out the antecedent relations entertained by I-*alles* in (29'-31'), or vice versa. This shows beyond doubt, first, that QF-*alle(s)* and I-*alles* must be elements of different categories, and, second, since I-*alles* does not relate to its antecedent operator phrase as a surface syntactic category (cf. the irrelevance of pied-piped syntactic material in (29'-31')), that the categorial difference must be considerable. In other words: I-*alles* cannot just belong to a different subclass of the syntactic DP quantifiers.

2.8 Contrasts in meaning effects

This is not to deny that QF-*alle(s)* and I-*alles* are semantically similar in important respects: both have universal quantificational force and are furthermore distributive, both require accordingly that their antecedent DPs allow for a referentially plural interpretation.⁹ Hence, sentences like (33-33') are good, whereas sentences containing referentially singular antecedents (34-34') are out, likewise sentences containing referentially plural antecedents, if the group reading is required, as it is in (35-35'), where a paper jointly written by four authors (Brandt/Reis/Rosengren/Zimmermann 1992) is referred to. It is, moreover, obvious, how this characterization can be extended to cover wh-phrase antecedents in the case of I-*alles*, which

⁸ Note that the overt possessive pronoun does not by itself ensure or signal definiteness. If the possessive genitive phrases in (i) (see previous note) are substituted by the corresponding dative, the results are just as bad. - The same is true for the exceptional possessive construction involving preposed *von*-phrases (*von Hans die Bücher, von einem Freund die Bücher*), the interrogative counterparts of which, however, are too marginal to be used in this context of discussion. - As for *welch*-phrases as antecedents for I-*alles* vs. QF-*alle(s)* see the discussion in 2.8 below.

⁹ Regarding the differences in distributivity between *all*- und *jed*-, cf. the observations in Reis/Vater (1980:386ff.)

are frequently unspecified for number (potentially plural), and mass noun antecedents in the case of QF-*alle(s)* (uncountable, hence not singular either),¹⁰ cf. (36):

- (33) Diese Bücher hat er alle gelesen.
 (33') Welche Bücher hat er alles gelesen?
 (34) *Dieses Buch hat er alles gelesen.
 (34') *Welches Buch hat er alles gelesen?
 (35) *Diese Linguistinnen haben alle "Satztyp, Satzmodus und Illokution" geschrieben.
 (35') *Welche Linguistinnen haben alles "Satztyp, Satzmodus und Illokution" geschrieben?
 (36) Das Geld hat Müller alles bei Meyer abgeliefert.

Beyond these similarities, however, there are significant differences:

First, there is no I-*alles* counterpart to QF-*alle(s)* cases with mass noun antecedents, cf. (36) with (36'):

- (36') Was hat Müller alles bei Meyer abgeliefert?

(36') implies that Müller has handed over to Meyer a countable plurality of things; accordingly, an answer that consists only of *Das Geld* is inappropriate. Given (28), this difference comes as no surprise: since variable expressions cannot have the semantic properties of mass nouns, the requirement that the antecedent DP be plural and distributive is necessarily stricter in the case of I-*alles* than with QF-*alle(s)*.

Second, inasmuch as not only I-*alles* but also QF-*alle(s)* may have plural *welch*-phrases as antecedents, they refer to this antecedent in semantically different ways, cf. (37-37'):

- (37) Welche Bücher hat Max alles für die Prüfung gelesen?
 (37') Welche Bücher hat Max ?alle für die Prüfung gelesen?

While (37) containing I-*alles* is a question about the totality of individual books Max read for the exam, (37') containing QF-*alle(s)* can only be interpreted as a question about the subclass(es) of books all of which Max read for the exam (see also Sportiche (1988:438)). As a consequence, the respective appropriate answers also differ: suppose, for example, that (37-37') is asked in a situation in which Max has to read three books each on syntax, semantics, and phonology for a linguistics exam. An appropriate answer to (37) would have to be exhaustive (see section 1) but otherwise could list any (plural) subset of these nine books, including 'mixed lots' as in (38a,b). In contrast, an appropriate answer to (37') could only refer to natural subclasses as in (38') but need not list them exhaustively. As a consequence, due to the individual:subclass distinction, in a situation in which (38b) is an appropriate answer to (37), (37') could only be answered by (38'b/c). On the other hand, due to the different

¹⁰ Only neuter mass nouns, however, are possible antecedents (cf. Vater (1980:241); see also Pérennec (1988:96f.)). There is no convincing explanation for this restriction.

requirements on exhaustiveness, (38'b) and/or its more natural equivalent (38'c) may be an appropriate answer to (37') even in a situation where Max has read exactly the five books referred to in (38b), whereas in the same situation (37) could only be answered by (38b).

- (38) (a) Satzverschränkung im Deutschen, Semantic Structures, Wahr neben Falsch, Metrical Phonology.
 (b) Bausteine syntaktischen Wissens, Barriers, Satzverschränkung im Deutschen, Semantic Structures, Metrical Phonology.
- (38') (a) Die zur Syntax und die zur Phonologie.
 (b) Die zur Syntax.
 (c) Die zur Syntax, das ist ja sicher das einzige, was dich interessiert, hat er durch.

This difference also manifests itself in the fact that QF-*alle(s)* and I-*alles* may in principle (although uneasily) cooccur in the same question, cf. (39), which is a question about all subclasses of books Max has read in their entirety, with the understanding that there is more than one such subclass:

- (39) Welche Bücher hat Max denn alles für die Prüfung schon ?alle gelesen?

It should be possible to bring this difference into line with (28) and the relational difference between I-*alles* and QF-*alle(s)* with respect to possessive phrases noted in 2.7. As a first step in this direction let us try to paraphrase *welch-* clauses containing I-*alles* vs. QF-*alle(s)* in the usual way:

- (40) (a) Welche Bücher hat Max alles gelesen?
 (b) Welche Bücher hat Max ?alle gelesen?
- (40') (a) What are all x, x a book, such that Max has read x?
 'Name all the books which Max has read.'
 (b) What are the x, x a book, *such that Max has read all x*?
 'Name the books all of which Max has read.'

It will be obvious that, in order for (40b) to be a meaningful utterance, something must be done about the italicized part of its literal meaning (40'b). (This explains why *welch-* clauses containing QF-*alle(s)* are at best halfway acceptable.) What happens, apparently, is an accommodation such that a definite plural antecedent for QF-*alle(s)* is extracted from the restrictor phrase,¹¹ yielding roughly the following meaning:

¹¹ In other words, the question is interpreted as ranging over the sum objects denoted by the (definite) plural DP (for this interpretation of plural DPs cf. Krifka (1992)) contained in the *welch-* phrase. Note that, contrary to common belief (see i.a. Pesetsky (1987)), *welch-* is not inherently definite (or inherently 'discourse-linked'), cf. uses as the following, where no previously established set is referred to:

- (i) Welcher Idiot hat denn die Lampe montiert?

Consequently, the definiteness usually characteristic of *welch-* phrases must be a derived effect, which is largely based on the (denotation of the) NP *welch-* is in construction with (perhaps interacting with the entire construction itself). If so, the parallel to the *wessen* cases is even more apparent (see also the following note), and the claim that I-*alles* is incompatible with definite antecedents can be easily upheld.

- (40'') (b) What are the X, X a class of books, such that for all y, y a book and y in X, Max has read y?
 'Name the classes of books Max has read all members of.'

Note, moreover, that *welch-X*-phrases combining with I-*alles* allow an attributive paraphrase and disallow the partitive construction, cf. (40a-41), while with QF-*alle(s)* it is just the other way around, cf. (40b-41'):

- (41) (a) Welche Dinge, die Bücher sind, kennt Max alles?
 (b) ?*Welche der Bücher hat Max alles gelesen?
- (41') (a) ?*Welche Dinge, die Bücher sind, hat Max alle gelesen?
 (b) Welche der Bücher hat Max alle gelesen?

If we think of partitive questions like (41b), (41'b) as questions about a subclass of books, whereas attributive questions like (41a), (41'a) are about the subclass of entities that are books, then the parallel to the possessive cases may be drawn as follows: with QF-*alle(s)*, the definition of the set X the *welch-*question is about and QF-*alle(s)* quantifies over involves X=*Bücher* from the start, i.e. the syntactic antecedent wh-phrase as a whole, whereas with I-*alles*, *welch-* may be just associated with the set of entities which then are specified as 'Bücher'.¹²

While this needs more working out, it seems to be on the right track, cf. (42-42'):

- (42) *Welche drei Bücher hat er alles gelesen?
 (42') Welche drei Bücher hat er alle gelesen?

(42-42') are not questions about entities that are books, but about one triplet of books from the start. Hence, I-*alles* is out from the start, because its plurality restriction is violated, whereas QF-*alle(s)*, which can be accommodated to quantify over the three members of this subclass, is possible.

Let us note, finally, the most telling semantic difference of all: the meaning of QF-*alles(s)*, which can be focussed and modified, is part of the truth-conditional content, that is part of the asserted proposition in declaratives, and of the questioned proposition in interrogatives; as a consequence, QF-*alle(s)* may reappear in answers. In contrast, the meaning of I-*alles* is a conventional implicature: it may not reappear in the answers to wh-questions, and, if used in restrictive relative clauses, it does not add to the restriction itself.

¹² Paraphrases of *wessen*-cases containing I-*alles* vs. QF-*alle(s)*, in which the relevant parallels to *welch*-cases are brought out, are given in (i-i'):

- (i) (a) Wessen Bücher hat Max alles gelesen?
 (b) Wessen Bücher hat Max alle gelesen?
- (i') (a) What are all x, x a person, such that Max has read books of x?
 'Name all persons Max has read books of.'
 (b) What are the x, x a person, such that for all y, y a book of x, Max has read y?
 'Name the persons for whose books it is true that Max has read them all.'

Also, the meaning of *I-alles* may neither be focussed nor modified (see 2.2-2.3), which is typical for conventionally implicated meanings.

In sum: there are considerable differences in meaning effects between *I-alles* and *QF-alle(s)*. Since they cannot be reduced to different environments, this is final evidence that *I-alles* and *QF-alle(s)* in fact have to be assigned to different categories.

3. The category of *I-alles*

What then is the category of *I-alles*? I take it to be an undisputable fact of German noun phrase structure that there is some separate category of syntactic DP quantifiers, to which *QF-alle(s)* belongs.¹³ The behavior of *QF-alle(s)* as evidenced in 2.1-2.8 directly reflects the syntactic-semantic properties of this category. If so, the conclusion immediately following from 2.1-2.8 is that *I-alles* is not a syntactic DP quantifier. Still it is quantificationally related to DPs; hence, in determining its category, we must look for other types of elements that may bear such a relation. Since *I-alles* is uninflected, the only possible candidates are adverbs and particles. In the following, I shall argue that only the latter is a viable alternative.

3.1 *I-alles* : a quantificational adverb?

If *I-alles* were an adverb, we would expect it to behave like quantificational adverbs denoting totality such as *allesamt*, *samt und sonders*, *insgesamt*, *durchweg*, *ausnahmslos*, *vollzählig*, for these adverbs may quantify over DPs in various syntactic positions, even including PPs, cf. (43):

- (43) (a) Diese Vorschläge wurden samt und sonders/ausnahmslos/insgesamt/durchweg abgelehnt.
 (b) Die Studenten erschienen vollzählig.
 (c) Er hat unsere Vorschläge samt und sonders/ ... verworfen.
 (d) Von diesen Vorschlägen ist samt und sonders/ ... nichts zu halten.

However, there are a number of decisive differences. First, quantificational adverbs may be focussed and modified, their meaning clearly belonging to the truth conditional content of their clause:

- (44) (a) Die Vorschläge wurden AUSnahmslos abgelehnt.
 (b) Die Studenten waren nicht/fast vollzählig erschienen.

Second, they may not appear in the typical *I-alles* position within the DP they quantify over:

¹³ S. Vater (1984). For a recent (and to my mind convincing) discussion of the phrase structural properties of this class, cf. Giusti (1991b). In order to avoid misunderstandings, I always refer to this class of so-called quantifiers as 'syntactic quantifiers'.

- (45) Was (*ausnahmslos) für Studenten (*ausnahmslos) würde man empfehlen können?

Third, in the case of complex wh-phrase antecedents, they relate to the antecedent phrase as a whole, just like *QF-alle(s)*, and not to the possessor phrase, as does *I-alles*, (cf.2.7):

- (46) Wessen Kinder haben samt und sonders/ausnahmslos/ ... bei Max Unterricht?
 Likewise, if the quantificational adverbs are distributive (which, for example, *insgesamt* is not), they relate to *welch-* phrase antecedents like *QF-alle(s)* rather than *I-alles*, (cf.2.8):

- (47) Welche Vorschläge fanden ausnahmslos keine Zustimmung?

Fourth, although there are configurations like (48), in which the wh-phrase is said to be quantified by the adverb of quantification in the matrix clause above it (see Berman (1991)), *I-alles* does not act this way, as shown by its cooccurrence with other adverbs of quantification in these configurations, and the corresponding reading, cf. (49):

- (48) Hans dürfte ausnahmslos wissen, wen Susi eingeladen hat.
 = 'Für alle, die Susi eingeladen hat, dürfte Hans wissen, daß Susi sie eingeladen hat.'
 (49) Wer schon alles dürfte meistens wissen, wen Susi eingeladen hat (- ihr wißt schon, wer: natürlich Max, Fritz und Lilo.)¹⁴
 = 'Für alle, die Susi eingeladen hat, dürften Max, Fritz und Lilo meistens wissen, daß Susi sie eingeladen hat'.
 = 'Für die meisten, die Susi eingeladen hat, dürften Max, Fritz und Lilo wissen, daß Susi sie eingeladen hat'.

In sum: if anything, there is a clear overlap in crucial semantic properties between quantificational adverbs and *QF-alle(s)*. The syntactic and semantic properties of these adverbs and *I-alles* are way too different to put them into the same category. This leaves only one possibility: *I-alles* must be a particle with quantificational force.

3.2 *I-alles* : a quantifying particle

We can give substance to the claim that *I-alles* is a particle by taking a well-established particle class such as modal particles as a paradigm case of particle behavior. Syntactically, the main characteristics of modal particles (as of other particle classes) is that they fall outside the X-bar schema, which means (i) they cannot be modified or expanded (although there can be a combination of them), (ii) they are not maximal, which bars them from canonical XP

¹⁴ In order to make comparison possible, I have forced a rhetorical, hence assertive reading for the wh-*alles* construction (which, due to the quantificational force that *I-alles* has over its antecedent, is necessarily specific). (One of the problems inherent in Berman's approach is that it cannot easily be extended to cases where the matrix clause has a bona fide nondeclarative interpretation.)

positions (such as the 'initial field' in verb-second clauses). Rather, (iii) modal particles appear in special ('clitic') positions, which are primarily (a) the right margin of the so-called 'Wackernagel position', their base position, but also (b) the position right adjacent to the wh-phrase in the initial field. Semantically, the property that is specific to modal particles is (iv) that they convey 'modal meanings', i.e. they have functions pertaining to sentence mood, discourse, and communication situation in general. The general property, which extends also to other particles (for example, to the so-called 'focus particles') is (v), that their meanings do not figure in the truth-conditional content of the proposition, but rather as implicatures. Likewise, (vi) the content of modal particles as such cannot be focussed/accented, unless exceptional conditions of interaction with sentence mood obtain.¹⁵ Moreover, to add first things last, (vii) they are uninflected.

It will be obvious that *I-alles* shares almost all of these properties, which are, one the whole, general particle properties: (i), (ii), the (b)-part of (iii), (v), (vi), (vii). Hence, by comparing it with modal particles, most properties of *I-alles* fall out as characteristic particle properties.

Naturally, *I-alles* is not a modal particle (hence (iv) does not apply), but a quantifying particle with a distinctive property: it quantifies over variable expressions denoted by operator phrases. As such, it is not unique, cf. quantifying elements such as *genau*, *exakt*, *ungefähr*, *allein*, *so*,¹⁶ which also take operator phrase antecedents, cf. (50), and share at the same time other salient properties of *I-alles*: they appear in the right-adjacent position to their antecedent as well as in the distant positions, cf. (50), which they may do in various combinations, cf. (51), (thus completing the parallel to modal particles with respect to (i)), and they also share the most critical properties of *I-alles*, including the diagnostic relational effect with possessive phrase antecedents, cf. (52), and the impossibility of modification and focus, cf. (53), which underlines that their contribution to sentence meaning is by way of implicature.

- (50) (a) Was (*genau/exakt/ungefähr*) wird eigentlich (*genau/exakt/ungefähr*) gemacht?
 (b) Was (*allein*) für Leute (*allein*) kommen (*allein*) dafür (*allein*) in Frage?

¹⁵ Regarding accented modal particles, see Ormelius (in prep.), and Meibauer (1992:Kap.3).

¹⁶ I am neither claiming that this list is exhaustive (cf. elements and phrases such as (*wer*) *sonst/außer ihm*, etc.), nor that the properties of the items listed are totally identical: in the absence of any detailed studies of these elements in this perspective, I simply do not know. In fact, it may well turn out that some of the items form (or belong to even cross-cutting) subclasses. - This still leaves open the possibility that members of the same particle class have idiosyncratic properties. This might be claimed, for example, for the absence of *so* from the 'clitic' position in (50c), see also 3.4, or for *überall*, which optionally substitutes for *I-alles* in locative phrases and shows a preference for distant position. Given the fact that even the rather well-established particle classes (focus particles, modal particles) are beset with idiosyncrasies, this option can never be ruled out.

- (c) Mit wem (?*so) habt ihr denn (so) in der Kneipe (so) gesprochen?
 (51) (a) Womit alles hat er sich denn so beschäftigt?
 (b) Mit welchen Leuten genau hat er sich denn so alles beschäftigt?
 (52) (a) Wessen Bücher genau habt ihr denn für die Prüfung lesen müssen?
 (b) Wessen Bücher kommen denn so/genau als Lesestoff in Frage?
 (53) (a) *Was sehr genau/ganz ungefähr wird eigentlich gemacht?
 (b) *Womit (geNAU) hat er sich (geNAU) beschäftigt?
 [* in the relevant meaning of *genau*]

Obviously, these elements overlap with *I-alles* in crucial properties that are typical particle properties at the same time, thus allowing to set up a class of 'quantifying particles'. If so, the claim that *I-alles* is a quantifying particle is a rather substantial descriptive claim.

Taking a closer look at the relationship between *I-alles* and the other quantifying particles, we note that *genau*, *ungefähr*, etc. (but not *so*) may also occur with non-operator phrases, cf. (54):

- (54) (a) Genau/ungefähr/exakt/allein diese Bewerber ziehen wir in Betracht.
 (b) Auf genau solche Fälle/exakt drei Fälle stützt sich seine Behauptung.

Since these phrases must be focussed, it is obvious that *genau*, *ungefähr*, etc. act as focus particles in these cases (as 'Gradpartikeln' of the sort discussed in Altmann (1978), cf. also König (1991)). Clearly, these uses of *genau/ungefähr* are related to their uses with operator antecedents, suggesting that *I-alles* and *so* form a subclass of quantifying particles of their own. It does *not* suggest, however, that there is no special class of quantifying particles at all, for in cases like (50-52) *ungefähr*, *genau*, etc. do not act as focus particles: the operator phrase antecedent need not be (and as a rule is not) focussed, cf. also (55), right-adjacent position of the particles is perfectly possible, and distant position more or less all right, whereas with non-operator antecedents both are in any case worse, and frequently questionable, cf. (56-56'):

- (55) Wen genau/ungefähr würdest DU in Betracht ziehen?
 (56) (a) ?Diese Bewerber genau/ungefähr ziehen wir in Betracht.
 (b) ?Auf solche Fälle genau hat sich seine Behauptung gestützt.
 (56') (a) ??Diese Bewerber ziehen wir genau/ungefähr in Betracht.
 (b) ??Auf solche Fälle hat sich seine Behauptung genau gestützt.

This shows that appearing in a quantificational relationship with operator phrase antecedents constitutes a 'particle class function' of its own. We shall see in the following section that the locus where this class function originates is the clitic DP position.

Before taking up this issue, a final remark concerning quantifying vs. modal content of particles is in order. Since quantifying particles most frequently occur with interrogative and exclamative operator phrases, which both strongly interact with sentence mood, it comes as no surprise that they also may get involved in modal and discourse functions. Thus, in universally quantifying over the variable expression in unembedded wh-interrogatives, *I-alles* also gives rise to the implicature that the answer must be exhaustive, and, furthermore, that there should be more than one true answer. This automatically excludes that the negative

answer is among them. As a consequence, wh-questions containing *I-alles* always implicate not only that there is an *x* fulfilling the interrogative proposition, but that there is more than one (which in most contexts is strengthened to 'many'). This in turn leads to specific effects, when *I-alles* is employed in rhetorical questions or exclamatives.¹⁷ Much the same is true for the other quantifying particles (the implicatures varying, of course, with the respective quantificational force). But this does not make them modal particles, of course, for these effects can be derived from their basic quantifying function as indicated. Note also that *I-alles/so/genau*, etc. occur as uninhibited in embedded wh-clauses as in unembedded ones, which is by no means true for modal particles, cf. (57). This is conclusive proof that modal and quantifying particle function must be kept strictly apart.

- (57) (a) Heutigen Eltern ist egal, mit wem ihre Kinder alles/genau/so verkehren.
 (b) Heutigen Eltern ist egal, mit wem *denn/*nur/*schon ihre Kinder verkehren.

3.3 *I-alles* : a quantifying wh-phrase clitic

It is clear from the preceding section that quantifying and modal particles are different kinds of particles. What we shall have to ask now is what exactly the difference consists of. Could it be that the difference is just semantic - modal particles contributing a modal implicature, quantifying particles a quantificational implicature, with all else being the same? The answer is no, as can be shown by carefully examining their positional behavior.

At first glance, modal and quantifying particles seem to have the same positional options: both occur adjacent to operator antecedents in the initial field, both appear in variable positions in the middle field, cf. the apparently parallel distribution of *I-alles* and *denn* in (58-58')

- (58) Was (denn) für Leute (denn) hat er (denn) damals (denn) bei dir (denn) treffen wollen?
 (58') Was (alles) für Leute (alles) hat er (alles) damals (alles) bei dir (alles) treffen wollen?

At second glance, however, there are decisive differences.

We observe, first, that quantifying particles occur freely as wh-phrase clitics, no matter whether the wh-phrase is in the initial position of verb-second or verb-final clauses, cf. (59). This is true for Standard German and dialects alike. In contrast, the occurrence of modal particles in this position is highly marked in verb-second clauses, and practically impossible in

¹⁷ The effect of *I-alles* on exclamatives is insightfully discussed in Rosengren (1992:291ff.). As for rhetorical questions, as well as for the derivation of the respective implicatures in general, see Reis (in prep.).

verb-final clauses, cf. (59'); in dialects, the occurrence of modal particles as wh-phrase clitics is practically ruled out altogether (cf. Brandt/Reis/Rosengren/Zimmermann (1992:75-77)).

- (59) (a) Wen (alles) hat er (alles) ans MIT geschickt?
 (b) Man fragte ihn, wen (alles) er (alles) ans MIT geschickt habe.
 (59') (a) Wen (?schon/?denn) hat er (schon/denn) ans MIT geschickt?
 (b) Man fragte ihn, wen (*?schon/*?denn) er (schon/denn) ans MIT geschickt habe.

Second, the positional options of modal particles in the middle field depend on focus-background-structure: all material intervening between the Wackernagel position and the modal particle must be unfocussed. As a consequence, sentences such as (60) are not good. Exactly parallel sentences containing *I-alles*, however, are unobjectionable, cf. (60')

- (60) (a) ?*Was hat er heute dem CHEF denn von dem Krach erzählt?
 (b) ?*Wo hat ihm FRANZ gestern denn Fehler nachgewiesen?
 (60') (a) Was hat er heute dem CHEF alles von dem Krach erzählt?
 (b) Wo hat ihm FRANZ gestern alles Fehler nachgewiesen?

On the other hand, *I-alles* seems to be unacceptable in the position it occupies in (61), where-as a modal particle is allowed there, cf. (61')

- (61) *Wen hat er der Prüfung alles HEUTE ausgesetzt?
 (61') Wen hat er der Prüfung denn HEUTE ausgesetzt?

Obviously, the distribution of modal and quantifying particles in the middle field is governed by different regularities: the distribution of modal particles is best explained by positing the right margin of the Wackernagel position as their base position, over which other constituents can scramble (for a more detailed discussion of this hypothesis, cf. Brandt/Reis/Rosengren/Zimmermann (1992:71ff.)). Since focussed constituents do not scramble,¹⁸ this accounts for all the ordering facts of modal particles presented in (58-61') (the prediction for (58) being that the various versions are good if the main stress is located either on constituents preceding the middle field proper, or on constituents following the modal particle in its respective position).

In contrast, the distribution of quantifying particles seems to correspond to the positional possibilities of the antecedent wh-phrase, which include (a) its base position, in which it may

¹⁸ For this restriction, which goes back to Lenerz' (1977) 'rheme condition', cf. von Stechow/Sternfeld (1988:466), Grewendorf/Sternfeld (1990:15), and Fanselow (1990:115ff.). A weakened version of this restriction allowing for minimal focus on scrambled phrases is adopted in Geilfuß (1991:23), but, as far as I can see, it is not borne out by the facts. Note that elements moved to the Wackernagel position may be focussed (including full NP subjects that may precede personal and reflexive pronouns). At least from the perspective of focus-background structure, it seems plausible, then, that this movement does not belong to scrambling at all.

be scrambled over, (b) all the positions it may reach by scrambling itself.¹⁹ In other words: *I-alles* in the middle field seems to be licensed by an adjacent *wh*-trace of its antecedent. This generalization, which has first been suggested by Pafel (1991) (without, however, taking a stand on the status of *alles*), covers all the *I-alles* data presented above (with no focussing restrictions on (58'), excepting perhaps *bei dir*), in particular the ungrammatical case (61): with *aussetzen*, the basic order is accusative object > dative object, which even under favorable scrambling conditions (main stress on the accusative, relative weight of accusative constituent, for example) can hardly be reversed. Hence, *I-alles* in (61) is in a position, which it can neither have reached by scrambling, since scrambling is always leftward, nor by having been scrambled over by the dative object, which in this particular case is disallowed. As is to be expected, an overt *wh*-phrase in this position is also impossible, cf. (61''):

(61'') *Wer hat der Prüfung wen (alles) HEUTE ausgesetzt?

Let us assume, then, that Pafel's generalization is basically correct. If so, two conclusions can be drawn. First, the base positions of modal and quantifying particles are different. Hence, the difference between these classes must also be syntactic. Second, the base position of quantifying particles must be a clitic position right adjacent to the operator phrase, otherwise the observed distribution would not make sense. If so, we must assume that there are (optional) clitic base positions to the right of *wh*-phrases, in which quantifying particles can be base-generated. In other words, quantifying particles are *wh*-phrase clitics from the start.²⁰ As a consequence, modal vs. quantifying particle clitics to *wh*-phrases in the initial field would be accounted for in different ways: a quantifying particle would get there by being (optionally) pied-piped along with its host *wh*-phrase. A modal particle, however, being base-generated in a different position, would have to undergo an extra process of cliticization to the *wh*-phrase it appears with. As to how and where this process takes place, there is not much evidence to make use of: multiple question cases such as (62) show that modal

¹⁹ Following Fanselow (1990:116-118), it has frequently been claimed that *wh*-phrases do not scramble, see von Stechow/Sternefeld (1988:466), Grewendorf/Sternefeld (1990:14). The data used to support this claim, however, are on the whole unconvincing (thus, Fanselow's main example **wie hat was der Mann gestern repariert?* (ibid. p.117) is already out for a more general reason: no object may scramble over subjects in this case). As far as I can see, if factors like accent/focus, definiteness, grammatical status, heaviness of the constituents involved and other factors known to influence scrambling are carefully controlled, *wh*-phrases behave just like comparable phrases in the middle field with respect to scrambling. See also Geilfuß (1991:29ff.).

²⁰ Calling them clitics is motivated by two criteria: they are subcategorized to attach to specific types of syntactic phrases, their 'hosts', and they must show liaison with them (see Spencer (1991:377), following Klavans (1985)). What is unusual about 'quantifying particle clitics' is that they may remain attached to a phrasal host position that is phonologically empty.

particles can also cliticize in the middle field (although the results are highly marked), and there is some indication that they cannot be left behind, cf. (62'a), where the position of the second *wh*-phrase by itself is legitimate, cf. (62b).

- (62) (a) Wer schon hätte damals wen schon fürchterlich ernstgenommen?
 (b) Wer schon hätte wen schon damals fürchterlich ernstgenommen?
 (62') (a) ?*Wer schon hätte wen_i damals t_i schon fürchterlich ernstgenommen?
 ↑ ?*

If so, modal particles either cliticize to their host *wh*-phrase in the middle field before *wh*-movement, and obligatorily pied-pipe along, or they cliticize to their host *wh*-phrase later on (in Surface Structure or Phonetic Form). In order to decide between these hypotheses, one would have to check the behavior of modal particles with respect to *wh*-phrases that are base-generated in initial position but, unfortunately, the evidence from the scope-marking *was*-construction, as the only case in point, is far from conclusive:

- (63) (a) Was meint er denn??Was denn meint er, wer die Wahl gewinnt?
 (b) ??Was wird er schon meinen/*Was schon wird er meinen, wer die Wahl gewinnt?

All we know for sure, then, is that modal particles can only be cliticized to overtly realized *wh*-phrases. This by itself, however, is a considerable difference to quantifying particles. Note, moreover, that the *I-alles* cases parallel to (62) are perfectly acceptable, likewise the ones parallel to (62'), whereas *I-alles* relating to the scope-marking *was* is squarely ruled out, cf. (64) vs. (65):

- (64) (a) Wer alles hat damals wen alles fürchterlich ernstgenommen?
 (b) Wer alles hat wen alles damals fürchterlich ernstgenommen?
 (64') (a) Wer alles hat wen_i damals t_i alles fürchterlich ernstgenommen?
 (65) (a) Was meint er, wer alles in Betracht kommt.
 (b) *Was alles meint er/*Was meint er alles, wer in Betracht kommt.

This confirms that in fact two different cliticization phenomena, based on different base positions, are involved, thus also confirming that modal and quantifying particles are syntactically different categories.

3.4 Defending the analysis

While the conclusion that modal and quantifying particles are syntactically different categories seems to be established beyond doubt, the particular clitic analysis given for quantifying particles in 3.3 still has to face at least two problems.

The one problem is (at least according to the intuitions of some speakers) the existence of apparent counterexamples to Pafel's generalization concerning nonadjacent *I-alles*. *I-alles* may appear in certain positions of the middle field under conditions in which the respective

wh-phrase is much worse or disallowed: (a) in the position immediately adjacent to the Wackernagel position, cf. (66-66'); (b) in the position immediately preceding the non-scrambling elements in the rightmost position(s) of the middle field, cf. (67-67') and (68-68'):²¹

- (66) Welche Politiker/Wen HAT denn alles Karl so verleumdet?
 (66') ?*Wann HAT denn welche Politiker (alles)/wen (alles) Karl so verleumdet?
 (67) Wer hat denn die Mutter im Krankenhaus alles beSUCHT?
 (67') ?*Wann hat denn die Mutter im Krankenhaus wer (alles) beSUCHT?
 (68) Wer hat denn die Mutter damals alles nach Hause beGLEItet?
 (68') ?*Wann hat denn die Mutter damals wer (alles) nach Hause beGLEItet?

It seems that these asymmetries can only be accommodated by assuming an exceptional movement of *I-alles* in the case of (a), and an exceptional tolerance of *I-alles* towards being scrambled over in the case of (b). On a more general level, however, these exceptions are not really ad hoc but rather in tune with the present analysis. As for (a), note that the exceptional movement looks like movement to the modal particle position, not just exceptional scrambling of object-related *I-alles* over the subject, cf. the ungrammaticality of (69-69'). In other words, the exceptional movement seems to be licensed by the properties that modal particles and quantifying particles have in common, which most likely is their clitic property. If so, (a) testifies to a cliticization process, with *I-alles* cliticizing to the right of bona-fide modal particles.

- (69) *Welche Politiker/*Wen hat denn mit an SICHerheit grenzender Wahrscheinlichkeit alles Karl verleumdet?
 (69') *Wann hat denn mit an SICHerheit grenzender Wahrscheinlichkeit welche Politiker/wen (alles) Karl verleumdet?

As for (b), this exceptional tolerance towards scrambling is only possible, as long as no focused material is scrambled, cf. (70), which is, of course, exactly parallel to the condition modal particles in the same position are subject to (see 3.3). Note also that in this exceptional position, *I-alles* may cooccur with modal particles, but must be ordered after them, cf. (71). This, too, is most easily understandable on the basis of the exceptional movement process underlying (a) that makes *I-alles* part of a specific particle sequence, thus confirming that (b) is also a typical form of particle behavior.

²¹ As is to be expected, corresponding QF-*alle(s)* and its antecedent may not appear in these positions either, cf.

- (i-ii'), thus adding to the evidence presented in section 2 that *I-alles* and QF-*alle(s)* are indeed distinct.
 (i) ?*Diese Politiker/Sie HAT ja alle Karl so verleumdet.
 (i') ?*Damals HAT ja alle diese Politiker /sie alle Karl so verleumdet.
 (ii) (a) ??Die Skatfreunde haben die Mutter im Krankenhaus alle beSUCHT.
 (b) ??Die Skatfreunde haben die Mutter alle nach Hause beGLEItet.
 (ii') (a) *Dann haben die Mutter im Krankenhaus alle die Skatfreunde beSUCHT.
 (b) *Dann haben die Mutter alle die Skatfreunde nach Hause beGLEItet.

For related observations, see Geilfuß (1991: 54).

- (70) (a) ?*Wer hat denn die Mutter im KRANKEnhaus alles besucht?
 (b) ?*Wer hat denn die MUTTER damals alles nach Hause begleitet?
 (71) (a) Wer hat die Mutter im Krankenhaus denn alles/?*alles denn beSUCHT?
 (b) Wer hat die Mutter damals denn alles/?*alles denn nach Hause beGLEItet?

What we find, then, is a kind of mirror image relation between modal and quantifying particles. Whereas modal particles originate in the right margin of the Wackernagel position, that is as VP- or I-projection clitics, and exceptionally appear as wh-phrase clitics, with quantifying particles it is just the other way around. I should like to interpret this in the way already indicated: on the one hand, modal and quantifying particles are alike in being clitics, a property not regularly shared by other particle types; this accounts for their being able to appear in the same positions. On the other hand, their behavior with respect to these positions is different, which is in line with the assumption of different base positions for modal vs. quantifying particles (see 3.3 and below). If taken this way, the ordering possibilities of *I-alles* extending beyond Pafel's generalization are satisfactorily accounted for.

The other problem one might raise against analyzing quantifying particles as wh-phrase clitics is exemplified by *so*, and has already been illustrated in (50c) above: while *so* undoubtedly is a quantifying particle related to wh-phrases, it does not freely appear in the position immediately adjacent to them, cf. (50c) above and (72), thus lacking the most typical feature of wh-phrase clitic behavior. Cases like (72') are no evidence to the contrary, for the real wh-phrase clitics in these cases are *I-alles* and *zum Beispiel*, cf. (72''), which *so* has combined with and is dependent on:²²

- (72) ?*Wen so könnte man sich auf diesem Posten vorstellen?
 (72') Wen so alles/Wen so zum Beispiel könnte man sich auf diesem Posten vorstellen?
 (72'') Wen alles/Wen zum Beispiel könnte man sich auf diesem Posten vorstellen?

What *so* does seem to share, however, is the characteristic positional pattern of quantifying particles in the middle field (see Pafel (1991)), which means that *so* apparently cliticizes to wh-traces.

As far as I can see, we have to acknowledge these facts as they are. We do not have to acknowledge, however, that they constitute a serious problem: (i) *so* is about the only quantifying particle exhibiting this behavior, which suggests that lexical idiosyncrasy is at stake (see

²² The same kind of dependency is exhibited by *nicht*, cf. (i-ii), which, however, is not a quantifying particle.

Regarding the exclamative interpretation forced by pied-piped *nicht alles* as in (iib), cf. Rosengren (1992).

- (i) *Was nicht hat er sich (alles) nehmen lassen.
 (ii) (a) Was hat er sich nicht alles nehmen lassen.
 (b) Was nicht alles hat er sich nehmen lassen.

also note 16);²³ (ii) the distribution of *so* in the middle field does allow to treat it as basically a wh-phrase clitic, the idiosyncrasy thus being restricted to the impossibility of pied-piping; (iii) comparable idiosyncrasies involving distant vs. adjacent position show up in some other cases, cf. the focus particle *ebenfalls*, which, unlike all other focus particles, must not be in a position immediately adjacent to its domain, cf. (73a), or wh-interrogatives involving partitive constituents, which are necessarily discontinuous, cf. (73b):

- (73) (a) (*Ebenfalls) Ole Jensen (*ebenfalls) ist natürlich (ebenfalls) blond.
 (b) Was_i (*Interessantes) habt ihr denn gestern t_i (Interessantes) erlebt?

With the apparent counterevidence disposed of, the analysis of quantifying particles as wh-phrase clitics presented in 3.3 seems pretty well established, too. An additional argument in its favor, it should be recalled, are the facts about homonymous focus vs. quantifying particles discussed in 3.2, for they suggest strongly that the position right adjacent to wh-phrases (and DPs in general) is intrinsically related to quantifying particle use.²⁴

I should like to end this section with briefly speculating on how the syntactic differences between quantifying and modal particles worked out in 3.3 and 3.4 may be related to their different functions. Modal particles are in the service of functions which sentences fulfill as a whole and whose formal manifestations (notably manifestations of sentence mood) are located in the left peripheral positions: the C- and/or I-projections (for a more detailed account, cf. Brandt/Reis/Rosengren/Zimmermann (1992)). Hence, it seems natural for modal particles (a) that their base position is on the borderline between these projections and the V-projection, from which they have scope over the latter, i.e. over the proposition, (b) that they

²³ In the case of complex antecedent *welch-* and *wessen-* phrases, the right-adjacent position of *I-alles* is also highly marked, if not unacceptable. The reasons for this are, however, clearly systematic: particles cliticizing to a wh-phrase want to cliticize to the wh-element directly (cf. the difference in markedness between *was alles für Leute* and *?was für Leute alles*), which in *welch-* and *wessen-* phrases is syntactically impossible. According to Giusti (1991a) complex *wo*-pronouns (*womit*, *worauf*, etc.) behave the same way, but judgements seem to vary considerably.

²⁴ This is, of course, also suggestive of historical developments. The most interesting case in point in this context is perhaps inflected right adjacent *all-*, which is usually unstressed, cf. note 2, and, in the rare cases, in which it may have the same antecedents as QF-*alle(s)* and *I-alles*, seems to behave like *I-alles*, cf. (i-ii):

- (i) (a) Welche Bücher alle hat Max für die Prüfung gelesen.
 (b) Welche Bücher hat Max alles für die Prüfung gelesen.
 (c) Welche Bücher hat Max ?alle für die Prüfung gelesen.
 (ia)=(ib)≠(ic)
 (ii) (a) Wessen Bücher alle hat Max für die Prüfung gelesen.
 (b) Wessen Bücher hat Max alles für die Prüfung gelesen.
 (c) Wessen Bücher hat Max alle für die Prüfung gelesen.
 (iia)=(iib)≠(iic)

Thus, right adjacent *alle* acts as a kind of synchronic 'bridge' leading from QF-*alle(s)* to *I-alles*. Whether this also reflects the diachronic passage, is a question I cannot go into here.

may cliticize to the initial wh-phrase, which - by itself and by overtly realizing the +wh feature - is the primary formal correlate of interrogative sentence mood.²⁵ Furthermore, it seems natural (c) that modal particles may appear in the main clause of interrogative *was*-constructions, see (63) above, for the initial *was*-phrase still marks the scope of the specific wh-phrase(s) and wh-interrogative sentence mood at the same time, although the specific wh-phrase(s) are located in the embedded sentence. Quantifying particles, in contrast, do nothing of the sort: they are just related to wh-phrases and the like inasmuch as they denote variable expressions over which quantification is possible.²⁶ It stands to reason, then, that they are closely related to these operator phrases from the start, which is brought out by the above analysis as wh-phrase clitics. The fact that quantifying particles may also appear in typical modal particle positions should then be taken as an analogical extension that is syntactically licensed by the clitic property both types of particle share, and functionally motivated by the prominent role wh-phrases and the like also play in specifying sentence mood and discourse functions.

4. Final remarks

In the foregoing discussion, two points have been reasonably well established: first, QF-*alle(s)* and *I-alles* are instances of different categories; second, *I-alles* is a quantifying particle of a special sort, presumably a wh-phrase clitic. While these points are rather specific, they had to be argued with reference to a number of broader issues (in particular the syntax and semantics of DP-quantifiers, of particle types, and wh-constructions), which in turn makes them relevant for pursuing these broader issues further on. In conclusion, it should be stressed, however, that the discussion offered in this paper is far from complete in many respects. What is, for example, the structure of wh-phrases containing quantifying particle clitics? Exactly which elements belong to this particle class, and what are the regularities governing their cooccurrence with other particles in the respective 'clitic' positions? Is it really justified to speak of clitics in all these cases? On a more general level, what is the semantics and pragmatics of quantifying particles, and how exactly do they interact, for example, with the semantics and pragmatics of wh-interrogatives? How do they interact with other types of operators? Are there parallels to quantifying particles in other languages, and,

²⁵ Note that clitic modal particles in the middle field presuppose that the same particle occurs as a clitic to the initial wh-phrase, cf. the examples (62)f. discussed in 3.3.

²⁶ Some wh-phrases do not allow for quantification, cf. *?*wann alles/*warum alles, *wieso alles, *wie alles, *wie (teuer/groß, etc.) alles*. The reasons for this are partly obscure.

if not,²⁷ how is this to be explained? Finally, how did the quantifying particles, which all have cognates in other syntactic classes, develop, and in what way do the historical data bear on the descriptive analysis? The answers to these questions no doubt hold further surprises in store, the discovery of which, however, will have to wait for another occasion.

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²⁷ As far as I know, there is no parallel to *I-alles* in the other Germanic languages (suggestive parallels in Hungarian and Chinese have been pointed out to me by V. Molnár and Li Jie, respectively).

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