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Object scrambling and quantifier float in German

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The distribution of floated quantifiers in German bears a number of similarities to data discussed by Shlonsky (1991) for Hebrew, showing agreement in some cases between the floated quantifier and the nominal quantified over. Although the pattern of agreement seen in Hebrew appears to be only partially attested in German, I argue that when the covert part of the derivation is taken into account, German too exemplifies a biconditional relation between the presence of agreement on a quantifier head and the position of the DP quantified over.

The German data can be clearly accounted for under Sportiche's (1988) account of floating quantifiers as stranded by movement of the associated nominal; competing analyses of this phenomenon, which treat the floated quantifier as an adverbial, are rejected as having no account of the relevant agreement facts.

I show further that the asymmetries in the possible positions of quantifiers floated from subjects vs. those floated from objects follow straightforwardly from recent proposals concerning structure of the clause, specifically that AgrSP and TP dominate AgrOP, taken in conjunction with standard accounts of adjunct extraction islands. Quantifiers associated with subjects can be stranded in Spec-AgrSP or Spec-TP, while those associated with objects strand in Spec-AgrOP (in addition to stranding in base positions, possible for both subjects and objects). This difference can be seen with respect to sentential adverbials, which adjoin to TP (Holmberg 1993).

On the bases of these data, I argue with Mahajan 1994 that 'scrambling' should be understood as a cover term for two distinct types of movement: A-movement to a specifier of a functional projection (where a quantifier can be stranded), and A'-movement consisting of adjunction to any of the functional projections of the articulated Infl.

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I begin by briefly reviewing the two major competing analyses, rejecting the adverbial analysis and adopting Sportiche's (1988) quantifier stranding approach. In section 2 I discuss the German data and argue that the observed positional and interpretational differences can be derived from the presence vs. absence of an agreement feature which is realized overtly. In section 3, I use Sportiche's characterization of Q-float to investigate the nature of scrambling and adjunction, showing that quantifiers can be stranded only in A-positions.

1 The phenomenon

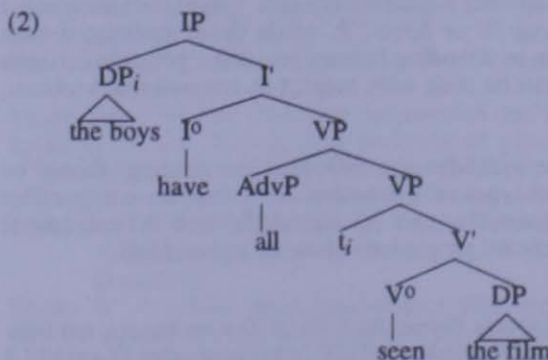
The basic phenomenon of Q(uantifier)-float is illustrated by the English examples in (1).

- (1) a. All the flights might have left by now.
 b. The flights all might have left by now.
 c. The flights might all have left by now.
 d. The flights might have all left by now.

In these cases, the quantifier *all* appears at various distances from the DP it quantifies over. The problem is clear: how does one account for the fact that *all* (and *both* and *each*, in English) can be separated in this fashion from the nominal? Two major approaches to Q-float have been proposed in the literature. The first, represented by Kayne (1975), Dowty and Brodie (1984), and Doetjes (1992) among others, treats the quantifier as an adverb, usually adjoined to some maximal projection, most commonly to VP. The second, proposed by Sportiche (1988) and developed in Shlonsky (1991), treats the quantifier as part of a nominal phrase; the quantifier is claimed to be able to be stranded by movement of the associated nominal. I will call the first approach Adverb-Q and the second Q-stranding; let us retain the term Q-float to refer to these phenomena atheoretically. The structures in (2) and (3) exemplify these two approaches.

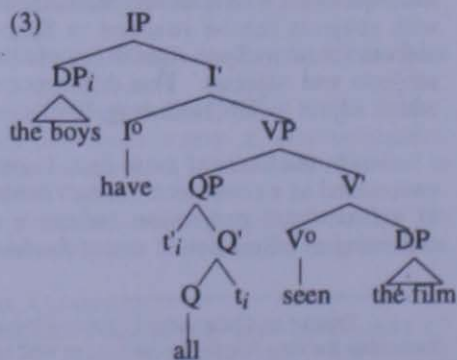
Adverb Q

The quantifier is an adverb adjoined to VP



Q-stranding

The quantifier heads a projection;
 the DP complement raises out



Investigation of floated quantifiers in a number of languages has shown that these quantifiers are part of the nominal system. Agreement of quantifiers with nouns seems to be the rule, not the exception. Languages which show nominal agreement with modifiers such as determiners and adjectives also show paradigmatically identical agreement with the word for *all*. (Cf. Italian, French, Spanish (Zagona 1988), Russian, Bulgarian, and Albanian (Zimmermann 1993).) These languages do not however, generally, show this type of agreement with adverbial elements. The Adverb-Q approach has no immediate

account of this correlation, while it is expected under the Q-stranding analysis.¹ The Q-stranding account can treat agreement as an unexceptional instance of spec-head agreement, and uses the various possible stranding positions as evidence for movement from those positions. Under this conception, then, Q-float can give us clues about the functional structure of clauses by providing a 'visible trace' of movement, so to speak. A stranded quantifier will appear only in a position through which its associated nominal has passed, typically specifiers of functional projections (see v. Gelderen 1993 for this approach to clausal structure as well). We will see below that this strategy will provide us with a rich diagnostic for movement in a scrambling language.

With this proposal in mind, let us turn now to the facts in German.

2 Agreement and the category of *all-*

2.1 *Bare all vs. inflected alle*

German shows a pattern of agreement between the quantifier *all-* and the DP quantified over that seemingly represents a midpoint between the French case, where the quantifier always agrees with the DP (Sportiche 1988), and the Hebrew case, where the quantifier agrees only when appearing to the right of the DP (Shlonksy 1991). In German, when the quantifier *all-* precedes the DP, it may appear with or without case agreement morphology as in (4), illustrated for subjects (a), direct objects (b), dative-marked objects (c), and genitive-marked objects (d).²

- (4) a. Gestern haben all(e) diese Studenten protestiert. nom.
yesterday have all[n] these[n] students protested
 'All these students protested yesterday.'
- b. Gestern habe ich all(e) diese Bücher gelesen. acc.
yesterday have I all[a] these[a] books read
 'I read all these books yesterday.'

¹ One possibility for salvaging the Adverb-Q account, suggested to me by Alec Marantz (p.c.), is to treat floated Qs as secondary predicates. This is unlikely to be correct for a number of reasons. First, secondary predicates in German, like predicate adjectives, do not show nominal agreement (see Suchsland 1993). Second, they can occur in positions where the floated Q cannot, as in (i):

- (i) a. ...da ungelesen niemand deine Bücher zurückbringt
since unread no-one your books brings.back
 b. *...da alle niemand deine Bücher zurückbringt.
since all no-one your books brought.back has

Third, while secondary predicates can be conjoined, as in (iia), they cannot occur separately in a single sentence, as in (iib).

- (ii) a. Elke hat deine Bücher neu und ungelesen zurückgebracht.
Elke has your books new and unread brought.back
 b. *Neu hat Elke deine Bücher ungelesen zurückgebracht.
new has Elke your books unread brought.back

The pattern of grammaticality is exactly reversed when we consider a floated Q and a secondary predicate. A floated Q cannot be conjoined with a secondary predicate, but it can occur separate from one:

- (iii) a. *Elke hat die Bücher ungelesen und alle zurückgebracht.
Elke has the books unread and all brought.back
 b. Ungelesen hat Elke die Bücher alle zurückgebracht.
unread has Elke the books all brought.back

Fourth, quantifiers are not predicates.

² In the German glosses, I use [n] to mark nominative, [a] accusative, [d] dative, and [g] genitive. Case is only marked on a plural noun in the dative: a final *-n* is added if the plural does not end in *-n* or *-s*.

- c. Gestern habe ich all(en) diesen Studenten geschmeichelt. *dat.*
yesterday have I all[d] these[d] students flattered
 'I flattered all these students yesterday.'
- d. Gestern habe ich all(er) dieser Gefallenen gedacht. *gen.*
yesterday have I all[g] these[g] fallen.ones commemorated
 'Yesterday I commemorated all those who died in battle.'

As in Hebrew however, a floated Q must agree in morphological case with the DP quantified over:

- (5) a. Diese Studenten haben gestern alle protestiert. *nom.*
these[n] all[n]
 b. Diese Bücher habe ich gestern alle gelesen. *acc.*
these[a] all[a]
 c. Diesen Studenten habe ich gestern allen geschmeichelt. *dat.*
these[d] all[d]
 d. Dieser Gefallenen habe ich gestern aller gedacht. *gen.*
these[g] all[g]
- (6) a. *Diese Studenten haben gestern all protestiert. *nom.*
 b. *Diese Bücher habe ich gestern all gelesen. *acc.*
 c. *Diesen Studenten habe ich gestern all geschmeichelt. *dat.*
 d. *Dieser Gefallenen habe ich gestern all gedacht. *gen.*

If the specifier-head relationship requires agreement, and extraction of the DP can only proceed via the specifier of the QP as Shlonsky proposes, we have an immediate account of the obligatory agreement of stranded Qs illustrated by the pattern in (5) and (6). In fact, a number of researchers have argued independently that extraction from a nominal phrase can only occur by movement through the specifier position (see Giorgi and Longobardi 1991)³.

2.2 Agreement and the weak/strong distinction

The central task in the following sections, then, will be to explain why (i) uninflected *all* may never support Q-float, and (ii) inflected *alle* may either support Q-float or allow its associated DP to remain in complement position.

The German facts differ in a crucial respect from their Hebrew counterparts: unlike *kol* in Hebrew, *all-* can show agreement even when the DP has not been raised through spec-QP in the syntax. In other words, the clear biconditional of Hebrew -- agreement iff overt raising -- is not true in German. In German, overt raising implies agreement, but the opposite does not hold.

Much recent work following Chomsky (1993) has been committed to the view that every agreement relation implies that the agreeing head and the DP with which it agrees must be in a specifier-head relation at some point in a derivation. Generally, there are two strengths of features: strong and weak. Strong features must be checked in a spec-head relation before Spell-Out, forcing overt movement, while weak features need only be checked by LF, allowing for covert movement. If we assume that Q bears a weak N-feature, for example, we expect never to see movement before Spell-Out, given Procrastinate. This is in fact what Shlonsky proposes as one of the differences between French and Hebrew: Agr (what I have called the N-feature) is weak on Q in French, but

³ Though of course those cases will differ from the ones under consideration here, being extractions from within NPs, not from QPs. See Bhatt (1990) and the papers in Bhatt et al. (1989) for investigations of related phenomena.

strong in Hebrew. But this use of features differs significantly from that found in the work of Chomsky (1993) and others. In these works, strong features cannot survive at PF and cause the derivation to crash if not eliminated; therefore, any strong features will force movement in the overt syntax. But this is not the case in Hebrew, where the DP can optionally remain in situ. Shlonsky in the end does not use spec-head agreement to explain the facts of French; instead he assumes that agreement in French "is not a reflex of specifier-head coindexing, as in Hebrew, but adjectival agreement, implemented perhaps by feature-copying" (1991:179). In fact, the minimalist use of strong vs. weak features is in principle independent of any actual agreement morphology a language may show. Whether agreement in the relevant domains is realized morphologically is a language-particular matter and requires a separate account. Languages differ only in whether certain features must be checked prior to Spell-Out (the strong features) or may be checked at LF (the weak features).

In the case at hand, it is clear that this use of strong vs. weak features cannot draw the correct distinction. If for example *alle* had a strong N-feature and *all* a weak one, we would expect contrary to fact that *alle* must always appear to the right of the associated DP, having forced its associated DP to raise overtly to Spec-QP (and opening the possibility for further movement).

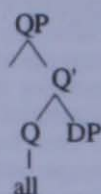
There are two ways in which bare *all* and inflected *alle* differ, and these two differences I believe will be the key to determining the proper account of these quantifiers. The first, which we saw above, is the obvious one: *alle* shows agreement, and *all* doesn't. The second is semantic: there is a preference for a distributive reading with the inflected and floated quantifier, while a collective reading of the plural is preferred with the uninflected (see Merchant 1996 for further discussion of the semantic differences).

Since strength as a property of features is orthogonal to whether those features are overtly manifested on any lexical item, let us pursue an alternative account which employs features which do not vary for strength. I would like to propose that the difference between *all* and *alle* derives from the simple presence or absence of a feature on the quantifier, namely the feature which is *not* orthogonal to overt realization, but rather determines such realization. If *all*- shows up inflected, it has this inflectional agreement feature, call it F; if it occurs uninflected, this feature is absent. This feature, which I assume does not have strong or weak values, if present, will have to be checked in a spec-head configuration at some point in the derivation. Crucially, however, there is nothing about the feature itself that indicates when it must be checked -- as long as it is checked by LF, the derivation converges (I follow Chomsky 1995: Ch.4 in assuming that agreement features are not interpretable at LF, hence must be checked and eliminated in the course of the derivation).

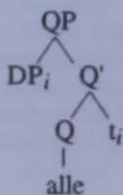
In the framework of Chomsky 1995, movement is only licit if it has as a consequence that some feature is checked. Each step in a derivation must result in the creation of a feature-checking relation. For present purposes, this means that the movement of the DP from its base position as complement to Q to Spec-QP will have to check a feature. With inflected *alle*, F is present and such movement allows the DP to check F. With uninflected *all*, F is absent and movement of the DP to Spec-QP will not result in a configuration where any feature is checked; such movement is therefore not possible.

Taking for the moment the case where the DP complement of *alle* has not moved further, then, we will have the two LFs given below:

(7) LF of bare *all*



(8) LF of inflected *alle*



If Cinque 1980, Torrego 1986, Giorgi & Longobardi 1991 and others are correct in arguing that extraction from a nominal phrase must proceed by way of the nominal specifier positions, we have an immediate account for why the uninflected *all* never occurs in Q-float. Its associated DP cannot move to the escape hatch of its specifier, and hence cannot be extracted. No such restrictions apply to inflected *alle*'s associate, which must in fact have raised to Spec-QP at least by LF.

3 The position of stranded *alle*

3.1 *Alle* in base positions

Q-Float in German has not gone entirely uninvestigated in the last two decades, though it hasn't played a large role in debates on German syntax (but see Link 1974, Vater 1979, Bayer 1987). Most recently, Giusti (1989) has used Sportiche's theory of Q-float to provide support for an analysis of scrambling from a structured VP in German, against an analysis of the clause as a "flat" many-branching structure, as proposed for example in Haider 1985. She shows that "the quantifier [can signal] the base position of the source NP it is linked to" (p.635). She assumes that scrambling takes a VP-internal argument and adjoins it to the VP. She does not, however, investigate examples where the floated quantifier precedes adverbial elements. The remainder of this paper will be concerned with these latter cases.

3.2 *Alle* in scrambled positions

'Scrambling' in German is a cover term for a type of analysis of the relatively free word order of arguments within the *Mittelfeld* (between the complementizer and the verb final position). These analyses posit a fixed order of the arguments within the VP and argue that movement of these arguments out of the VP gives rise to the other attested orders. One group of analyses claims that scrambling is solely A'-movement: scrambling allows arguments to adjoin to VP and the maximal projections of the articulated Infl (AgrOP, TP, and AgrSP) and is subject to a number of constraints which will not concern us here (see Müller and Sternefeld 1993 for one recent account). Another group argues that scrambling is solely A-movement to specifier positions of functional projections -- here, AgrOP, TP, AgrSP, etc. (see vanden Wyngaerd 1989 and Haeberli 1994). Both of these

groups capture some range of the facts, building on the insight that scrambling shows a range of properties typical of both A- and A'-movement (see the papers in Grewendorf and Sternefeld 1990 and Corver and van Riemsdijk 1994). In this section, I will show that the differences in the positional distribution of *alle* stranded by subjects vs. *alle* stranded by objects can best be accounted for if scrambling consists of both kinds of movement: first, A-movement to the specifier of a functional projection, followed potentially by A'-movement to a higher adjunction site (similar to the account given in Mahajan 1994).

Besides the direct order of multiple arguments, one of the main probes in the analysis scrambling and clause structure in general has been the relative order of arguments and adverbials. Let us assume that adverbials adjoin to maximal projections only. Many researchers have accounted for the distributional properties of different classes of adverbs by assuming that each class adjoins to a particular kind of maximal projection or is licensed by a particular kind of head (Jackendoff 1972, Bellert 1977, Bowers 1993, Holmberg 1993); in particular, Jonas and Bobaljik 1993 assume that sentential adverbs adjoin to TP and manner adverbs to VP, where the basic clause structure is that assumed in Chomsky 1993:

(9) [AgrSP [TP [AgrOP [VP

Because of the positional variability of manner, temporal, and locative adverbials (see below), as well as modal particles such as *ja*, *doch*, *mal*, *eben*, *sogar*, etc. (see Weydt 1977), I will use only the sentential adverbs (such as *wahrscheinlich* 'probably', *möglicherweise* 'possibly'⁴), whose distribution is much more limited, as reliable tests for clausal structure, assuming that these latter adjoin only to TP. See especially Holmberg 1993 for arguments establishing the positional restrictions of these adverbs.

3.2.1 Stranding by subject movement

Alle which originates in the subject of an unaccusative (10-11) or unergative (12-13) can be stranded either to the left or to the right of both manner and sentential adverbs. (I use subordinate clauses in the following examples to abstract away from V2 effects as is standard.) Since German is verb final, there is no principled way to ascertain the position of *alle* directly preceding the verb.

unaccusative

- (10) a. ...daß die Kinder wahrscheinlich *alle* eingeschlafen sind.⁵
 b. ...daß die Kinder *alle* wahrscheinlich eingeschlafen sind.
that the children (all) probably (all) fallen.asleep have
- (11) a. ...daß die Kinder schnell *alle* eingeschlafen sind.
 b. ...daß die Kinder *alle* schnell eingeschlafen sind.
that the children (all) quickly (all) fallen.asleep have

unergative

- (12) a. ...daß die Kinder wahrscheinlich *alle* getanzt haben.
 b. ...daß die Kinder *alle* wahrscheinlich getanzt haben.
that the children (all) probably (all) danced have
- (13) a. ...daß die Kinder schnell *alle* getanzt haben.
 b. ...daß die Kinder *alle* schnell getanzt haben.

⁴ Other kinds of adverbials that have also been called sentential, such as *leider* 'unfortunately', have enough variation in their placement to make them less reliable as a test for TP.

⁵ I use italics for the quantifier and underlining for adverbials, here and below, simply as an aid to the reader. This typography is not meant to suggest focus intonation or the like whatsoever.

that the children (all) quickly (all) danced have

That the (b) sentences need not represent the DP in spec-QP can be seen by the fact that the order *alle* > Adverb is also licit in V2 main clauses:

- (14) Die Kinder sind alle wahrscheinlich eingeschlafen.
 (15) Die Kinder sind alle schnell eingeschlafen.
 (16) Die Kinder haben alle wahrscheinlich getanzt.
 (17) Die Kinder haben alle schnell getanzt.

The (b) sentences as they stand seem to be structurally ambiguous. Either the DP associate is in Spec-QP as in (18), or it has moved out of the specifier and adjoined to AgrSP, giving (19).

- (18) [QP DP [Q t]]
 (19) [AgrSP DP [AgrSP [QP t' [Q t]]]...

It is only structures equivalent to (19), where the DP has moved entirely out of the QP, that will be interesting to us, since only these will distinguish whether the QP is in an A- or an A'-position. One way to disambiguate is to have intervening material between the DP and the stranded QP, as in (20):

- (20) ...da die Kinder gestern alle wahrscheinlich getanzt haben.
since the children yesterday all probably danced have

Here, *alle* is stranded in Spec-AgrSP and *die Kinder* has A'-adjoined higher than the adverb *gestern*. Another way to disambiguate is prosodically. As Link 1974:106 and Vater 1979:22 point out, there are very clearly two possible pronunciations of an *alle* that immediately follows its associate DP. Vater 1979 gives the following example (adapted from Link 1974):

- (21) *Die Regierungsvertreter alle verschwiegen die Vorgänge.
the government representatives all were silent about the proceedings

It is worth quoting Vater on this point in full:

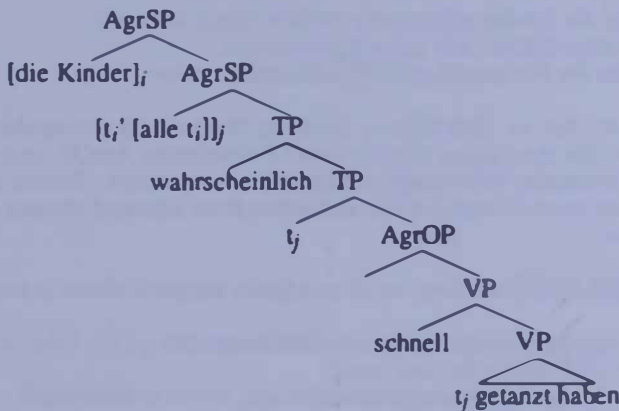
"One note about [(21)]: German has a construction with *alle* postposed within the NP to which it belongs; this *alle* is always unstressed, in contrast to floated *alle*. So when a sentence like [(21)] is spoken, then [it is grammatical] only with unstressed, non-floated *alle* (cf. Link 1974: 106)"⁶ (Vater 1979:22-23)

In other words, (21) is grammatical just in case *alle* is unstressed. We can interpret this fact naturally within the present approach to Q-float in the following way. When the DP is in Spec-QP, it still forms a phrasal constituent with the Q, and hence is a single prosodic unit; this prosodic difference is realized by not stressing the foot dominating *alle*. Such non-stressing is natural if we assume that the DP contains the prosodic head of the phrase and will therefore bear main stress. If the DP has moved out of the QP, on the other hand, the stranded Q forms its own minimal prosodic word, which entails that it must bear its own main stress. For the purposes of this investigation, then, it is crucial to remember that the grammaticality judgments are given for this stressed *alle*, as Vater does in (21).

⁶ "Zu [(21)] ist anzumerken: Es gibt (im Dt. eine Konstruktion mit nachgestelltem *alle* innerhalb der NP, zu der es gehört; dieses *alle* ist immer unbetont, im Gegensatz zu dem gefloateten *alle*. Wenn also ein Satz wie [(21)] geäußert wird, dann nur mit unbetontem, nicht-gefloatetem *alle* (vgl. Link 1974, 106)."

The structure for *alle* to the left of all adverbials is given in (22). The subject QP has moved into Spec-AgrSP, an A-position, where *alle* is stranded by movement of the DP out of the QP to a position adjoined to AgrSP. This movement is licit if composed of two steps. The first step, movement to Spec-QP, is licit for reasons we have discussed above. The second movement, adjunction to an XP, is presumably not licensed by the same mechanisms explored earlier. What permits this second movement to occur? This is simply another way of asking what permits scrambling to occur at all. I will follow Müller & Sternefeld 1993, 1994 in assuming that certain languages make this type of adjunction movement available, and others do not; these movements typically give rise to a number of discourse function related effects and subtleties that are not our concern here. Thus, for our purposes, adjunction of a DP (or QP) to an XP clausal projection is a freely available option in German.

(22) Subject-stranding of *alle* in Spec-AgrSP, to the left of sentential adverbials



It is still worth asking at this point why extractions from a subject are grammatical at all. Given the systems developed in Chomsky 1986, for example, a DP in subject position should be a barrier to extraction of subconstituents. A number of points should be made with regard to these extractions. First, the constituent being extracted in Q-float is different from that in typical test cases. In Q-float, we have the DP complement of a Q, not the complement of an N or P. But the crucial factor is that the QP whose specifier the extractee passes through is in an A-position. Here, A-positions have been identified with the specifiers of clausal functional projections (AgrSP, TP, AgrOP -- as in Chomsky 1991, Mahajan 1990 and much subsequent work) and the base positions inside the VP to which theta-roles are assigned. We will see below that what makes this movement licit is not simply that the DP can pass through the QP's specifier, but that this QP must be in an A-position.

Let us assume then that this is the correct generalization, without pursuing here a more technical account, though one can easily be imagined (cf. Chomsky 1986, Rizzi 1990): movement from the specifier of an XP, XP in an A-position, is licit. This cannot be a property solely of German, since Q-float is present in English as well; in fact, Q-float in English is usually assumed to be possible only from subjects (Dowty & Brodie's (1984) system is constructed to allow for only this possibility, for example). So whatever bars extraction from subjects in general clearly must be able to distinguish Q-float from illicit movements (see Grewendorf 1988, Webelhuth 1992 for a discussion of extraction from subjects in German).

3.2.2 *Stranding by object movement*

Turning now to stranding by object movement, we notice a curious asymmetry to the subject cases just examined: while *alle* stranded from a subject can appear to the left or right of sentential adverbials like *wahrscheinlich* (adjoined to TP), *alle* stranded from an object cannot:

- (23) a. ...daß Max die Bücher wahrscheinlich *alle* gelesen hat.
 b. *...daß Max die Bücher *alle* wahrscheinlich gelesen hat.⁷
that Max the books (all) probably (all) read has

An object-stranded *alle* can however appear either to the left or right of a manner adverbial:

- (24) a. ...daß Max die Bücher schnell *alle* gelesen hat.
 b. ...daß Max die Bücher *alle* schnell gelesen hat.
that Max the books (all) quickly (all) read has

The asymmetry of (23) vs. (24) follows from the hierarchical arrangement of the functional projections within the clause, namely that TP dominates AgrOP, and standard accounts of the ungrammaticality of extraction from adjoined phrases. Before seeing in detail how this follows, we need to establish that extraction from adjoined phrases is indeed ungrammatical in German.

Both wh-movement and scrambling out of an adjunct temporal clause is impossible:

- (25) *Welche Bücher ist er gestorben [bevor er t lesen konnte]?
which books is he died before he read could
 'which books did he die before he could read?'
 (26) *Dann ist er die Bücher gestorben [bevor er t lesen konnte]
then is he the books died before he read could
 'then he died before he was able to read the books'

Q-float cases are parallel in every respect. The following examples show that *alle* cannot be stranded by movement of its associated DP in an adjoined position.

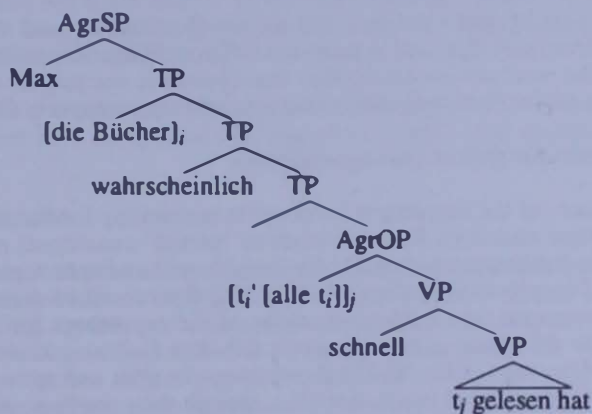
- (27) ...daß seine Ki derjahre Max [AgrOP alle [VP dort verbracht hat]] [argument]
that his childhood.years Max all there spent has
 (28) *...daß seine Kinderjahre Max [VP alle [VP dort geblieben ist]] [adjunct]
that his childhood.years Max all there stayed is

In (27) [seine Kinderjahre] is part of the object of the verb *verbringen*, and has scrambled to the left of the subject, stranding *alle* in spec-AgrOP. In (28), on the other hand, the temporal phrase [alle seine Kinderjahre] is an adjoined adverbial, not selected by the verb *bleiben*, and hence movement out of its position is illicit (note that the adverbial does not move into AgrOP, its case being licensed by some other mechanism; see Larson 1985, McCawley 1987 on bare NP-adverbials). Assuming the theory of adjunct extractions of Chomsky 1986, movement out of an adjunct will always give rise at least to a subadjacency violation.

⁷ Recall that this grammaticality judgment refers to the sentence with stressed *alle*. The sentence improves markedly if *alle* is unstressed, indicating no movement out of the QP.

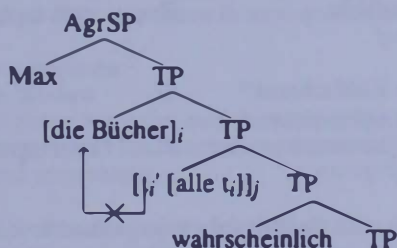
With this in mind, we can now understand the contrast in (23) and (24). The ungrammaticality of (23b) arises because this word order with stressed *alle* could only come about by stranding the quantifier. But in order for *alle* to be stranded to the left of *wahrscheinlich*, which adjoins only to TP, there would have to be some specifier landing site for the object [alle die Bücher] higher than TP, contrary to fact. Since there is no A-position landing site for objects above TP, the only way an object can appear to the left of a sentential adverb is by adjunction to TP or to AgrSP, from which position further extraction is impossible. The relevant structures are the following:

- (29) Object-stranding of *alle* in Spec-AgrOP, to the right of sentential adverbials



(23b) is ruled out by the impossibility of the movement indicated in (30):

- (30) Impossible to strand object-*alle* in adjoined position



3.2.3 Non-sentential adverbials and stranded *alle*

The following examples indicate the danger of assuming unique adjunction sites even for functionally similar adverbials.

- (31) a. ...daß die Vorlesungen dienstags *alle* um 14 Uhr stattfinden.
that the lectures Tuesdays all at 2pm take.place
 b. ...daß Max die Karten dort *alle* unterm Sofa gefunden hat.
that Max the cards there all under.the couch found has

If the account given here for the stranding of *alle* is correct, these adverbials must be adjoined to different XPs, as for instance in (32):

- (32) daß Max [TP die Karten [TP dort [TP T [AgrOP alle t [VP unterm Sofa [VP t gefunden hat

If one wanted to maintain unique adjunction sites for these classes of adverbials (locative adverbs adjoining only to VP, for example), one would be forced to claim that scrambling out of an adjoined position (assuming that the QP scrambled to between the adverbials) was licit. But we have seen above that this is not the case. Alternatively, one might take the data in (31) as *prima facie* evidence that the floated quantifier really is simply an adverb, adjoined to VP with all the other adverbs. But such a retreat would leave the subject/object asymmetry completely mysterious, in addition to suffering from the defects enumerated in section 1.

The contrasts between subject and object Q-stranding and the position of adverbials has given us a fairly fine tool to examine different kinds of movement within the clause in German. The next section establishes that Q-float is not subject to some of the parochial constraints seen in other well-studied movement constructions in German.

3.3 *Q-float is not was-für split or split-topicalization*

The mixed nature of the movement involved in accounting for the orders found in the Mittelfeld might raise questions for other kinds of 'partial'-constituent movement that have been examined in the literature, specifically *was-für* split and split-topicalization (see van Riemsdijk 1989, Fanselow 1988, Tappe 1989). If Q-float could be assimilated to one of these kinds of movements, we might lose many of the arguments for an articulated clause structure, and for the nature of extraction of a DP. But Q-float contrasts starkly with these phenomena: as Diesing (1992: 40-41) shows, *was-für* split and split-topicalization cannot occur with individual-level predicates (IL), though they are fine with stage-level predicates (SL):

- | | | | | |
|------|----|--|----|---------------|
| (33) | a. | *Was sind für Schuhe wasserdicht?
<i>what are for shoes waterproof</i> | IL | was-für split |
| | b. | *Schuhe sind viele wasserdicht.
<i>shoes are many waterproof</i> | IL | split topic |
| (34) | a. | Was sind für Karotten im Kühlschrank?
<i>what are for carrots in.the refrigerator</i> | SL | was-für split |
| | b. | Karotten sind viele im Kühlschrank.
<i>carrots are many in.the refrigerator</i> | SL | split topic |

But there is no difference in acceptability with stage-level vs. individual level predicates in Q-float:

- | | | | | |
|------|----|--|----|---------|
| (35) | a. | Die Schuhe sind alle wasserdicht.
<i>the shoes are all waterproof</i> | IL | Q-float |
| | b. | Die Karotten sind alle im Kühlschrank.
<i>the carrots are all in.the refrigerator</i> | SL | Q-float |

Furthermore, it is not the case that Q-float always arises as a consequence of movement to spec-CP, as we have seen in the numerous examples above of embedded scrambling. The landing site for the moved constituent in *was-für* split and split-topicalization, however, is always spec-CP:

- (36) a. *Wer hat was gestern im Kühlschrank für Karotten gelassen?
who has what yesterday in.the refrigerator for carrots left
 b. *Von deiner Party waren Karotten noch gestern viele im Kühlschrank.
from your party were carrots still yesterday many in.the refrigerator

This second point is also made with respect to split-topicalization by Bayer & Kornfilt (1994: 33), who point out that "cases of IP-internal topicalization are ungrammatical", especially adjunction to VP, which is "truly offending" (cf. also Bayer 1987).

In addition, the moved constituent in *was-für* split and split-topicalization is a *wh*-phrase and NP (bare plurals, in standard German), respectively, while in Q-float it is a definite DP. Further, split-topicalization occurs only with nominatives and accusatives (v. Riemsdijk 1989), while Q-float can occur with any case.

These contrasts are offered here to show that there is little reason to assume that the account given here for Q-float will extend to *was-für* split and split-topicalization, or vice versa.

3.4 Summary

This section has shown that the subject/object asymmetry between the positions in which a stranded *alle* can appear supports an articulated clausal structure with AgrSP and TP dominating AgrOP, and with sentential adverbs adjoining only to TP. *Alle* was seen to strand only in A-positions: either in its base position within the VP, or in the specifier of a functional projection -- Spec-AgrSP for subjects, and Spec-AgrOP for objects. *Alle* cannot be stranded in adjoined A'-positions (including those created by scrambling); this is expected, since extraction from adjoined phrases is in general ungrammatical in German as in English. A clause structure that did not posit a difference between A-positions for objects and those for subjects higher in the clause than VP -- here identified with AgrSP and AgrOP -- will have no way of capturing the subject/object asymmetries with respect to the positions of their respective floated quantifiers.

4 Conclusions

This paper has examined the phenomenon of Q-float in German and has provided a number of arguments for conclusions about the nature of Q-float, feature checking, clause structure, and scrambling.

The Q-stranding approach to Q-float was shown to provide a natural account of the nominal agreement paradigms seen with quantifiers, and was demonstrably superior to its nearest competitor. The Adverb-Q approach was ad hoc and made the false prediction that other adverbials should show agreement as well. This conclusion supports Sportiche's (1988) analysis of Q-float in a general way, but specifically Shlonsky's (1991) refinement, which makes the Q head conform to X-bar principles. Having a specifier as an obligatory intermediate landing site for extraction from the nominal phrase also brings this type of extraction into line with well-investigated typologies of extraction from nominals.

Inflected *alle* differs from bare *all* only in the presence of an agreement feature. This feature, present only on *alle*, is non-interpretable and must be checked in a spec-head relation by LF. This ensures that the DP complement will raise, either overtly or covertly. Uninflected *all*, lacking the agreement feature, cannot license the raising of its complement. This derives the fact that *all* cannot be stranded.

The observed asymmetry in the possible positions of quantifiers floated from subjects vs. those floated from objects supports the existence of separate agreement projections for subjects and objects and their hierarchical organization argued for in Chomsky 1993 and others. If AgrSP and TP dominate AgrOP, and *alle* can be stranded only in an A-position, then we expect to find *alle* stranded by a subject to be able to occur higher in the clause than *alle* stranded by an object, since quantifiers associated with subjects can be stranded in Spec-AgrSP, while those associated with objects strand in Spec-AgrOP. This difference can be seen with respect to sentential adverbials, which adjoin to TP (following Holmberg 1993).

This account relies on the differences between the two types of movement available within the clause in German: A-movement to the specifiers of clausal functional projections (where a quantifier can be stranded), and A'-movement consisting of adjunction to those projections. The varying word order possibilities arise through the effects of both of these kinds of movement, indicating that 'scrambling' should not be thought of as a unitary phenomena, but rather must be decomposed into both A- and A'-movement. This last point opens the door to a re-examination of the facts that led to the debate on scrambling. If this conclusion is correct, we should expect the puzzling range of A- and A'-properties that have been extensively documented with respect to this phenomenon.

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