

A Survey of Minimalist Analyses of Floating Quantifiers in German

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1 Introduction

The Minimalist Program defines a lexicon, arranged in classes and containing features, that participate in syntactic via merging and agreement. The function of these behaviors leads one to expect that constituents whose features are dependent on one another, i.e. phrases that should be hierarchical siblings, to have adjacent word order. In some cases, however, like DP movement into subject position, this adjacency is violated.

Floating quantifiers in German are one such case. In German, as in some English dialects [1], a quantifier can appear in a lower or higher position than the DP that it takes scope over. This is seen in Example (2):

- (1) Alle die Segelboote sind da.
all the sailboat BE there
'All the sailboats are there.'
- (2) Die Segelboote sind alle da.
the sailboat BE all there
'All the sailboats are there.' [7]

In these examples, the DP “the sailboat” is what the quantifier is taking scope over. The interpretation of both sentences are equivalent; that is, in each circumstance, it is true that all boats are at the salient location. However, in the second example, the thing taking scope (“all”) is in a lower position than the DP it supposedly scopes over.

In the following sections, I will summarize the major conclusions of minimalist perspectives on floating quantifiers in German, and provide language samples that support

or refute each claim. Section 2 defines what subset of the lexicon is eligible for quantifier float and what possible floating behavior looks like. Section 3 gives a brief overview of the analysis of quantifiers as adverbial modifiers, and Section 4 describes the analysis of quantifier float as a type of stranding.

2 Definitions

2.1 The Set of Quantifiers

Before any discussion of how quantifier float occurs, we must first determine which entities can behave as quantifiers, and which of these can participate in quantifier float. Vater (1980) posits that there are 1) a subclass of determiners that can behave as quantifiers, and 2) a class of standalone quantifiers that do not behave as determiners but have similar behavior to the subclass. This taxonomy yields the following candidates:

Table 1: Quantifiers in German

Determiner & Quantifier	Quantifier
<i>alle</i> *	<i>viele</i>
<i>einige</i>	<i>wenige</i>
<i>kein</i>	

Hoeksema [4], Merchant [5], and Ott [6] also include *beide* ‘both’ in the subclass, and Ott additionally examines *jeder* ‘each’ as a possible subclass member.

Vater notes that the behavior of *alle* is unique in many ways to the other candidates in the subclass. However, it is by and large inconsequential to the analysis whether *alle* is treated as a quantifying determiner or a plain quantifier. We will see in Section 4.1 some of the special properties of *alle* that make it difficult to place within this taxonomy.

In fact, the subclass itself has many instabilities between individual lexical entries. For example, Ott notes that both *alle* and *jeder* can attach to bare-NPs, as in Example (3b).

- (3) a. Die Süßigkeiten mag ich alle.
 the sweets like I all.
- b. Süßigkeiten mag ich alle.
 sweets like I all. [6]

In these cases, the interpretation must be that the speaker likes all entities that have the property of being a sweet, whereas (3a) is equally grammatical, but the DP must refer to a contextually-salient set. In contrast, another determiner quantifier should not be permissible:

- (4) * Süßigkeiten mag ich einige.
 sweets like I some.
 ‘I like some sweets.’

For the purposes of this paper, the set of quantifiers will be liberally defined as $\{alle, einige, kein, veile, wenige, jeder, beide\}$.

2.2 Float Direction and Distance

There are two kinds of quantifier floating, forward floating and backward floating. In cases of forward float, the quantifier appears in a position that is after and non-adjacent to the DP it takes scope over. In backward float, the quantifier appears non-adjacent before the DP. While forward floating is observed with higher frequency in German [7], backward floating does still occur in constrained circumstances. Specifically, backward floating can always occur for pronominal DPs, but for non-pronominal case backward floating is either dis-preferred or prohibited. As evidence, compare Examples (5) and (6).

- (5) *Alle habe ich die Gäste begrüsst.
 all have I the guests welcomed.
 I have welcomed all the guests.

- (6) Alle habe ich sie begrüsst.
 all have I them welcomed.
 I have welcomed them all. [7]

Another generality of quantifier float in German is its sensitivity to distance. Vater (1980) notes that quantifier floating seems less grammatical with increasing distance, i.e., that the more constituents exist between the quantifier and its DP in the surface string, the worse an utterance will sound. [7] He provides the following sets of increasingly ungrammatical utterances as evidence of this:

- (7) a. *Alle* [Studenten] wurden von Henry Ford zu einem Bankett eingeladen.
 all students were by Henry Ford to a banquet invited.
 ‘All students were invited to a banquet by Henry Ford.’
- b. [Die Studenten] wurden *alle* von Henry Ford zu einem Bankett eingeladen.
 the students were all by Henry Ford to a banquet invited.
- c. [Die Studenten] wurden von Henry Ford *alle* zu einem Bankett eingeladen.
 the students were by Henry Ford all to a banquet invited.
- d. ?[Die Studenten] wurden von Henry Ford zu einem Bankett *alle* eingeladen.
 the students were by Henry Ford to a banquet all invited.
- (8) a. *Alle* [unsere Olympiasieger] kamen dies Jahr ohne Medaille zurück.
 all our Olympians came this year without medal back.
 ‘All our Olympians returned without a medal this year.’
- b. [unsere Olympiasieger] kamen *alle* dies Jahr ohne Medaille zurück.
 our Olympians came all this year without medal back.
- c. [unsere Olympiasieger] kamen dies Jahr *alle* ohne Medaille zurück.
 our Olympians came this year all without medal back.
- d. *[unsere Olympiasieger] kamen dies Jahr ohne Medaille *alle* zurück.
 our Olympians came this year without medal all back.

The specifics of this phenomenon will be discussed later.

3 Potential Adverbials Analysis

One possible explanation for the observed positions of the floating quantifiers is that they behave as adverbials, as seen in Figure 1.

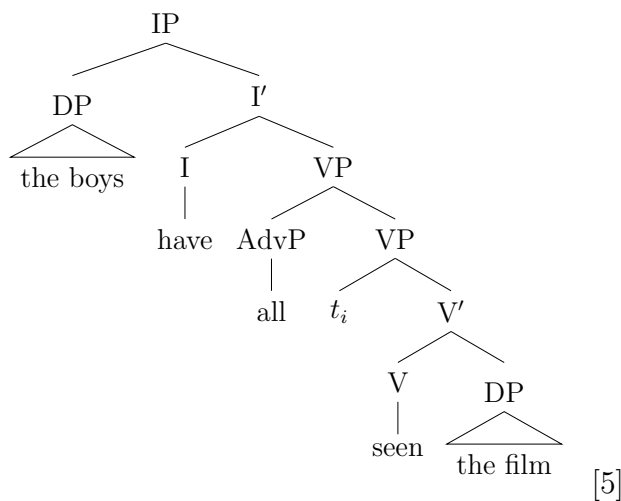


Figure 1: ‘all’ derived as adverbial

Bobaljik (2003) notes that “[floating quantifiers] occupy positions in which adverbs canonically surface, especially to the left of verbs and verbal elements (e.g., auxiliaries and modals).” [2] There is cross-linguistic evidence to validate this theory. Example (9) shows the quantifier *all* appearing as an adverbial modifier at various points along the clausal spine.

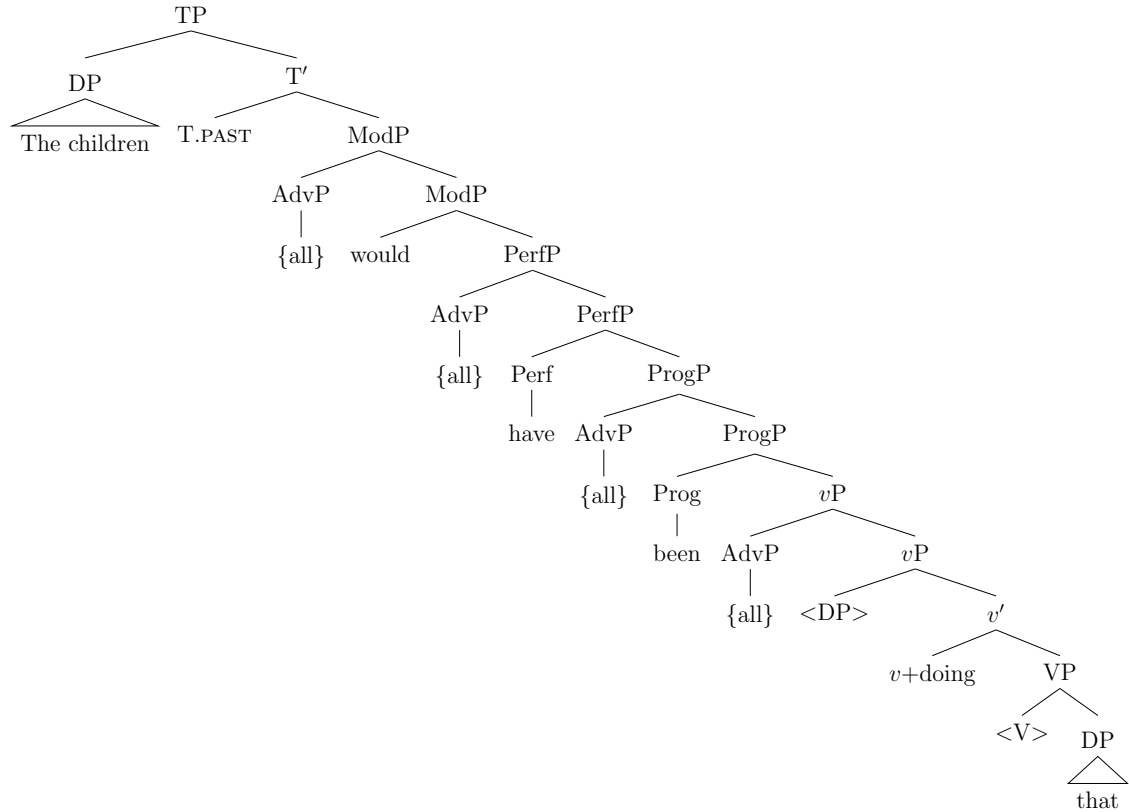
There are several advantages to the adverbial analysis. In their analysis, Hoeksema (1996) argue that local movement of quantifiers is problematic, and that cross-linguistic analyses of quantification as a kind of predicate modification are more sympathetic to the observed data. [4] In addition, Vater (1980) notes that the “niche” positions that quantifiers tend to appear in are the same that modifiers, especially parentheticals, tend to appear in. [7].

However, there are problems with this analysis as well. Merchant (1996) notes that since adverbs don’t bear case, there is no way to account for the agreement between quantifiers and their DPs for case that are observed in many languages, including German

(see Section 4.1). [5]. What’s more, Giusti (1990) notes that downstream analyses of other phenomena suffer if quantifiers are assumed to be adverbial. [3]

(9) a. “The children {all} would {all} have {all} been {all} doing that.” [2]

b.



4 As Quantifier Stranding

A stronger argument, however, can be found for the quantifier stranding analysis adopted by Merchant and Vater, among others. In this analysis, a Quantifier Phrase (QP) can be formed by merging a DP specifier with a quantifier. When DP movement is triggered by agreement, the internal DP to the QP will move, leaving the quantifier in its pre-movement position. This is shown in Figure 2.

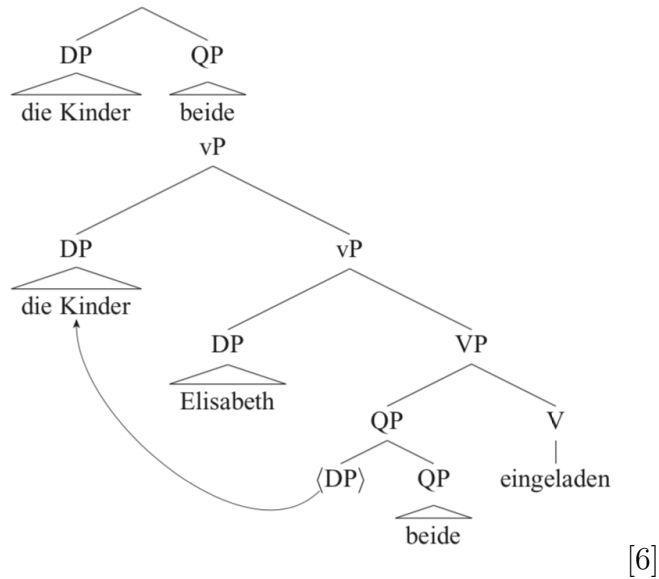


Figure 2: Quantifier attached to DP & stranded in lower position by DP movement

When compared to the adverbial analysis, the quantifier stranding approach can yield the same surface order. Compare the following with Figure 1, above.

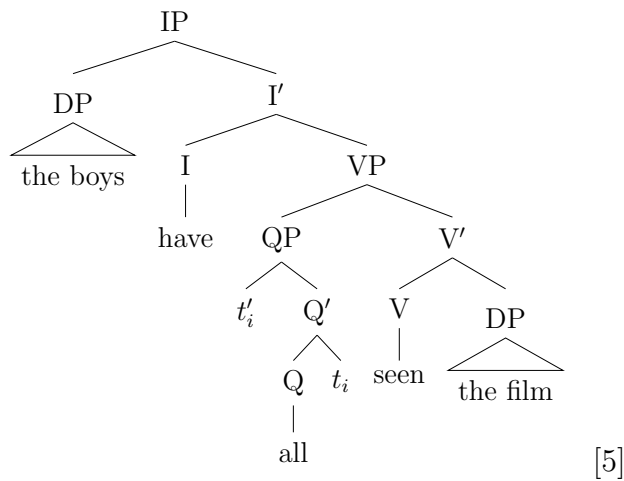


Figure 3: 'all' derived with spec DP

What follows are three features which bear influence on the quantifier stranding approach, and play a role in determining grammaticality of certain constructions. Section 4.1 covers case agreement, 4.2 gives counterarguments to previously raised issues using intonational cues, and 4.3 discusses the influence of DP definiteness.

4.1 Agreement

As mentioned earlier, quantifiers in German show case agreement with their DP specifiers. This is shown in Example (10).

(10)

- a. Die Studenten haben {alle / beide} protestiert.
the students.NOM have all.NOM both.NOM protested
- b. weil er die Schüler gestern {alle / beide} bestraft hat.
because he the students.ACC yesterday all.ACC both.ACC punished has
- c. Den Kindern habe ich {allen / beiden} geholfen.
the children.DAT have I all.DAT both.DAT helped
- d. Die Männer wurden jeder mit einem Orden ausgezeichnet.
the men.NOM were every.NOM with a medal awarded

[6]

The language is not alone in showing agreement on quantifiers [4, 5], however the interaction with floating shows some interesting anomalies.

For example, in some circumstances it seems that the quantifier *alle* does not show agreement with its DP. Merchant (1996) observes that when *alle* directly precedes its DP, it has the option of being uninflected for case. This is shown in Example (11).

(11)

- 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.'
- 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.'

[5]

In addition, he notes that "uninflected *all* may never support Q-float, and inflected *alle* may either support Q-float or allow its associated DP to remain in complement position."

[5] The quantifier stranding approach already accepts the variability required to keep the quantifier attached to the DP (by simply replacing DP movement with QP movement), the issue of inflection is not yet justified (see section 4.2 for a potential response).

4.2 Intonation

The strongest argument refuting the contention in agreement noted in the previous section is provided by Vater (1980) and bolstered by Merchant (1996), namely that the pronounced stress on the quantifier has strong bearing on its grammaticality. They note that there is a construction similar in appearance to floating, where the uninflected quantifier *alle* can immediately follow the DP it has scope over. In this construction, grammaticality can only be validated if the *alle* is unstressed. So for sentences like,

- (12) Die Regierungsvertreter alle verschwiegen die Vorgänge.
 the government.representatives all were.silent.about the proceedings
 ‘All the government representatives were silent about the proceedings.’ [5]

grammaticality is contingent on the pronouncing interface. This argument resolves the asymmetric grammaticality seen in section 4.1, at the cost of introducing a lexically-specific DP construction for unstressed *alle*.

Appealing to the pronouncing layer also allows us to handle a previously undisclosed counterexample to the dis-preference of long-distance stranding, given in Vater (1980):

- (13) a. *Alle* [Bücher] haben den Kindern diesmal wider Erwarten gefallen.
 all books have the children this.time contrary expected as.
 ‘The children liked all the books against expectations.’
 b. [Die Bücher] haben *alle* den Kindern diesmal wider Erwarten gefallen.
 the books have all the children this.time contrary expected as.
 c. [Die Bücher] haben den Kindern *alle* diesmal wider Erwarten gefallen.
 the books have the children all this.time contrary expected as.

- d. [Die Bücher] haben den Kindern diesmal *alle* wider Erwarten gefallen.
 the books have the children this.time all contrary expected as.
- e. [Die Bücher] haben den Kindern diesmal wider *alle* Erwarten gefallen.
 the books have the children this.time contrary all expected as. [7]

Here, there is no gradient difference in the perceived grammaticality of the utterances, despite differences in the number of constituents separating the QP from its DP. They argue instead that what makes certain long-distance strands ungrammatical is that “the quantifier cannot be placed behind the last constituent before the verb (or verbal complex) if this constituent carries the main stress.” [7] However, this generality is violable for short distances, hence the asymmetry in grammaticality.

4.3 Definiteness

Giusti (1990) observes the influence of definiteness on the floating quantifiers and surface word order. She notes that in German, the order of the direct and indirect objects is dependent on the definiteness of the DPs. That is, a direct object can precede an indirect object in the linear order only when the direct object is definite. This is shown in Examples 14 and 15, below.

- (14) Ich habe einem/dem Studenten ein/das Buch gegeben.
 I have a/the student-dat a/the book-acc given
 ‘I have given a/the student the book.’

- (15) Ich habe (*ein)/das Buch einem/dem Studenten gegeben.
 I have (*a)/the book-acc a/the student-dat given.
 ‘I have given a/the student the book.’ [3]

This generalization can be used to justify the treatment of quantifiers as resting in the position they are base generated.

One counterargument to movement analyses of quantifier float is that German may well have an unstructured VP, in which case internal scrambling could account for surface word orders without having to call upon scrambling. The following examples from Giusti (1990) show why such a conclusion may be premature. In Examples 16 and 17, the grammaticality can be explained by a combination of DP movement leaving the quantifier stranded in the base position, and scrambling in the DP.

- (16) Der Lehrer hat [die Schüler]_i (gestern) [_{VP} [alle *t_i*] gelobt].
 the teacher has the students yesterday all praised.
 ‘The teacher praised all the students yesterday.’
- (17) Der Lehrer hat [die Schüler]_i (gestern) [_{VP} [allen *t_i*] eine Fünf gegeben].
 The teacher has to-the students yesterday all an F given.
 ‘The teacher gave an “F” to all the students yesterday.’ [3]

However, their counterpart in Example (18) seems to show that the quantifier of the indirect object in base position to the right of the direct object, which is a valid VP structure.

- (18) Der Lehrer hat den Schülern die Bücher allen gegeben.
 the teacher has the students-DAT the books-ACC all-DAT given.
 ‘The teacher gave all the students the books.’ [3]

However, if we say that the position of the direct object *die Bücher* is a result of scrambling as well, then it is possible to conclude that the quantifier stranding occurs and is followed by scrambling that places the direct object ahead of its base position. The following ungrammatical sample supports this analysis.

- (19) *Der Lehrer hat den Schülern ein Buch allen gegeben.
 the teacher has the students-DAT a book-ACC all-DAT given.
 ‘The teacher gave all the students a book.’ [3]

Here, the indefiniteness of the direct object prevents scrambling, and so there is no way to derive the surface order within the accepted framework.

5 Conclusion

Floating Quantifiers in German are an interesting phenomenon for the Minimalist framework to diagnose. Quantifiers that float are governed by syntactic rules that are congruent with the principles of merge and agreement in minimalism. However, the individual quantifiers obey lexically-specific rules that at times imply the need for more information than a simple featural account can manage. In this paper, I have summarized the arguments of the strongest analyses of this phenomenon. While some analytic frameworks, such as the adverbial treatment [5], or a non-configurational treatment of VP structure [3], are capable of describing a large selection of the observed behavior of floating quantifiers, the same generalities and more can be addressed in the analysis of quantifier float as stranding. Whichever treatment is selected, the German floating quantifiers exist as an interesting problem whose answers have exciting implications for other phenomena in the language.

References

- [1] David Adger. *Core syntax: A minimalist approach*, volume 33. Oxford University Press Oxford, 2003.
- [2] Jonathan Bobaljik. Floating quantifiers: Handle with care. *The Second Glot International state-of-the-article book: The latest in linguistics*, pages 107–148, 2003.
- [3] Giuliana Giusti. Floating quantifiers, scrambling, and configurationality. *Linguistic Inquiry*, 21(4):633–641, 1990.
- [4] Jack Hoeksema. Floating quantifiers, partitives and distributivity. *Partitives: studies on the syntax and semantics of partitive and related constructions*, 14:57–106, 1996.
- [5] Jason Merchant. Object scrambling and quantifier float in german. In *Proceedings-nels*, volume 26, pages 179–194. UNIVERSITY OF MASSACHUSETTS, 1996.
- [6] Dennis Ott. *Local instability: Split topicalization and quantifier float in German*, volume 544. Walter de Gruyter, 2012.
- [7] Heinz Vater. Quantifier floating in german. *The semantics of determiners*, pages 232–249, 1980.