Wh-quantifier float in German diagnoses A-traces and successive cyclicity in vP

Aaron Doliana  doliana@umd.edu
University of Maryland, College Park
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1 Introduction

• Wh-quantifier float in German: so-called “invariant alles” (Pafel, 1991; Giusti, 1991; Reis, 1992; Beck, 1996; Zimmermann, 2007; Heck and Himmelreich, 2017)

(1) Wen1 hast du e1 alles angerufen? (2) [Wen alles1] hast du e1 angerufen?
who.ACC have φ you all called who.ACC all have φ you called
‘Who all did you call?’ ‘Who all did you call?’

(2) quantifier is adjacent, in one constituent with its associate, the XP it quantifies over.
(1) quantifier occurs floated at a distance.

A LONG STANDING QUESTION:

Q: Are floated quantifiers derived from a common source with their associate?

H1: Same Source hypothesis (SSH).1
⇒ (Non-clausal) First-Merge constituency between alles and associate.

H2: Different Source hypothesis: (DSH)2
Floated quantifiers are not derived from a single source.
⇒ floated quantifiers are adverbs.

• DSH analyses exist in a wealth of technical implementations.

1 This includes floating analyses, e.g., Dougherty (1970); Kayne (1975), and stranding analyses, e.g., Sportiche (1988); Shlosny (1991); Merchant (1996); McCloskey (2000); Henry (2012)
2 E.g., Dowty and Brodie (1984); Doetjes (1992); Bohaljik (1995); Koopman (2010); Heck and Himmelreich (2017)

2 Some predictions of Same Source hypothesis

STARTING POINT:

(3) DP
    Wh e1 alles

CONSEQUENCE:

⇒ A float derived from (3) necessarily involves movement, e.g. if “stranding” is just movement (4a), or movement plus some deletion (4b)3

(4) a. Movement = Stranding  b. Movement ∈ Stranding

3 Another known option is what falls under the rubric of “floating” (Dougherty, 1970), where the float is derived by moving the quantifier. This analysis will ultimately be inadequate for alles.
3 Distribution

A float derived from (5) necessarily involves movement.

- Given a sentence, the distribution of \textit{alles} is bounded by the distribution of its associate.
  (Assuming that \textit{alles} cannot move on its own.)

  a. Base position of the associate
  \[ \text{CP wh} \ldots [ \text{VP [DP e₁ \textit{alles}] V }] \]
  b. Positions the associate can reach via scrambling
  \[ \text{CP wh₁} \ldots [ \text{VP [DP e₁ \textit{alles}] [VP ... Vispers]]} \]
  c. Positions the associate can reach via raising
  \[ \text{CP wh₁} \ldots [ \text{VP [DP e₁ \textit{alles}] [VP ... Vispers]]} \]
  d. Positions the associate can reach via successive-cyclic movement
  \[ \text{CP wh₁} \ldots [ \text{VP e₁ \textit{alles}}] \text{[CP wh₂} \ldots [ \text{VP e₂ ... Vispers}]] \]
  e. Not in positions the associate cannot start from or reach via scrambling, raising, successive-cyclic movement

- \textit{Reis-Pafel Generalization:} (Reis 1992, building on Pafel 1991)
  - Right-adjacent to its associate
  - Floated, in the base position of the associate
  - Floated, in positions its associate can reach via scrambling

- Generalizable to (11)

3.1 Base position: \textit{wh}-indeterminates

- The movement options of \textit{wh}-indeterminates (‘WND’) in German are very restricted: no movement to Spec,C (12a), no scrambling (12b) (Haider, 1993: 200, fn2). (Raising OK (12c).)

     WND.ACC have.1SG I NOM seen
     Intended: ‘I saw someone.’
  b. *dass \textit{wen} keiner/’n Lehrer gesehen hat.
     that WND.ACC no-one/a.NOM teacher seen have.3SG
     ‘that no-one/a teacher saw someone.’
  c. dass was droht, anzubrennen.
     that WND.NOM threaten.3SG to burn at
     ‘that something threatens to get burnt.’

- When raising is not an option, \textit{wh}-indeterminates mark their base position

- \textit{Alles} can occur below a \textit{wh}-indeterminate object (13a)

- \textit{zeigen ‘show’} is a DAT\textra ACC verb: a negative quantifier can bind a pronoun from the DAT into the ACC, but not vice-versa (14), and \textit{wh}-indeterminates have DAT\textra ACC word order (15).

- Given a derivation, floated \textit{alles} occurs in a subset of the positions that its associate occupied in that derivation.

  a. Base position of the associate (see section 3.1)
  b. Positions the associate can reach via scrambling
  c. Positions the associate can reach via raising (see example (29))
  d. Positions the associate can reach via successive-cyclic movement
Conversely: Alles cannot occur in positions that the associate cannot reach via scrambling.

- Alles can also occur outside the base position.
- Above a higher wh-indefinite, which marks its own base position in the absence of raising (see section 3.1) (gloss: WND)

\[(16)\text{ Weißt du, } [_{CP} \text{ was}] \text{ der Lehrer } \{\text{alles}\} \{_{VP} \text{ vem}\} e_1 \text{ know.2SG you what.ACC the.NOM teacher ALLES WND.DAT }
\{\text{alles}\} \text{ gezeigt haben soll?}
\text{ ALLES shown have.3SG }
\text{ Do you know what all the teacher supposedly showed to someone?}\]

- Or on either side of a definite DAT, which may itself have scrambled.

\[(17)\text{ Was hat der Lehrer } \{\text{alles}\} \text{ den Schülern } \{\text{alles}\}
\text{ what.ACC have.3SG the.NOM teacher ALLES the.DAT students ALLES gezeigt? show}
\text{ What (all) did the teacher show the students?}\]

- These are positions that the associate itself may reach via scrambling before wh-moving to Spec,C.

\[(18)\text{ Wer hat } \{\text{was}\} \text{ der Schüler } \{\text{was}\}
\text{ who.NOM have.3SG what.ACC ALLES the.DAT students what.ACC ALLES gezeigt? show}
\text{ Who showed the students what (all)?}\]

3.3 Successive-cyclic movement through vP

Alles can occur in positions reached via successive-cyclic movement.

- Reminiscent of conclusions reached by McCloskey (2000) and Henry (2012) for a number of West Ulster English varieties.

- Alles must be clausalmate to a chain link of its associate:

\[(22)\text{ *}_{[CP_1} \text{ Wem}_1 \text{ hat der Peter } e_1 \text{ erzählt, } [_{CP_2} \text{ dass die Maria } \text{ alles}_{1} \text{ die who.DAT have.3SG the Peter told that the Maria all the Susi geholfen hat}]]\]
\text{ Susi.DAT helped have.3SG Intended: 'Who all did Peter tell that Maria helped Susi?'}

\[(23)\text{ *}_{[CP_1} \text{ Der Peter hat } \text{ alles}_{1} \text{ gewusst, } [_{CP_2} \text{ wen}_1 \text{ die Maria } e_1 \text{ liebt}]\]
\text{ the Peter have.3SG all known who.ACC the Maria love.3SG Intended: 'Peter knew who all Maria loves.'}
Nonetheless, *alles* can occur (a) in matrix clause where long movement has taken place to, (b) the clause of origin from which long movement has taken place.

\[ \text{[cp1 Wem} \text{1 hat der Peter}_{vP} \{alles\} \text{gemeint, [cp2 dass die Maria}_{Wend.DAT} \text{hat.}]\] all helped have.3SG

\[ \text{Who all did Peter say/think that Mary helped?} \]

*Alles* could not have moved there itself: scrambling is clause-bound in German.

If instead *alles* was stranded in the position of an intermediate landing site of *wh*-movement, we expect it to be in a verbal projection outside of VP, e.g. vP assuming standard Phase Theory (Chomsky, 2000, 2001).

*Alles* in matrix clause must occur outside the VP: it can no longer occur on either side of a *wh*-indefinite.

Context: it’s about what Peter did.

\[ \begin{align*}
  \text{Max: } & \text{Die hat = } \text{wem} \text{ erzählt.} \\
  & \text{she have.3SG = it } \text{Wend.DAT told} \\
  & \text{‘Max: She’s told it someone.’} \\
\end{align*} \]

\[ \begin{align*}
  \text{Maria: } & \text{Und was } \text{hat sie } \{alles\} \text{VP } \text{wem} \text{ *{alles} erzählt,} \\
  & \text{and what have.3SG she } \text{ALLES } \text{Wend.DAT ALLES told} \\
  & \text{[cp dass der Peter } \text{e1 gemacht hat]?} \\
  & \text{that the Peter done have.3SG} \\
  & \text{‘Maria: And what all has she told someone that Peter did?’} \\
\end{align*} \]

Under the assumption that weak object pronouns are not as high as TP when they occur to the right of a subject (because, e.g., they occupy the leftmost edge of their projection (Müller, 2001)), then matrix *alles* can finally be placed into a projection above VP and below TP.

\[ \begin{align*}
  \text{Was} & \text{hat } \text{[TP der Peter vP] } \{alles\} \text{ vP ihm } \text{vP gestern } \text{vP what.ACC have.3SG the Peter ALLES him.DAT yesterday} \\
  & \text{alles erzählt, [cp dass die Maria } \text{e1 gekauft hat]?} \\
  & \text{ALLES told that the Maria bought have.3SG} \\
  & \text{‘What all did Peter tell him yesterday that Maria bought?’} \\
\end{align*} \]

3.4 Summary

**SAME SOURCE HYPOTHESIS:**

\[ \Rightarrow \text{alles is the sister of its associate in deep structure, float is derived with movement} \]

\[ \Rightarrow \Rightarrow \text{alles is the sister of a chain-link of its associate} \]

\[ \Rightarrow \Rightarrow \Rightarrow \text{alles occurs in the positions of its associate’s chain-links} \]

**DIFFERENT SOURCE HYPOTHESIS:**

- Sensitivity to kind of associate (*ex* subject-object asymmetry) is challenging: DSH analyses expect absolute distribution statements of Q, rather than distribution statements that are relative to the associate. Relative statements are expected only if they follow from the locality restrictions on the Q-associate relation (e.g. Agree in Heck and Himmelreich 2017 or Construal in Bobaljik 1995)

- *alles* in base position is an issue (unless there is VP/vP-internal structure-preserving movement (Heck and Himmelreich, 2017), or massive roll-up movement (Koopman, 2010))

4 A-restriction

\[ (27) \text{DP WH *alles} \]

A float derived from (27) necessarily involves movement.

\[ \Rightarrow \text{alles may be sensitive to the kind of movement involved in “stranding”. I.e., there may be restrictions on what kind of movement can derive the float from the source in (3). (Either due to properties of the movement itself applying to the source, or perhaps due to consequences of the movement type to deletion.)} \]

\[ (28) \text{Distribution generalization for floated alles, Part 2:} \]

Given a derivation, *alles* can occur only in A-trace positions of its associate.

- The movement step from the position in which *alles* occurs is the movement step directly related to the stranding procedure.

- *Alles* may not be stranded by A-movement.

- (McCloskey (2000) reaches the same conclusion for West Ulster English subject movement to TP (though some potential discrepancies with object shift); Fitzpatrick (2006) reaches the same conclusion for Russian, Korean and Japanese floats in A-chains.)

**RAISING:**

- *alles cannot* occur in the base position inside the raising complement: (29)-low;

- *alles can* occur in the derived subject position: (29)-high.

\[ (29) \text{Krass, was1 } \text{e1 } \{alles\} \text{ droht, [TP dem Max]2 e1 } \{alles\} \text{ e2} \]

\[ \text{crass what.NOM all threaten.3SG the.DAT Max all das Leben zu versauen!} \]

\[ \text{the life.ACC to spoil.INF} \]

\[ \text{‘Astonishing, what all threatens to ruin Max’s life!’} \]
Consider the following notes:

- Conversely, the object of a raising complement does not show such an asymmetry:

  (30) Krass, wasx → [Diese App], (e2) {?alles} droht, [TP e1 dem Max cress what.ACC this.app.NOM all threaten.3SG the.DAT Max t₂ {alles} zu versauen!]
  all to spoil.INF
  'Astonishing, what all this app threatens to ruin for Max!'

- The asymmetry between (29) and (30) makes sense given Generalization (28):
  - In (29)-high, (30)-high, and (30)-low, wh-movement may have occurred directly from the position in which alles is floated.
  - In (29)-low, however, the subject must raise (A-move) into the matrix clause.

  - If the subject was A-moves alone into matrix, it strands alles next to an A-trace, violating generalization (28)
  - Note: An alternative derivation that leaves alles next to an A-trace in (29)-low is not available: Squeezing in a step of A-movement will cause an instance of Impoverished Movement whenever the step of A-movement is inevitable.

Abstract Pattern:

- Notation: A₁/2, Ā₁/Ā₂ stand for A/Ā-positions; A-t/Ā-t stand for traces of A-movement/Ā-movement.

  (a) *A-stranding (=* (29)-low)
  (a′) √A-stranding (=√(30)-low)
  (b) √A-pied-piping, followed by A-stranding (=√(29)-high)
  (b′) √A-pied-piping, followed by A-stranding (=√(24)-matrix)

(31)

  a. * [A₂ wh₁ | A₁ Ā-t₁ | A₂ Ā-t₂ | A₁ A-t₂ alles | ||]
  a′. [A₂ wh₁ | A₁ Ā-t₁ | A₂ | A₁ B-t₁ alles | ||]
  b. [A₂ wh₁ | A₁ Ā-t₁ | A₂ Ā-t₁ alles₂ | A₁ A-t₂ | ||]
  b′. [A₂ wh₁ | A₁ Ā-t₁ alles₂ | A₂ | A₁ Ā-t₂ | ||]

Additional Test cases:

- Any configuration in which the wh-phrase must A-move from the base position before wh-moving on to CP

  1. Scrambling+WCO: alles cannot occur to the right of a pronoun bound by its associate in a Weak Crossover (WCO) configuration [(b)-derivation]; alles can occur to the left of a pronoun bound by its associate in a WCO configuration.

  ⇒ Explained if: WCO requires A-movement to a position from which pro can be A-bound.

  (32) b. *[cp wh₁ [TP [dp pro] DP] e₁ alles ||]
       b′. [cp wh₁ [TP [v₁ alles] [dp pro] DP] e₂ ||]

  2. Scrambling+Anaphor binding: alles cannot occur to the right of an anaphor bound by its associate [(b)-derivation]; alles can occur to the left of an anaphor bound by its associate [(b′)-derivation].

  ⇒ Explained if: Anaphor must be bound from an A-position, that can reached only via A-movement.

  (33) b. *[cp wh₁ [TP [dp anaphor] e₁ alles ||]
       b′. [cp wh₁ [TP [v₁ alles] [dp anaphor] e₂ ||]


  ⇒ Explained if: in-situ wh-phrase is separated by alles via scrambling, and if scrambling is A-movement.

  (34) b. *[cp wh₁ [TP wh₂ adverb e₂ alles ||]
       b′. [cp wh₁ [TP [v₂ alles] [adverb e₂ ||]

  - Note: This state of affairs forces the conclusion that the Scrambling that is involved in the configurations 1–3 above must be A-movement (if A-movement vs. Ā-movement is a dichotomy).

  - Actual examples for paradigms can be found here (section 3.4.2):


5 Conclusion

Floated “invariant” alles in German is best analyzed as derived from a single non-clausal constituent containing alles and its associate.

1. Distribution: The distribution of alles (a) is bounded by distribution of associate, (b) varies with the properties of its associate (e.g. subject-object asymmetries).

  ⇒ A distribution statement of alles must make reference to the associate’s chain — the derivational history of its associate, or the set of positions that the associate can in principle occur in in a given sentence.

2. Ā-restriction: Alles can be stranded by Ā-movement, but not by A-movement.

  ⇒ Rather than relying on locality to the overall set of occurrences of its associate (A-chains and Ā-chains alike), both the licensing and the distribution of alles selectively rely on locality to its associate’s Ā-chain.

  ⇒ In general: alles-associate relation shows a strong sensitivity to Ā-chain properties

  ⇒ A single-source analysis/derivation must be possible
COROLLARY OF SAME SOURCE CONCLUSION:

(35) Uniqueness relation between alle and associate

Each occurrence alle A is uniquely mapped to an associate W.

(i) There can be no multiple alle less per one associate (trivial to show):

* [W, ... alle, ... alle, ...]

(ii) There can be no multiple associates per one alle (not trivial to show)

* [W, ... W, ... alle, ...]

References


