

ASYMMETRIC AND BIVALENT COORDINATION IN GERMAN

SLF-COORDINATION

Höhle (1983) discusses constructions in which the subject contained within the first conjunct is able to license a trace within the second conjunct, even though SpecIP1 does not c-command SpecIP2 (Höhle dubbed them SLF -CONSTRUCTIONS (*Subjektslücken Finit*; ‘finite subject gap’)):

- (1) In den Wald [[_C ging [_{IP1} der Jäger]] und [_C fing [_{IP2} t_i einen Hasen]]]
in the forest went the hunter and caught a rabbit
The hunter went into the forest and caught a rabbit
- (2) Das Gepäck ließ er fallen und rannte zum Ausgang
the baggage let he fall and ran to-th exit
He dropped the baggage and ran to the exit
- (3) ASSUMPTIONS:
 - Only like categories coordinate
 - V-2 is movement to C°

PARADOX: The second conjunct has to be merged at the C' level, in order to permit the verbs to move to C°. But at the same time, the second conjunct appears to be situated in a structurally low position, which resides in the c-command domain of the subject in SpecIP (coordination at the I' level or lower)

FOUR ANALYSES

- The second conjunct contains an empty subject (vanValin 1986)
- Asymmetric coordination: [_X] and [_Y], where X and Y are of different category label or different X'-status (Heycock & Kroch 1994, Höhle 1989)
- Adjunction instead of coordination (Büring & Hartmann 1998, Thiersch 1993)
- Conjunction Reduction (Schwarz 1998, Wilder 1994)

SOME PROPERTIES OF SLF GAPS

- The SLF-Gap must be initial in its conjunct. No SLF with objects (Höhle 1990)
- (4) *Die Unterlagen brachte ich ins Büro und zeigte den Kollegen
the files carried I in-the office and showed the colleagues
I carried the files into the office and showed them to the colleagues

- First-conjunct extraction is licit. Second conjunct extraction is blocked (Höhle 1990):

- (5) a. Seine Bücher verkaufte er t und wandte sich der Malerei zu
his books sold he and turned self the painting to
 He sold his books and turned to painting
- b. *Seine Bücher wandte er sich der Malerei zu und verkaufte t
his books turned he self the painting to and sold

- Same conclusion be reached at on the basis of adjuncts. A fronted adjunct cannot be interpreted as part of both conjuncts (Höhle 1990):

- (6) Am Abend fährt Karl in Mainz los und kommt am Morgen in Bonn an
in the evening drives Karl in Mainz off and arrives in the morning in Bonn an
 Karl leaves Mainz in the evening and arrives in Bonn in the morning

- If the second subject is overt, a non-shared constituent cannot reside in the first SpecCP:

- (7) *Am Abend [_C fährt Karl in Mainz los] und [_C kommt Heinz am Morgen in Bonn an]
in the evening drives Karl in Mainz off and arrives Heinz in the morning in Bonn an
 Karl leaves Mainz in the evening and arrives in Bonn in the morning

Thus, the exceptional behavior of SLF w.r.t. the CSC does not generalize to ordinary conjunction.

- Moreover, ATB-extraction is equally blocked (Thiersch 1993; Büring & Hartmann 1998):

- (8) a. Seine Bücher hat er verkauft t und dem Hans t geschenkt
his books has he sold and the Hans given
 He sold his books and gave them to Hans
- b. *Seine Bücher hat er verkauft t und hat dem Hans t geschenkt
his books has he sold and has the Hans given
 He sold his books and gave them to Hans

- Finally, at least in German, the SLF-Gap cannot be an expletive:

- (9) Im Prinzip ist es möglich eine Woche ohne Essen zu überleben und
in principle is it possible a week without food to survive and
 ist *(es) nicht notwendig jeden Tag zu duschen.
is it not necessary each day to shower
 In principle, is it possible to survive for a wee without food and it is not necessary to shower daily

- Conditional in German yield conflicting evidence for the categorial status of the conjuncts: I' for scope of *wenn*, but CP for parallelism:

- (10) Wenn [jemand nach Hause kommt] und [da steht der Gerichtsvollzieher vor der Tür]
if somebody to home comes and there stands the bailiff in front of the door
 If someone comes home and the bailiff is standing there in front of the door

PARADOX: *wenn* takes scope over both conjuncts, but it part of the first conjunct

Asymmetric conditionals can now be combined with SLF-Gaps:

- (2) Wenn [jemand nach Hause kommt] und [sieht t den Gerichtsvollzieher vor der Tuer]
 if somebody to home comes and sees the bailiff in front of the door
 ‘If someone comes home and sees the bailiff in front of the door’

ANALYSES

I. EMPTY SUBJECT ANALYSIS

Van Valin (1986): empty pronominal in second conjunct:

- (11) In den Wald [[_C ging [_{IP1} der Jäger]] und [_C **pro** fing [_{IP2} t_i einen Hasen]]]
in the forest went the hunter and caught a rabbit
 The hunter went into the forest and caught a rabbit

Godard (1989) notes problems for the assumption that the second subject position is occupied by an empty pronominal. While e.g. the subject of the first conjunct can bind an empty pronouns, it cannot bind a full one:

- (12) a. In den Wald ging jeder Jäger und fing t_i einen Hasen]]]
in the forest went every hunter and caught a rabbit
 Every hunter went into the forest and caught a rabbit
 b. *In den Wald ging jeder Jäger_i und er_i fing einen Hasen
in the forest went every hunter and he caught a rabbit

II. ASYMMETRIC COORDINATION

Heycock & Kroch (1993) suggest to parse (1) in terms of asymmetric I'/C'-coordination as in (13).

The subject binds a trace in both conjuncts:

- (13) In den Wald ging [_{IP} der Jäger_i [[_{I'} t_i] und [_{C'} fing [_{IP} t_i einen Hasen]]]]]
in the forest went the hunter and caught a rabbit
 The hunter went into the forest and caught a rabbit

- (14) ASSUMPTIONS:

- I' coordinates with C'
- Asymmetric extraction out of first conjunct possible (vd. also Höhle)

Heycock & Kroch argue that coordination of I' and C' becomes available in (13) because C' behaves like an I'-projection in a restricted set of contexts. Roughly, for them conjunction between C' and I' is possible whenever all licensing requirement that hold between C° and the subject can be fulfilled within the smaller I'-domain.

- (15) PROBLEM: The account fails to capture extraction asymmetries (only 1st conjunct is transparent; no ATB-extraction)
- (16) PROBLEM: The account does not cover similar cases involving vP/AgrOP coordination:
- (17) Maria hat [[_{AgrOP} jedes Buch_i gelesen] und [_{AgrOP} seinen_i Inhalt exzerpiert]]
Mary has every book read and its content excerpted
 “Mary read every book_i and excerpted its_i content”

In (17), the ban on coordination of unlike categories forces AgrOP coordination, whereas the availability of a bound reading for the pronominal variable inside the second conjunct mandates that the second conjunct attaches lower than at the AgrOP level. Crucially, both objects are licensed in their respective SpecAgrOP positions; and there is no smaller node in which the second object could satisfy the licensing requirement of Case checking. It follows that the structure involves genuine AgrOP-coordination.

A similar analysis can be found in Höhle (1990), who advocates predicate conjunction.

III. ADJUNCTION

Thiersch (1993), Buring & Hartmann (1998) suggest that the second conjunct is in fact an I' -adjunct. This captures the extraction facts, and the observation that the first subject can bind the SLF gap as a variable. It leaves open the question why object SLF-gaps are not attested, though.

- (18) OBSERVATION: No ATB-extraction in SLF construction
- (19) a. In Italien kaufte Hans einen Wagen und meldete ihn an (14a/b)
in Italy bought Hans a car and registered it on
 In Italy, Hans bought a car and registered it
 b. Einen Wagen kaufte Hans t und meldete ihn/*t an
a car bought Hans and registered it
- (20) OBSERVATION: VP-coordination allows binding across conjuncts
- (21) Er hat jedem Gast_i Wein empfohlen und ihm_i davon serviert
he has every guest wine recommended and him of it served
 He recommended wine to every guest and served him (wine)

IV. DELETION

Wilder (1994): Conjunction reduction:

- (22) In den Wald [[_C ging [_{IP1} der Jäger]] und [_C ~~der Jäger~~ fing [_{IP2} t_i einen Hasen]]]
in the forest went the hunter and caught a rabbit
 The hunter went into the forest and caught a rabbit

Faces semantic problems: the elided string cannot be interpreted as bound variable. Moreover, fails to account for extraction facts.

ODD COORDINATION

‘Odd Coordination’: Second conjunct is V-final, but non-shared constituent precedes both conjunct (Schwarz 1998):

- (23) Die Suppe wird der Hans essen und sich hinlegen
the soup will the Hans eat and self down-lie
 Hans will eat the soup and lie down

- Schwarz suggests a Gapping analysis of odd coordination:

- (24) Die Suppe wird der Hans essen und ~~der Hans wird~~ sich hinlegen

- Same derivation as for bivalent coordination:

- (25) a. Entweder der Hans wird die Suppe essen oder sich hinlegen
wither the Hans will the soup eat or self down-lie
 Hans will either eat the soup or lie down
 b. Entweder der Hans wird die Suppe essen oder ~~der Hans wird~~ sich hinlegen

- Heycock & Kroch (1994): Analysis in terms of VP-coordination and asymmetric extraction:

- (26) a. Der Hans wird [_{VP} die Suppe essen] und [_{VP} sich hinlegen]
 b. Die Suppe_i wird der Hans [_{VP} t_i essen] und [_{VP} sich hinlegen]

- (27) OBSERVATION: Only well-formed sources can be Gapped

- (28) a. Der Hans soll die Suppe zu essen und sich hinzulegen versuchen
the Hans should the soup to eat and self to down-lie try
 Hans should try to eat the soup and lie down
 b. *Die Suppe soll der der Hans zu essen und sich hinzulegen versuchen
the soup should the Hans to eat and self to down-lie try
 Hans should try to eat the soup and lie down

The odd coordination in b is predicted to be well-formed by H&K, since its derivation involves asymmetric extraction from coordinated VPs, which is for them - by assumption - licit.

- (29) *Die Suppe_i soll der der Hans [[_{VP} t_i zu essen] und [_{VP} sich hinzulegen]] versuchen

- For Schwarz, the example is blocked because the underlying source is ill-formed:

- (30) a. *Die Suppe soll der der Hans zu essen und der Hans soll sich hinzulegen versuchen
 b. *Die Suppe soll der der Hans zu essen und ~~der Hans soll~~ sich hinzulegen versuchen

- Evidence from particles also suggests that the status of the underlying source is crucial:

- (31) a. Der Hans lehnt die Suppe zu essen und sich hinzulegen ab
the Hans turns the soup to eat and self down-lie down
 Hans refuses to eat the soup and lie down
 b. *Die Suppe lehnt der Hans zu essen und sich hinzulegen ab
the soup turns the Hans to eat and self down-lie down

(32) *Die Suppe lehnt der Hans zu essen

Again, H&K cannot handle this set of data.

(33) OBSERVATION: Gapping cannot collaborate with RNR

- (34) a. Die Suppe soll der der Hans zu essen versuchen und
the soup should the Hans to eat try and
 der Hans soll sich hinzulegen versuchen
the Hans should self to down-lie try
- b. *Die Suppe soll der der Hans zu essen ~~versuchen~~_{RNR} und
~~der Hans soll sich hinzulegen versuchen~~

RNR and Gapping can however cooccur in other contexts:

- (35) a. Der Hans lehnt die Suppe zu essen und der Peter sich hinzulegen ab
the Hans turns the soup to eat and the Peter self down-lie down
 Hans refuses to eat the soup and Peter to lie down
- b. Der Hans lehnt die Suppe zu essen ~~ab~~ und der Peter ~~lehnt~~ sich hinzulegen ab

Schwarz points out that the problem can be solved once the exact mechanism underlying RNR are understood.

- (36) *Die Suppe lehnt der Hans zu essen ~~ab~~ und der Peter lehnt sich hinzulegen ab
the soup turns the soup to eat down and the Peter turns self down-lie down
 Hans refuses to eat the soup and Peter refuses to lie down

TWO PUZZLES FROM BIVALENT COORDINATION

In German, coordinate structures joined by the bivalent coordinator *entweder-oder* 'either-or' permit CP-coordination:

- (37) [_{CP} Entweder hat Hans gesungen] oder [_{CP} Peter hat getanzt]
either has H. sung or P. has danced
 "Either John sung or Peter danced"

PARADOX I: Both conjuncts in (37), (46) are verb second clauses. It follows that *entweder* is located in SpecCP of the first conjunct. But *entweder* is part of the complex disjunction operator, and should therefore be parsed in a position that c-commands the CP (e.g. as head of a BooleanP, which in turn takes the CP as a complement; Munn 1993).

- Constructions with *weder-noch* generalize the observation. In verb second clauses joined by *weder-noch* 'neither-nor', *weder* as well as *noch* have to remain inside their respective clauses. (38), (49)

contrasts with (39), where *noch* is located external to the second CP:

(38) [_{CP} Weder hat Peter das Theorem verstanden] [_{CP} noch konnte Maria dem Beweis folgen]
neither has P. the theorem understood nor could M. the proof follow
 “Neither has Peter understood the theorem, nor could Mary follow the proof”

(39) * [_{CP} Weder hat Peter das Theorem verstanden] noch [_{CP} **Maria konnte** dem Beweis folgen]
neither has P. the theoreme understood nor M. could the proof follow

● Contradictory evidence as to the scope domain of the negative operator which is encoded in *weder*:
 Note that *weder* can be ‘immersed’ in the first conjunct, surfacing to the right of the subject:

(40) [_{CP} Peter hat **weder** das Theorem verstanden]
P. has neither the theoreme understood
 [_{CP} noch konnte Maria dem Beweis folgen]
nor could M. the proof follow
 “Neither has Peter understood the theorem, nor could Mary follow the proof”

● Low *weder* does not license NPIs to its left ((42)), indicating that the scope of the negative force encoded in *weder* matches its surface c-command domain:

(41) [_{CP} **Weder** hat **auch nur einer** das Theorem verstanden]
neither has even one (person) the theoreme understood
 [_{CP} noch konnte jemand dem Beweis folgen]
nor could somebody the proof follow
 “Neither has even a single person understood the theorem, nor could somebody follow the proof”

(42) * [_{CP} **Auch nur einer** hat **weder** das Theorem verstanden]
even one (person) has neither the theoreme understood
 [_{CP} noch konnte jemand dem Beweis folgen]
nor could somebody the proof follow

PARADOX II: At the same time, the negative portion of *neither* takes scope over the whole disjunction, in order to ensure that *weder A noch B* is assigned the correct interpretation given in (43)a:

(43) a. ✓ $\neg[A \vee B]$
 b. * $[\neg A] \vee [\neg B]$

The alternative representations according to which negation takes narrow scope w.r.t. both disjuncts, as in (43)b, yields the wrong truth conditions (assuming that the meaning of *noch* is ‘not or’). Also, the second coordinator *nor* acts as a negative polarity item which needs to be licensed by negation.

(44) *Hans hat das Theorem verstanden [_{CP} noch konnte jemand dem Beweis folgen]
Hans has the theoreme understood nor could somebody the proof follow

This observation provides independent empirical confirmation for the assumption that *neither* indeed takes scope over the second conjunct.

MORE ON BIVALENT COORDINATION

(45) QUESTION: Is *weder... noch* negation/dual of *sowohl ...als auch*? (as claimed in Helbig/Buscha)

OBSERVATION I: Unlike other bivalent coordination structures, *entweder - oder* permits CP-coordination with *entweder* in SpecCP:

- (46) Entweder hat Hans gesungen oder Peter hat getanzt
 (47) *Sowohl hat Hans gesungen als auch Peter hat getanzt
 a. *Weder hat Hans gesungen noch Peter hat getanzt
 b. *Nicht nur hat Hans gesungen sonder auch Peter hat getanzt

PARADOX I: In (46), *entweder* is part of first conjunct and not part of first conjunct (qua being the conjunct)

• CP coordination is generally fine if first coordinator resides outside first conjunct:

- (48) a. ?Sowohl Hans hat gesungen als auch Peter hat getanzt
 b. ✓Weder Hans hat gesungen noch Peter hat getanzt
 c. ✓Nicht nur Hans hat gesungen sonder auch Peter hat getanzt W

OBSERVATION II: *weder* cannot be properly parsed

• Negative coordinator *neither* on the one side behaves as if being part of the first conjunct in that it triggers V2, as in (49) and in that the scope domain of *neither* licenses NPI's within the first conjunct (see (49) vs. (50)).

- (49) weder hat auch nur einer das theorem verstanden
 neither has even one (person) the theoreme understood
 noch konnte jemand dem beweis folgen
 nor could somebody the proof follow
 (50) *auch nur einer hat weder das theorem verstanden
 even one (person) has neither the theoreme understood
 noch konnte jemand dem beweis folgen
 nor could somebody the proof follow

But at the same time, the negation encoded in *neither* takes scope over the whole disjunction (where *nor* is NPI counterpart of *or*)

(51) Meaning of (49): not [somebody understood the theorem or somebody....]

PARADOX II: *weder* both takes scope over first conjunct and doesn't do so (NPI)

OBSERVATION III: *weder -noch* also licenses C'-coordination in which *weder* is embedded in first conjunct

- (52) a. Hans sang weder noch tanzte er
 b. *Hans weder sang noch tanzte er

(53) *Hans sang entweder oder tanzte er

PARADOX III: *weder* in (52)a is lower than C' for word-order, but higher than C' for coordination.

OBSERVATION IV: Bivalent coordination apart from *entweder - oder* may not target C', CP.

- Bivalent coordination only with VP and IP, but not CP and C':

- (54) Gestern hat sowohl [[_{IP} Hans gesungen]] als auch [_{IP} Peter getanzt]]
 a. Sowohl hat [_{IP} Hans gesungen]] als auch [_{IP} Peter getanzt]]
 b. weil Hans sowohl [_{VP} sang als auch tanzte]
- (55) a. *Sowohl [_{CP} gestern hat Hans gesungen] als auch Peter hat getanzt
 b. *Gestern sowohl [[_{C'} sang [_{IP} Hans]] als auch [_{C'} tanzte [_{IP} Maria]]]
- (56) Seine Arbeiten sind sowohl wissenschaftlich neu als auch verständlich geschrieben (Helbig Buscha 1993: 468)
- (57) Sie meinte daß er entweder essen muß oder daß er verhungern wird

QUESTION: Why is C'-coordination prohibited with bivalent coordination, but licit with regular?

- (58) Gestern [_{C'} sang Hans ein Lied] und [_{C'} tanzte Maria einene Walzer]
 (59) das Buch [_{CP} OP [_{C'} das du kennst t]] und [_{CP} OP [_{C'} das ich kenne t]]

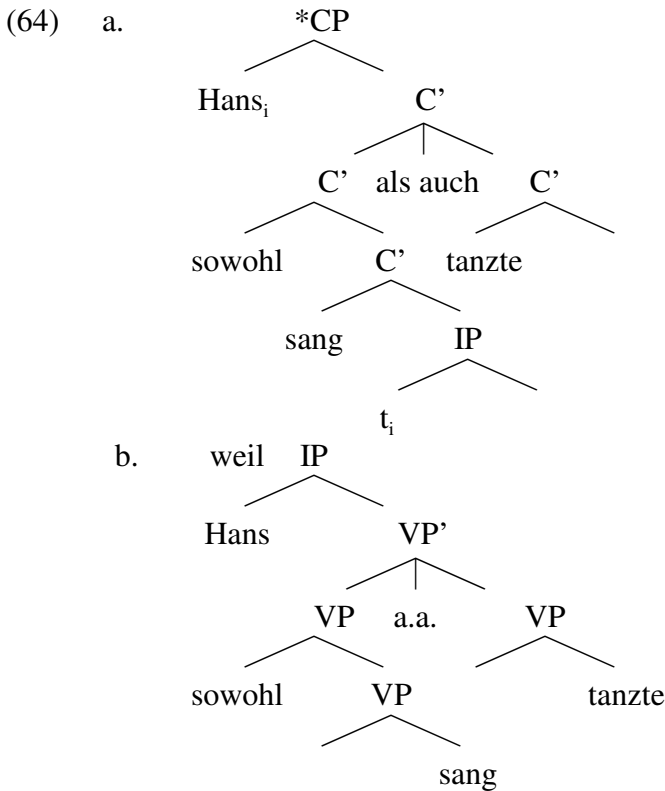
QUESTION: Why is C'-coordination prohibited with *entweder - oder*, (which in turn licenses CP-coordination) unless *entweder* takes up SpecCP?

- | | | | |
|------|--|----|---|
| (60) | *Gestern entweder [[_{C'} sang [_{IP} Hans]] oder [_{C'} tanzte [_{IP} Maria]]] | C' | * |
| (61) | Entweder hat Hans gesungen oder Peter hat getanzt | CP | ✓ |
| (62) | Entweder [[_{C'} sang [_{IP} Hans]] oder [_{C'} tanzte [_{IP} Maria]]] | C' | ✓ |

QUESTION: Why no SLF effect with *entweder - oder*? Due to fact that C'-coordination is blocked?
 (This would be argument for C' and against IP-analysis)

- (63) a. *Entweder sang Hans oder tanzte
 b. Entweder sang Hans oder er tanzte
 cf. c. Im Wald sang er oder t tanzte

- What is the structure?



- does *weder* have same status as *nicht*?

(65) wir sahen nicht Tier noch Mensch

- A non-puzzle: Fact that order subject[^]*sowohl* is ok only with V-end follows from prohibition on C'-coordination:

- (66) a. *Hans sowohl [[_{C'} sang [_{IP} t_i]]] als auch [_{C'} tanzte [_{IP} t_i]]]
 b. weil Hans sowohl [_{VP} sang als auch tanzte]
- (67) a. *Hans entweder sang oder tanzte
 b. weil Hans entweder sang oder tanzte

- Another non-problem: CSC

- (68) a. *Hans hat (entweder) [_{VP} gesungen t] oder [_{VP} getanzt hat]
 b. Hans hat entweder gesungen oder getanzt

DESKRIPTIVE GENERALIZATION(?)

- | | | | |
|----|------------------------|---|---|
| A. | Postverbal konjunktion | ⇒ | V2 ok |
| B. | First conjunct V-end | ⇒ | □[praeverbal konjunktion & empty subjekt] |

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