

Asymmetries in the Syntax and Prosody of Verb-Initial Interpolated Clauses

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The interpolation of verb-initial clauses in German has been analyzed as extraction of a constituent from the embedded clause to the matrix clause in most earlier generative analyses following Thiersch (1978). Reis (1995) argues for a parenthetical analysis instead, based on similarities between alleged matrix clauses and uncontroversial parentheticals. This paper presents new prosodic and syntactic evidence for an extraction account both for the interpolation of true matrix clauses and a newly identified set of verb-initial clauses that serve as evidential adverbials. Differences in prosody between the two types of clauses are linked to differences in their syntactic structure.

1. Introduction

German matrix clauses can be ‘interpolated’ into their complement clause by moving a constituent from the embedded clause to the first position of the matrix clause. Based on the prosody and syntax of these constructions, I argue for a transformational approach to clausal interpolation along the lines of Thiersch (1978), Tappe (1981), Grewendorf (1988), Haider (1993b), and against the base-generated parenthetical approach proposed in Reis (1995). I extend this analysis to clauses that follow apparent non-constituents, which are treated as base-generated parentheticals in most earlier treatments (but see Stowell (2002), Haider (2004)). This move is partly based on important insights from Reis (1995), who showed many parallels between the two types of constructions.

1.1. Clause Order and Prosody

Consider the following three words orders of a sequence of three clauses:¹

- (1) a. [Frída sagte,] [ÁAnna meine], [mórgen werde es régnen.]
 Frida said Anna thinks.subj, tomorrow will.subj it rain
- b. [Frída sagte,], [[mórgen werde es régnen] meine Anna.]
 Frida said tomorrow will.subj it rain thinks.subj Anna
- c. [[[Mórgen werde es régnen,] sagte Frida,] meine Anna.]
 tomorrow will.subj it rain said Frida thinks.subj Anna
 ‘Frida said Anna thinks.subj it will rain tomorrow.’

Each matrix clause forms an independent intonational phrase of its own when it precedes its complement (as in (1a)). A matrix clause is deaccented (or at least extremely reduced in pitch range) whenever its sentential complement or part of it precedes it (as in (1b,c)). This deaccentuation is indicated orthographically by underlining. The matrix clauses are ‘suffixed’ to the preceding intonational domain in those cases. This prosodic subordination between clauses is reminiscent of similar effects in predication structures. Predicates are subordinated exactly when they are preceded by their complement or an element from their complement domain. Consider:

- (2) ‘...weil er ihr...
 ‘...because he...
 a. [versprách] [zu versúchen] [zu schwéigen].
 b. [versprách] [[zu schwéigen] zu versuchen].
 c. [[[zu schwéigen] zu versuchen] versprach.]
 be silent to.try promised
 ‘...promised her to try to be silent.’

Example (2a) illustrates that when predicates take their complement to the right, equal prosodic domains are assigned; but when a predicate is preceded by its complement (e.g. the predicate ‘versuchen’ in (2b)), it is prosodically subordinated. The generalization about predicates can be stated as follows (Wagner 2004):

(3) Prosodic Asymmetry

- When a projecting element A *precedes* its complement B, sequence of two prosodic domains that are on a par: Á B. The last domain provides the ‘nuclear stress’.

¹Embedded V₂ is only possible in ‘bridge’-environments, e.g. after ‘say’, ‘claim’, but not verbs that involve a manner like ‘shout’ or downward entailing environments (‘not say’ or ‘doubt’). Embedded quotations have a different syntactic distribution and will not be discussed. A simple control against quotation readings is subjunctive tense (‘Konjunktiv I’), which disambiguates the sentences toward reported speech.

- When a projecting element *A* follows an element from the complement domain *B*, *A* is subordinated: $\acute{B} A$ (unless *A* is focused or *B* is old information)

The prosody of verb-initial clauses that serve as evidential adverbials, which will be discussed in the next section, differs from that of matrix clauses:

- (4) [Sie sagte dass er wohl,] [*glaube sie*, [nie wieder kommen werde.]
 she said that he particle, believed.subj she, never again come will.subj
 ‘He will never come again, she believed’.

The adverbial clause is separated from its host clause by comma intonation, reflected by a notable break at the position of the orthographic commas in (4). Comma intonation is henceforth coded by *italics*. I will argue that the difference between matrix clauses and adverbial clauses can be derived from syntactic differences, based on the generalization in (3).

1.2. Clause Order and Syntax

For the transformational analysis (Thiersch 1978, Tappe 1981, Grewendorf 1988, Haider 1993b), a sentence like (5b) involves movement of a constituent from the embedded clause to the specifier of *C* in the matrix clause:

- (5) a. [Frída sagte,] [mórgen werde es régnen.]
 Frida said tomorrow will.subj it rain
 b. [[Mórgen], sagte Frida,] [t werde es régnen.]
 Tomorrow said Frida will.subj it rain.
 ‘She said it will rain tomorrow.’

This view was recently challenged in Reis (1995), who argues for a parenthetical analysis of all verb-initial clauses that follow or are interpolated into their complement clause. In this analysis, parentheticals are base generated and adjoined in their surface position. Reis (1995) points out that the transformational analysis cannot straightforwardly account for cases where the interpolated clause follows a non-constituent. In (6), an *XP*, the finite verb, and a cliticized pronoun of the embedded clause together seem to have moved to the first position of the alleged matrix clause. Under standard assumptions, they do not form a constituent:

- (6) [Mórgen wérde es,] sagte Frida, [stárk régnen].
 tomorrow will.subj it said Frida strongly rain
 ‘Tomorrow it will rain again, said Frida.’

Tappe (1981), Haider (1993b) concluded that the interpolated clause in (6) must be a true parenthetical, and not a matrix clause. Reis extends this analysis to cases

like (5). But not all interpolated clauses can be parentheticals, as is also noted in Reis (1995). The following interpolated clause must be a matrix clause, since the host does not constitute a well-formed matrix clause:

- (7) Wo_i glaubt er, dass t_i sie jetzt wohne?
 where thinks he that she now lives
 ‘Where does he think does she live now?’

This paper gives arguments that the clause interpolations in (5) and (6) involve movement, just like (7).

2. Clause Interpolation and Matrix Clauses

This section shows that interpolated clauses can be matrix clauses, elaborating a well known argument from Tappe (1981:204). Some interpolated verb-initial clauses, however, are not matrix clauses, but function as evidential adverbials.

2.1. Interpolated Clauses can be Matrix Clauses

Sentence (8a) is unambiguously a question, sentence (8b) is unambiguously reported speech. If both involved parentheticals, both should be questions.

- (8) a. Wer glaubt Frida wohne in Berlin? (Question)
 who believed Frida lives.subj in Berlin
 ‘Who does Frida believe lives in Berlin?’
 b. Wer fragte Frida wohne in Berlin? (Declarative)
 who asked Frida lives.subj in Berlin
 ‘Frida asked who lives in Berlin.’

If the interpolated clause in (8a) is not a matrix clause, then why is it possible to insert it into a wh-question? ‘Believe’-type verbs are incompatible with question arguments, as (9a.i) illustrates. If it is the matrix clause, on the other hand, the problem disappears, the complement of ‘believe’ is in fact not a question, and the wh-word moves from the embedded clause to the left periphery of the matrix question.

Conversely, (8b) cannot be a matrix question, for the same reason that (9b.ii) is not grammatical. *Fragen* ‘ask’ selects a question or reported question (cf. Karttunen 1977, Lahiri 1991).

- (9) Selection of Embedded Questions/Declaratives
- | | |
|--|---|
| <p>a. ‘believe’ and Selection</p> <p>i. *Frida glaubte ob es schneit.
Frida believed whether it snows</p> <p>ii. Frida glaubte dass es schneit.
Frida believed that it snows</p> | <p>b. ‘Ask’ and Selection</p> <p>i. Frida fragte ob es schneit.
Frida asked whether it snows</p> <p>ii. *Frida fragte, dass es schneit.
Frida asked that it snows</p> |
|--|---|

For (8b) to be a matrix question, the *wh*-word would have to be the *wh*-word of the embedded question and of the matrix question at the same time. This is impossible. The following sentence, although confusing at first sight, is ungrammatical, and illustrates the same point:

- (10) *Who did John ask is in London?

That the interpolated clause is part of the question in (8a) but not in (8b) can be further illustrated by the particle ‘*denn*’, a particle which is only licensed in questions. The presence of the question particle ‘*denn*’ in the interpolated clause (11a) clearly shows that the interpolated clause must be the matrix clause, otherwise it should be ungrammatical. Furthermore, if the interpolated clause is inserted into a matrix question, why is it does not permit ‘*denn*’? The example in (11b) illustrates that the pattern is reversed precisely when the matrix verb selects a question.²

- (11) a. Wer glaubt Frida (*denn*) wohne (**denn*) in Berlin?
 ‘Who does Frida believe lives.subj in Berlin?’
 b. Wer fragte Frida (**denn*) wohne (*denn*) in Berlin?
 ‘Frida asked who lives.subj in Berlin.’

Parentheticals do not change the illocutionary force of their host. Interpolated clauses can. Therefore, we can conclude that they can be true matrix clauses.³

2.2. *Interpolated Clauses can be Evidential Adverbials*

Reis (1995:56) raises a problem looking at interpolated clauses that follow a non-constituent. She assumes with Tappe (1981) and Haider (1993b) that these are not matrix clauses but parentheticals. And yet they are acceptable in questions:

²According to Reis (1995:63-64), ‘*denn*’ is licensed only in matrix clauses. But clearly ‘*denn*’ can occur in *wh*-questions and yes/no questions involving inversion, including embedded ones (at least with verbs like *fragen* ‘to ask’, but not with verbs that seem to embed questions but cannot be speech reports like *wissen* ‘to know’).

³Tappe (1981) argues that the following interpolated clauses are parentheticals, since they cannot change the illocutionary force, an argument adopted in subsequent studies (e.g. Haider (1993a), Haider (2004)):

- (1) a. *Wer *so glaubte* Frida wohnt in Berlin?
 who so believed Frida lives in Berlin
 b. Wer *so fragte* Frida wohnt in Berlin?
 who so asked Frida lives in Berlin

But ‘*so*’ may simply be a particle that is incompatible with questions, like various other particles:

- (2) Ist Maria ja in Berlin?
 Is Mary evidently in Berlin

Whether or not ‘*so*’-clauses are parentheticals can therefore not be established by looking at the paradigm in (1). They pattern with matrix clauses in most other respects, a fact also noted in Pittner (1995).

- (12) Was wird sie, *glaubt er*, jetzt tun?
 what will she believe he now do

This is unexpected unless these interpolated clauses are matrix wh-clauses, since the predicates involved cannot take questions as their arguments (cf. 9). But then (12) must involve moving a non-constituent (i.e. *Was wird sie* ‘what will she’) to the first position of the matrix clause. Reis concludes that these interpolated clauses are in fact parentheticals that behave like matrix clauses.

The example in (12) differs from the previous ones in the intonation of the interpolated clause. It involves comma intonation, i.e. a notable break where the orthographic commas are placed (comma intonation, as discussed in the introduction, is indicated by italics). It is not prosodically subordinated. Another difference to the previous examples is that the interpolated clause does not license subjunctive tense in the embedded clause:

- (13) ?? Was werde sie glaubt er tun?
 what will.subj she thinks he now do

The subjunctive in (13) makes sure that the embedded clause is really the complement of the matrix clause. I propose that the reason for the contrast in (12) vs. (13) is the following: the interpolated clause in (12) is in fact not a matrix clause, but fulfills the function of an evidential adverbial, and is thus similar in meaning and distribution to adverbials of the type ‘according to’:

- (14) a. Was wird sie, *laut Hans*, denn tun?
 what will she, according.to Hans, do
 b. Was wird sie denn tun, *laut Hans*?
 waht sill she do, according.to Hans
 ‘What is she going to do, according to Hans?’

Evidential adverbials show comma intonation, and not prosodic subordination, just like verb-initial adverbials. Furthermore, the two structures are similar in their word order options. Evidential adverbials are dispreferred preceding the finite verb, in contrast to matrix clauses such as (8a):

- (15) a. Evidential Aderbial
 ?? Was, *laut Hans*, wird sie denn tun?
 what, according.to Hans, will she do
 b. Matrix Clause
 Was, glaubt Hans, werde sie denn tun?
 what, believes Hans, will.subj she do

The sentence in (13) is incomplete since it requires the presence of a true matrix clause in order to license the subjunctive tense. Subjunctive is generally not licensed by evidential adverbials:

- (16) ?? Was werde sie, *laut Hans*, denn tun?
 what will she according.to Hans ques.part. do
 ‘What, according to Hans, is she going to do?’

A clear case of a verb-initial clause that cannot serve as a matrix clause is the following:

- (17) ?? Dass er wohl, glaubte sie, nie wieder kommen werde.
 that he particle, believed she, never again come will
 ‘He will never come again, she believed’.

The interpolated clause (17) cannot be a matrix clause, similar to (13), hence the sentence feels incomplete, like a fragment embedded clause. But note that (17) is perfectly grammatical when it is embedded under a matrix verb licensing the embedded clause. The interpolated clause inside of the embedded clause (*glaube sie* ‘she believes’), I propose, is used as an evidential adverbial:

- (18) Sie sagte, dass er wohl, *glaube sie*, nie wieder kommen werde.
 she said that he particle, believed.subj she, never again come will.subj
 ‘He will never come again, she believed’.

The incompleteness of the examples in (13) and (17) can be attributed to the lack of a true matrix clause that would license the embedded clause syntax (subjunctive/complementizer).⁴ Some verb-initial interpolated clauses are evidential adverbials, and cannot function as matrix clauses. They differ with respect to their word order options and their prosody from matrix clauses. They are arguably not true matrix clauses, just as was concluded in Tappe (1981) and Haider (1993b), but act as sentential adverbials (cf. Bresnan 1968).

⁴This argument presupposes that sentences with subjunctive are embedded clauses, that can only occur in isolation as fragments, just like sentences with complementizers. The following context licenses a fragment answer with an embedded clause in indicative. V_2 order is disallowed, since ‘doubt’ does not license embedded V_2 . Likewise, using the subjunctive with ‘doubt’ is at least marked:

- | | |
|---|--|
| <p>(1) What bezweifelt Anna?
 what doubts Anna</p> <p>a. * Maria ist krank.
 Mary be.subj sick</p> <p>b. dass Maria krank ist.
 that Mary sick be</p> <p>c. ?dass Maria krank sei.
 that Mary sick be</p> | <p>(2) What hat Anna gesagt?
 what has Anna said</p> <p>a. Maria ist krank.
 Mary be.subj sick</p> <p>b. dass Maria krank ist.
 that Mary sick be</p> <p>c. dass Maria krank sei.
 that Mary sick be</p> |
|---|--|

If we replace ‘doubt’ with ‘said’, then both the use of subjunctive and the use of V_2 order in the fragment becomes grammatical. V_2 declaratives with subjunctive in isolation are often called reported speech matrix clauses, and isolated questions with verb-final order ‘musing questions’. They are used in free indirect style. I assume they are fragments, just like fragment answers that include only a DP with accusative case, which are only licensed in a context where an appropriate wh-question is at issue (Merchant 2003). ‘Free indirect Style’ can then be characterized as a sequence of fragments. This is further discussed in the next section.

2.3. Indirect Speech Reports

A second class of apparent matrix clauses following non-constituents occur in indirect speech reports. The following is a real-life example of a declarative sentence with an interpolated question-embedding matrix clause (19a), which remains grammatical when the matrix clause follows the finite verb (19b), just as expected under Reis's parenthetical approach:

- (19) a. Wer fragte er drohend, wolle sich dieser Vorstellung in einer Region widersetzen, in der die meisten Menschen bislang nichts ausser Tyrannei und Not erlebt haetten.
 'Who, he asked threateningly, wants to object against this idea in a region, in which most people so far have experienced nothing by tyranny and want.'
www.nahost-politik.de/irak/usa.htm
- b. Wer wolle sich, fragte er drohend, dieser Vorstellung in einer Region widersetzen, in der die meisten Menschen bislang nichts ausser Tyrannei und Not erlebt haetten.

An even more dramatic example of a non-constituent preceding an interpolated clause is the following:

- (20) Ob sie denn, fragte ein Kritiker, "eine Massenprügelei" riskieren wollten?
 whether they particle asked a critic a mass fight risk would
 'A critic asked whether they would risk a mass fight.'
free.pages.at/boonk/Berichte/92/231292taz.htm

An analogous case involving an embedded 'that'-clause:

- (21) Dass er wohl, fuhr sie fort, nie wieder kommen werde.
 that he particle, continued she on, never again come will
 'He will never come again, she continued'.

These examples illustrate that interpolated clauses following non-constituents seem to be able to function as matrix clauses. But these examples share a property: they involve verbs that are used to report speech. It is worth noting that indirect speech reports can be licensed just by context, in 'free indirect style'. This is essentially a sequence of fragment speech reports without matrix clauses. For example in a sequence of speech reports the following fragment would be possible:

- (22) Ob sie denn "eine Massenprügelei" riskieren wollten?
 whether they particle a mass fight risk would
 'Whether they would risk a mass fight.'

Interpolated clauses in reported speech (such as 'she continued') might actually be able to act as adverbials, indicating the source of information, similar to evidentials. But their subordinated prosody distinguishes them from the evidential parentheticals of the preceding section. Alternatively, matrix clauses in speech reports might simply differ from other matrix clauses in their word order options. A closer look at these constructions would be necessary.

3. *Movement and C-Command*

This section presents evidence that matrix clause interpolation involves movement and leaves c-command relations intact, pointing to a movement analysis that involves full reconstruction at LF. Evidence for movement and c-command is also presented for adverbial clauses, which differ from matrix clauses in not allowing variable binding into their complement clause.

3.1. *Clause Interpolation involves Movement*

Matrix clause interpolation involves movement of/from the complement of the embedding verb. The examples below involve matrix clauses with a propositional argument gap inside strong islands:

- (23)
- a. Relative Clause Island
 - * Frösche erzählte davon ein Biologe der glaubte t hätten eine Seele.
 frogs talked about.it a biologist who believed have a soul
 - b. Adjunct Island
 - * Frösche beharrte darauf Frida als sie erzählte t hätten eine Seele
 frogs insisted on.it Frida when she said have a soul
 - c. Complex DP-Island
 - * Frösche entlarvte das Marias Behauptung t sage Anna. hätten eine
 frogs revealed it Mary's claim that Anna said have a
 Seele
 soul

These sentences obey the restrictions on verb-initial parentheticals in Reis (1995): The linear order of the host clause is unaltered, and the interpolated clause is verb-initial; and yet they are ungrammatical. Corresponding matrix clauses without extraction are completely acceptable:

- (24)
- a. *Ein Biologe erzählte davon der glaubte* Frösche hätten eine Seele.
 'A biologist talked about it who believed frogs had a soul.'
 - b. *Frida beharrte darauf als sie erzählte* Frösche hätten eine Seele.
 'Frida insisted on it when she said that frogs have a soul.'
 - c. *Das entlarvte Marias Behauptung Anna sage* Frösche hätten eine Seele,
 'That was revealed by Mary's claim that Anna said frogs have a soul.'

It is not the case that the argument in the interpolated clause always has to originate in the highest clause. Longer extractions are possible, as long as they obey island constraints:

- (25) Frösche, glaubte Frida behaupten zu müssen, hätten eine Seele.
 frogs believed Frida claim to must, have.subj a soul
 'Frida believed to have to claim that frogs have a soul.'

The presence of movement does not rule out a parenthetical analysis, however. Similar strong island effects are shown for *as*-parentheticals in Potts (2002). Consider a German ‘*wie*’- and ‘*so*’-clauses (a,b), but also verb-initial interpolated clauses following non-constituents:

- (26) a. * Frösche haben eine Seele so erzählte davon ein Biologe der glaubte t.
 frogs have a soul so talked about.it a biologist who believed
- b. * Frösche haben eine Seele wie ein Biologe davon erzählte der glaubte t.
 frogs have a soul as a biologist about.it talked who believed
- c. * Frösche hätten erzählte davon ein Biologe der glaubte t eine Seele .
 frogs have talked about.it a biologist who believed a soul

Potts (2002) proposes a parenthetical analysis for *as*-clauses and explains strong island effects by zero-operator movement. The movement establishes a local relation with the antecedent, which is the constituent the parentheticals adjoin to, i.e. their sister. The placement of a parenthetical within the modifiee is derived by Heavy-XP-Shift. An alternative view would be to follow Ross (1973) in allowing for ‘slifting’, that is the promotion of an embedded clause to matrix clause status by movement. I will return to this discussion in the last section. For now, we can conclude that both interpolated matrix clauses and adverbial clauses show evidence for movement.

3.2. Interpolated Clauses C-command the Embedded Clause

If interpolated clauses are parentheticals inserted into a matrix clause in their surface position, they should not c-command the material in the host clause, especially the part that precedes them. This section summarizes evidence for c-command into the host clause, in support of the transformational analysis.

First, interpolated clauses are not c-commanded by their material preceding them, as is evidenced by scope facts, the absence of NPI licensing into the interpolated clause, and standard binding tests:⁵

- (27) a. Scope (some > almost everyone, * almost everyone > some)
 Fast jeder, (so) glaubten manche Studenten, habe gefuscht.
 almost everyone, so believed some students, has cheated
- b. NPI Licensing into parenthetical
 * Kein Student, (so) sagte je ein Mensch, habe gefuscht.
 no student, so said ever a human.being, has cheated
- c. Variable Binding into parenthetical
 * Jeder Student_i, (so) sagte er_i/seine_i Mutter, hat eine Chance.
 every student, so said he/his mother, has a chance

⁵I include the pattern for ‘*so*’-clauses, which are often taken to be clear cases of parentheticals Tappe (1981), Haider (1993a), Reis (1995), although they pattern mostly just like matrix clauses, as we will see.

- d. No Condition C effect into parenthetical
 Er_i habe, (so) sagte Paul_i leise, keine Ahnung.
 he has, so said Paul silently, no clue

The interpolated clause c-commands the material of the host:⁶

- (28) a. Condition C effect induced by Interpolated Clause
 * Paul_i, (so) glaubte er_i, habe keine Ahnung.
 Paul, so believed he has no clue
- b. Variable Binding from Interpolated Clause
 Seine_i Prüfung, (so) glaubte jeder Student_i sei schwierig gewesen.
 his exam so believed every student be difficult been
- Ihre_i Prüfung, (so) glaubten viele Studenten_i sei schwierig gewesen.
 his exam so believed every student be difficult been

A similar pattern holds for interpolated clauses preceded by non-constituents. Variable binding seems a bit harder in those cases:

- (29) a. Scope (some students > almost everyone, * almost everyone > some students)
 Fast jeder habe, (so) glaubten manche Studenten, gefuscht.
 almost everyone has, so believed some students, cheated
- b. Condition C effect induced by Interpolated Clause
 * Paul_i, habe, (so) sagte er_i leise keine Ahnung.
 Paul has, so said he silently, no clue
- c. Variable Binding from Interpolated Clause
 ? Seine_i Prüfung sei, (so) glaubte jeder Student, zu schwierig gewesen.
 his exam be believed every student too difficult been
- ? Ihre_i Prüfung sei, (so) glaubten viele Studenten, zu schwierig gewesen.
 his exam be so believed every student too difficult been

Interpolated matrix clauses c-command the material of the complement clause. The c-command facts point to an analysis that posits a movement for the interpolation of clauses. The movement step reconstructs obligatorily at LF.⁷ Interpolated adverbial clauses show a different pattern:

⁶ Since V_2 resists embedding under negation, NPI licensing from the interpolated clause into the embedded clause cannot be tested:

- (1) a. * *Frida sagte nicht*, morgen werde es regnen.
 Frida said not tomorrow will it rain
- b. * *Frida bezweifelte*, morgen werde es regnen.
 Frida doubted tomorrow will it rain

'Replacive' (Jacobs 1991) negation is possible in (a), and even focused negation allows embedded V_2 —only non-contrastive sentence negation is ruled out.

⁷ McCawley (1982) shows further evidence that parentheticals seem to take wide scope and attach higher in the structure than their surface position suggests.

- (30) a. Scope (some students > almost everyone, * almost everyone > some students)
 Fast jeder hat, wie manche Studenten glaubten, gefuscht.
 almost everyone has, as some students believed, cheated
- b. Condition C effect induced by Interpolated Clause
 Paul_i/er_i hat, wie er_i/Paul_i selbst zugibt, keine Ahnung.
 Paul has, as he himself admits, no clue
- c. Variable Binding from Interpolated Clause
 ?? Seine_i Prüfung sei, wie jeder Student zugab, zu schwierig gewesen.
 his exam be as every student admitted too difficult been
 ?? Ihre_i Prüfung sei, wie viele Student zugaben, zu schwierig gewesen.
 his exam be as every student admitted too difficult been

Cases of verb-initial interpolated adverbial clauses also differ from matrix clauses with respect to variable binding. While the matrix clause can variable-bind both into the embedded clause and its sentential adverbial, no variable binding is possible between the embedded clause and the adverbial:

- (31) a. Jede Tänzerin_i sagte dass ihr_i Lehrer,
 every dancer said that her teacher,
meine zumindest ihr_i Partner, nicht sehr gut sei.
 thinks at.least her partner, not very good be
- b. * Gesine glaubt dass jeder Tänzerin_i,
 Gesine believes that every dancer,
meine zumindest ihr_i Partner, nicht sehr gut sei.
 thinks at.least her partner, not very good be
- c. * Gesine glaubt dass ihr_i Partner,
 Gesine believes that her partner,
meine zumindest jede Tänzerin_i, nicht sehr gut sei.
 thinks at.least every dancer, not very good be

According to Reis (1995), all of these constructions should be analyzed as parentheticals. The differences between the interpolated clauses in (28) vs. (30) and (31) illustrate that a uniform analysis is unwarranted, and many constructions hitherto taken as uncontroversial parentheticals (e.g. ‘so’-parentheticals) patter just like matrix clauses. A similar conclusion is reached in Haider (2004).

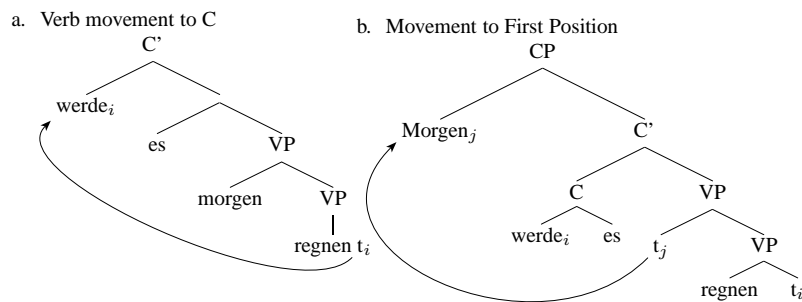
I will attribute the differences between matrix clauses and adverbial clauses to different derivations: Adverbial clauses start out as the matrix clause, and their complement moves and projects to become the new matrix clause, a case of slifting. The next section motives this approach.⁸

⁸Assuming analysis parentheticals adopted in Potts (2002), many of the facts reported here are compatible with the parenthetical view. The next section briefly discusses the difference between the approaches.

4. Deriving the Surface Word Orders

I assume that in a German matrix clause, the finite verb raises to a higher functional projection, say C (32a). Declarative clauses require a syntactic constituent to precede the verb. This ‘first position requirement’ (maybe an EPP feature in C) is satisfied by moving the closest XP the specifier position (a case of ‘attract closest’). Pronouns can be skipped, since they can cliticize to the verb (32b):

(32)



Clausal interpolation can now be derived by successive cyclic movement to the first position of the matrix clause (cf. Thiersch 1978, Tappe 1981):

(33) [[Morgen] sagte sie] [werde es regnen]
 ‘Tomorrow it will rain, she said.’

The cases where the string that precedes the verb of the matrix clause is not a constituent require a different derivation:

(34) Morgen werde es, glaubt sie, stark regnen.
 tomorrow will it said she strongly rain
 ‘Tomorrow it will rain again, she said.’

I propose that the interpolated clause starts out as an argument-taking matrix clause. The linear position of the clause is derived by two independent movement steps, following a proposal in Potts (2002) for the placement of ‘as’-parentheticals: First, the complement moves to the first position of the matrix clause; second, Heavy-XP-Shift moves part of the embedded clause to the right.

Departing from Pott’s analysis, I propose that the first movement step is not empty-operator-movement but overt movement of the complement clause. This movement step goes along with promoting the embedded clause to be the new matrix clause, a case of slifting (Ross 1973).⁹

⁹Given the discussion of the previous section, it seems that movement of the entire complement clause as in (35) is only possible for evidential clauses and those denoting speech reports, i.e. those that function as adverbials rather than true matrix clauses, and in reported speech. Why these derivations are not possible for true matrix clauses does not follow from anything discussed here, and has to be left open at this point.

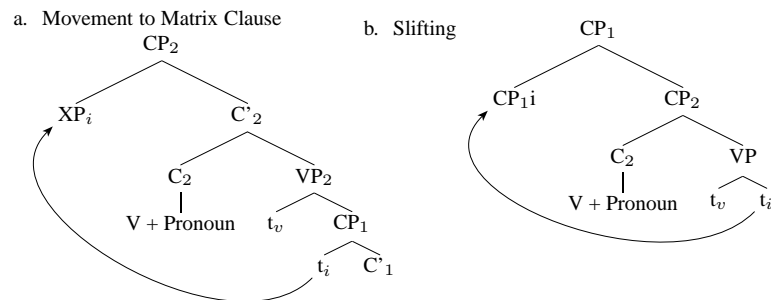
- (35) a. [glaubte sie] [Morgen werde es stark regnen]
 b. [[Morgen werde es stark regnen] glaubte sie]
 c. [[Morgen werde es] sagte sie] [stark regnen]
 ‘Tomorrow it will rain, she said.’

The analysis based on Heavy-Shift sits well with the intuition that the ‘extraposed’ part following an intraposed sentence should be ‘heavy’:

- (36) a. ? Morgen werde es, sagte sie leise, regnen.
 Tomorrow will it, said she silently, rain.
 b. Morgen werde es, sagte sie leise, stark regnen.
 Tomorrow will it, said she silently, rain hard.

The difference in prosody between matrix clauses and adverbial clauses is due to the difference in the projection line. An interpolated matrix clause projects. An interpolated adverbial starts out as the matrix clause, but then the embedded clause is raised and projects, creating an adjunction structure¹⁰:

(37)



The generalization about prosody can now be stated as follows: Within each maximal projection (CP, VP), the projecting element (in this case the verb in C) and the material attached to it (in this case the pronoun and adverbial) is prosodically subordinated and suffixed to a preceding non-projecting category (here, the XP in the first position), essentially the generalization observed for predicates in (3).

The analysis is compatible with the empty-operator approach for parentheticals proposed in Potts (2002), which essentially assumes a similar difference in projection between matrix clauses and parentheticals. One reason to prefer the slifting approach here is in the empty-operator analysis, it remains unclear why the parentheticals are verb-initial. It cannot be the empty operator that fills the first position of the parenthetical: verb-initial parentheticals are impossible in sentence initial position. The parentheticals are genuine V_2 clauses, that need an

¹⁰I assume, that slifting prevents reconstruction and is thus responsible for the impossibility of variable binding.

overt constituent in first position. The slifting derivation in (37) can simply treat the movement of the embedded clause as overt movement to first position.¹¹

This paper presented evidence that some, but not all verb-initial interpolated clauses are matrix clauses. Both matrix and adverbial clauses are ‘interpolated’ by movement. The prosody of interpolated matrix clauses and adverbial clauses was linked to a general prosodic asymmetry (3).

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References

- Bresnan, J. (1968). Adsententials. Ms. MIT.
- Grewendorf, G. (1988). *Aspekte der deutschen Syntax*. Narr, Tübingen.
- Haider, H. (1993a). *Deutsche Syntax - Generativ*. Gunter Narr, Tübingen.
- Haider, H. (1993b). ECP-Etüden: Anmerkungen zur Extraktion aus eingebetteten Verbzweitsätzen. *Linguistische Berichte* 145, pp. 185–203.
- Haider, H. (2004). In Parenthese. Ms. UMass.
- Jacobs, J. (1991). Negation. von Stechow, A. & D. Wunderlich (eds.), *Semantik. Ein internationales Handbuch der zeitgenössischen Forschung. (HSK 6)*, de Gruyter, Berlin.
- Karttunen, L. (1977). Syntax and semantics of questions. *Linguistics and Philosophy*.
- Lahiri, U. (1991). *Embedded Interrogations and predicates that embed them*. Ph.D. thesis, MIT.
- McCawley, J. D. (1982). Parentheticals and discontinuous constituent structure. *Linguistic Inquiry* 13, pp. 91–106.
- Merchant, J. (2003). Fragments and ellipsis. To appear in *Linguistics in Philosophy*.
- Pittner, K. (1995). Zur Syntax von Parenthesen. *Linguistische Berichte* pp. 85–108.
- Potts, C. (2002). The syntax and semantics of *as*-parentheticals. *Natural Language and Linguistic Theory* 20, pp. 623–689.
- Reis, M. (1995). Extraction from verb-second clauses in German? Lutz, U. & J. Pafel (eds.), *On extraction and extraposition in German*, John Benjamins, Amsterdam, pp. 45–88.
- Ross, J. R. (1973). Slifting. Gross, M., M. Halle & M.-P. Schützenberger (eds.), *The Formal analysis of natural languages. Proceedings of the first international conference*, Mouton, The Hague, pp. 133–169.
- Stowell, T. (2002). (Parenthetically). Ms. UCLA.
- Tappe, T. (1981). Wer glaubst Du hat recht? Einige Bemerkungen zur Comp-Comp-Bewegung im Deutschen. Kohrt, M. & J. Lenerz (eds.), *Sprache und Formen: Akte des 15. Linguistischen Kolloquiums Münster 1980*, Niemeyer, Tübingen, vol. 1 of *Linguistische Arbeiten*, 98, pp. 203–212.
- Thiersch, C. (1978). *Topics in German syntax*. Ph.D. thesis, MIT.
- Wagner, M. (2004). Prosody as a diagonalization of syntax. evidence from complex predicates. Wolf, M. & K. Moulton (eds.), *Proceedings of NELS 34 at Stony Brook*. Available online at web.mit.edu/~chael/www.

¹¹Perhaps the strongest empirical evidence against slifting analysis of ‘as’-parentheticals in particular are cases where the antecedent for the zero-operator does not have the correct syntactic shape to be its actual argument (Potts 2002:658/659). I will not discuss this problem further in this paper.