ON PARENTHETICALS (IN GERMAN)

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Abstract. Optional constituents of a clause which, according to a couple of criteria, are commonly called parentheticals show quite diverging properties with respect to structurally determined aspects of constituency and interpretation like constituent placement, scope or bound variable reading of pronominals. One type of parenthetical string may form regular constituents of a clause, if the string is not parenthetically marked, and shows the same facts about interpretation like other regular constituents. The other type may not. Strings of the former type have to be represented as parts of their host at both levels of syntactic representation: c-structure and f-structure. Parentheticals of the latter type must be treated in a different way, since they exhibit properties usually attributed to strings which are not constituents of the host. I will propose an analysis of this type which rests on the integration of the parenthetical string into the c-structure of the host but its separate non-integrated representation at f-structure.[*]

1 (Something like) a Definition

Parentheticals are usually characterized by a couple of quite heterogeneous empirical properties. Separation by intonational breaks from the surrounding constituents is the principle characteristic of this type of constructions (in written text typographical means like dashes and parentheses function as surrogates). Parentheticals are optional; this means that obligatory constituents of a clause cannot be parenthetically separated from their co-constituents. Parentheticals express a comment by the speaker on the content of the hosting clause. Furthermore, it is often assumed that parentheticals are not fully integrated into the syntactic structure of the hosting clause. This diversity of qualifications points to the difficulties of giving a concise conclusive explanation of this type of construction. On the other hand, parentheticals occur quite frequently in corpora.[1] They thus deserve some attention.

In the following, I will try to shed some light on the question to what extent a genuine syntactic account of parenthetical constructions is possible, as well as appropriate. Although the empirical base of this study is restricted to German, some of the theoretical results may be helpful to account for parenthetical constructions in other languages as well. But some caution required. Parentheticals may exhibit rather language specific properties with respect to their internal structure, as well as to their distribution.

After a short survey of different instances of parenthetical constructions, I will concentrate on sentential parentheticals in order to account for a certain type of parenthetical construction, which I will refer to as *syntactic parentheticals*.

2 Parentheticals in German – Category and Distribution

If we adopt the prosodic and pragmatic definition as a means of detecting parentheticals in a clause, it seems to be hopeless to also provide for a consistent *syntactic* characterization of all the strings which are identified.

To begin with, there is no restriction with respect to syntactic category. Any type of maximal category may be inserted parenthetically into (a constituent of) a clause (cf. (1) examples extracted from the TIGER-corpus).[2] The same holds for the determination of grammatical func-

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[1] About 4 – 5% of the sentences in the TIGER-Corpus, which comprises 40.000 sentences of German newspaper text contain a string which is tagged as a parenthetical.

[2] There is no example of a parenthetical formed by an adjective phrase (AP) in (1). This is due to the fact that these parentheticals are all clause level in the sentences they are excerpted from. Parentheticals formed by attributive APs are common within NPs.

tion, at least in principle. Adjuncts and adjectival modifiers are appropriate candidates par excellence (cf. (2a-c), (2e)), but even governable grammatical functions may provide a parenthetical. Of course, this is only possible if the respective function is optional. Mostly this is not the case, but there are exceptions (cf. (2d), (2f))

(1) a. ... (etliche sind allerdings noch unbesetzt) ...   CP/V2-clause
         some   are however   still   not filled
     b. ... – das sind Zinszahlungen   über den Bankschalter in bar – ...   CP/V2-clause
         that are payments of interest across the bank counter in cash
     c. ... (seien sie   struktureller oder anderer Art) ...   CP/V1-clause
         be   they structural   or   other   kind
     d. ... die italienische Kriegsmarine, auf Flottenbesuch in Venedig,...   PP
         the italian   navy   on fleet visit   in Venice
     e. ... 1987, nach Marta Feuchtwangers Tod,...   PP
         1987 after Marta Feuchtwangers death
     f. ... – unter   ihnen viele Obstbauern – ...   PP[3]
          among them many fruit farmers
     g. ... (davon 80 Prozent mit öffentlichen Kunden) ...   PP
         that-of 80 percent with public   customers
     h. ..., weltweit   ein Spitzenreiter, ...   NP
         worldwide a   leader
     i. ..., gleichsam ein Nono aus   Fernost, ...   NP
         virtually   a Nono from far east
     j. ... , jetzt zumeist als Genossenschaft oder GmbH geführt, ...   VP
          now mostly   as cooperative   or   Ltd.   led
     k. ..., von Klose selbst bei hitzigen Bundestagsdebatten   bloß   als Halt   für
          by Klose even in heated   parliamentary debates merely as holder for
         den rechten Oberarm   eingesetzt, ...   VP
         the right   upper arm   employed

(2) a. Theo hat die Tür   – mit einem Dietrich – geöffnet   PP adjunct
         Theo has the door – with a   pass key – opened
     b. Theo ist – ohne   anzuklopfen – eingetreten   VP adjunct
         Theo is – without knocking   – entered
     c. Theo ist – als   es zu regnen begann – eilig   nach Hause gelaufen   CP adjunct
         Theo is – when it to rain   began – quickly to   home   run
     d. Theo hat reichlich – insbesondere Burgunder   – getrunken   NP argument
         Theo has plenty   – in particular Burgundy wine – drunk
     e. einen – gewiß   vermeidbaren – Fehler   habe ich gestern   gemacht   AP modifier
         a   – certainly avoidable   – mistake have I   yesterday made
     f. ein – auf seine Verfehlungen – stolzes Individuum   PP argument
         a – on his   offences   – proud individual

Parenthetical placement is also quite liberal in German. A parenthetical may be inserted at clause level (cf. (2a-d)) or at constituent level (cf. (2e/f)). There is only one condition that has to be observed: The parenthetical must be preceeded by at least one constituent of the hosting clause, it need not be an immediate one.

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[3] The categorization of the parenthetical as a PP in this and the following example may be problematic, since the parenthetical consists of a PP and a NP which functions as the subject of a predicate formed by the PP.

But even if an empirical scenario like the one sketched in (1) and (2) may cast doubt on an attempt to give an overall syntactic characterization of what is conceived of as a *parenthetical*, it is reasonable to consider whether every string of terminal elements that may form a parenthetical may also occur as a regular constituent of a clause or as its regular subconstituent in a non-parenthetical context. From this point of view some non-trivial questions arise, since there are actually certain constructions in German which prohibit a non-parenthetical use of a parenthetical string. Before going into details of an analysis, the notion of a *regular constituent* must be clarified. This clarification amounts to both conditions of structural representation and some empirical means by which a non-regular constituent can be detected.

3 Regular and Non-Regular Constituency

A *regular constituent* is a string of elements with properties, which are reasonably attributed to conditions of syntactic structure representation.

The first criterion that comes to mind is *inclusion*. A string, for instance, which is preceded and followed by a constituent of a clause is also a constituent of that clause. This, of course, is only a sufficient but not a necessary condition, since it does not hold for the first and the last constituent.

In a language like German, which permits some variation in constituent placement at clause level, the option of variable placement of a string is a second criterion of constituency. In declarative main clauses, the position in front of the finite verb (the so called *Vorfeld*) must be filled by – exactly – one constituent. Otherwise the clause is restricted to interrogative mood. Apart from some phonologically motivated exceptions, any constituent that occurs in a position following the finite verb can also fill the position before. Hence, in (3) the two phrases *Theo* and *die Tür* are qualified as constituents of the clause.

(3)   a. Theo **hat** die Tür   geöffnet
           Theo has the door opened
      b. die Tür   **hat** Theo geöffnet
           the door has Theo opened

Capability of placement in the pre-finite position may thus count as a second characteristic of a regular constituent of a clause.

On the other hand, certain conditions on interpretation are determined by syntactic structure, namely scope relations between elements or phrases and the bound variable reading of a pronoun in the context of a quantified NP.

For certain scope relations to hold between two strings, these strings must be represented as part of the overall syntactic structure of a clause. The specific content of the relation is determined by the structural relation between the scope sensitive elements within the hosting structure and by their lexical content. So for instance, the scope of the negative element *nicht* in (4) comprises the NP *die Tür* only if it precedes the latter, as in (4a) but not in (4b).

(4)   a. Theo hat **nicht** die Tür geöffnet   Neg > OBJ
           Theo has not   the door opened
      b. Theo hat die Tür   **nicht** geöffnet   *Neg > OBJ
           Theo has the door not   opened

Likewise scope relations between different quantified NPs as well as a bound variable reading of a pronoun are determined by syntactic structure.

Constituent placement, scope of negation and the availability of a bound variable reading of a pronoun will be used in the following sections as a means to determine the degree of syntactic integration into a host clause. A given string is regarded as a *regular constituent* if it matches all the relevant empirical conditions. A *non-regular constituent*, on the other hand, is a string which only partially meets them. Finally, a *non-constituent* is one that does not match any.

If this tripartite differentiation has substantive content, the question arises of how to structurally represent *non-regular constituents*. The two other cases are unproblematic.

In a multi-level representation of syntactic structure as postulated in Lexical Functional Grammar, the aforementioned aspects of syntactic structure are modelled at the two levels of representation: c-structure and f-structure.[4]

A *regular constituent* of a clause may be conceived of as a string that is part of the c-structure as well as the f-structure representation of its hosting clause. A *non-regular constituent*, on the other hand, is a string which is only part of the c-structure of the host but not of its f-structure. In the following, I restrict myself to clause level phenomena of regular and non-regular constituency. An extension to constituent level calls for some further refinements, but is nevertheless possible.

4 Regular Constituent Parenthetical

We may now consider the examples from section 2 once again. As a matter of fact, all parentheticals are surrounded by constituents of their host – setting apart for the moment cases in which they immediately follow a clause. Due to inclusion, they are at least non-regular constituents. In a large number of cases, the parenthetical is also a regular constituent of the hosting clause. This holds for the examples (2a) – (2d) which exhibit all of the relevant properties. (5) shows placement in the *Vorfeld*.

(5)　　*Occurrence in pre-finite-position*[5]
　　　　a. *mit　einem Dietrich*　**hat** Theo die Tür　geöffnet
　　　　　 with a　　　pass key has Theo the door　opened
　　　　b. *ohne　　anzuklopfen* **ist** Theo eingetreten
　　　　　 without to knock　　is　Theo　entered
　　　　c. *als　es zu regnen begann* **ist** Theo eilig　　nach Hause gelaufen
　　　　　 when it to rain　　began　is Theo quickly to　　home　run
　　　　d. *insbesondere Burgunder*　　**hat** Theo reichlich　getrunken
　　　　　 in particular　burgundy wine has Theo plenty　　drunk

The facts about scope of negation and variable binding are illustrated by the PP-example (2a); the other cases pattern alike.

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(6) *Scope of Negation*
   a. Theo hat **nicht** – mit   einem Dietrich – die Tür geöffnet   Neg>Adjunct, Object
      Theo has not   – with a pass key   –   the door opened
   b. Theo hat – mit   einem Dietrich – **nicht** die Tür   geöffnet   Adjunct, Neg>Object
      Theo has – with a pass key   –   not   the door opened

(7) *Variable Binding*
   jeder/niemand$_i$ hat – mit   seinem$_i$ Dietrich   – die Tür   geöffnet
   everyone/no one has – with his   pass key – the door opened

With respect to the syntactic representation of these examples, we have to assume that the parenthetical phrase is not only part of the c-structure of the matrix clause, but that it is also mapped onto an f-structure that serves as the value of an attribute of the host's f-structure. In the case of (2a) – (2c) this is an adjunct. Parenthetical optional objects as in (2d) are integrated into the f-structure of the governing predicate anyway, since they are subject to the coherence condition.

Now, if the c- to f-structure mapping of this type of parentheticals does not differ from their non-parenthetical counterparts, both would remain indistinguishable – an unsatisfactory result in the face of the peculiarity of interpretation and pragmatic use of the parenthetical. But this can be remedied if we make the plausible assumption that parenthetical marking – by means of prosody or by typographic marks – is expressed by a suitable attribute at f-structure so that the relevant information is available for further processing.

5 Sentential Parentheticals

Sentential parentheticals make up the next type to be considered. At first, we have to state that all three variants of possible clause structure in German may also form licit parentheticals. Verb-second and verb-first clauses, which exhibit the canonical structure of an independent main clause, and verb-final clauses, the canonical exponent of subordinated clauses, may be parenthetically inserted into a hosting clause. (8) and (9) show a verb-second and a verb-first clause.

(8)   Theo hat – er **ist** Klempner – die Heizung im   Handumdrehen repariert
        Theo has – he is plumber – the heating in a jiffy   fixed

(9)   Theo hat – **ist** er Klempner? – die Heizung im   Handumdrehen repariert
        Theo has – is   he plumber? – the heating in a jiffy   fixed

In both cases shown in (8) and (9), c- to f-structure mapping of the parenthetical string on its own brings about a complete and coherent f-structure. The parenthetical clause, therefore, may be used independently. The interpretation of the parenthetical likewise parallels that of the non-parenthetical clause. The parenthetical's mood is declarative in (8) and interrogative in (9). This has to be borne in mind because of cases that do not fit into this pattern and to which we will return immediately.

Verb-final clauses that function as adjuncts permit parenthetical insertion into a clause, too.

(10)   Theo hat – als   es plötzlich kalt **wurde** – die Heizung im   Handumdrehen repariert
        Theo has – when it suddenly cold got   – the heating in a jiffy   fixed

In principle, a clausal parenthetical may be headed by any verbal predicate. Nevertheless, certain peculiar properties of the construction emerge if the predicate governs a COMP-function. The facts to be observed are independent of clause structure with respect to the position of the finite verb. Verba dicendi may illustrate the case.

(11)   Theo hat – er sagte **daß es kalt würde**   – die Heizung im Handumdrehen repariert
          Theo has – he said that it cold would get – the heating in a jiffy   fixed

In (11) – a verb-second clause – the COMP-function governed by the parenthetical verb *sagte* is provided by a finite complement clause. Instead of a clause, a pronominal may occur as in (12).

(12)   a. Theo hat – er sagte **es** mir später – die Heizung im Handumdrehen repariert
            Theo has – he told it me later – the heating in a jiffy   fixed
        b. Theo hat – so sagte er **es** mir später – die Heizung im Handumdrehen repariert
            Theo has – so told he it me later – the heating in a jiffy   fixed

In constructions like (12) the interpretation of the pronominal is strictly restricted to coreference with the hosting clause. This restriction may be due to pragmatic reasons. Since a deictic interpretation is hard to construe, the pronominal must corefer with some suitable antecedent. In (12) the host is the next available candidate. This restriction on interpretation does not preclude the parenthetical clause from independent use as long as the discourse provides for an antecedent of the pronoun.

    In (12) the interpretation of the host clause as an argument of the parenthetical's verbal predicate is syntactically mediated by the pronominal complement *es* of the parenthetical verb. We finally have to consider a third case of clausal parentheticals with more or less the same interpretation as (12). This kind of construction lacks an overt c-structure representation of the verbs complement within the parenthetical string. Instead, the host clause by itself seems to provide the complement directly. This type results from erasing the pronouns in (12).

(13)   a. Theo hat – **sagte** er mir später – die Heizung im Handumdrehen repariert
            Theo has – told he me later – the heating in a jiffy   fixed
        b. Theo hat – so **sagte** er mir später – die Heizung im Handumdrehen repariert
            Theo has – so told he me later – the heating in a jiffy   fixed

The mood of the parenthetical clause is declarative in both cases. In the case of (13b) this follows from the verb-second structure of the parenthetical. But the same holds true of (13a) despite the fact that this parenthetical has the shape of a verb-first clause which otherwise determines interrogative mood.[6]

    As mentioned before, the peculiar relation between the host and the parenthetical's predicate illustrated in (12) and (13) does not depend on the internal clause structure of the parenthetical. It also obtains in verb-final clauses as in (14).

(14)   a. Theo hat – wie er mir später **sagte** – die Heizung im Handumdrehen repariert
            Theo has – as he me later told – the heating in a jiffy   fixed
        b. Theo hat – wie er *es* mir später **sagte** – die Heizung im Handumdrehen repariert
            Theo has – as he it me later told – the heating in a jiffy   fixed

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[6]   Since the principle interest of this work is to elucidate the syntactic relation of the parenthetical to its host, I will not further investigate the structural conditions that determine declarative mood in verb-first clauses like that in (13a).

For convenience, clausal parentheticals which contain all constituents that are necessary for projecting a locally complete f-Structure will furthermore be called *internally complete*, those which do not will be called *internally non-complete*.

After this survey of possible instances of clausal parentheticals, let us come back to the question of their status with respect to syntactic integration into the host. As before, we will apply occurrence in pre-finite position, scope of negation and variable binding as tests. In all cases to be examined, the criterion of *inclusion* is trivially satisfied, because the parenthetical string can be preceded and followed by integral parts of the host (cf. (8) – (14)).

5.1 Non-Regular Constituent Parenthetical – Internally Complete

Verb-second parenthetical

Verb-second parentheticals do not pass any of the three tests. They are excluded from pre-finite position in a clause (cf. (15)), they are exempt from the scope of negation (16) and a quantifier in the host cannot bind a variable within the parenthetical (17).

(15) *Occurrence in pre-finite position*
  a. Theo **hat** – *ein Klempner* war *nicht zu erreichen* – den Rohrbruch selbst repariert
     Theo has – a plumber was not to reach   – the pipe burst self fixed
  b.**ein Klempner* war *nicht zu erreichen* **hat** Theo den Rohrbruch selbst repariert
      a plumber was not to reach   has Theo the pipe burst self fixed

(16) *Scope of negation*
  a. Theo hat **nicht** – er ist kein Klempner – den Rohrbruch selbst repariert   parenth>Neg
     Theo has not – he is no plumber – the pipe burst self   fixed
  b. Theo hat – er ist kein Klempner – **nicht** den Rohrbruch selbst repariert parenth>Neg
     Theo has – he is no plumber – not the pipe burst self   fixed
  c. Theo hat – er ist kein Klempner – den Rohrbruch **nicht** selbst repariert   parenth>Neg
     Theo has – he is no plumber – the pipe burst not self   fixed

(17) *Variable binding*
  (fast)   jeder/keiner$_i$ wird – er$_{*i}$ ist Klempner – nur aus Vergnügen arbeiten[7]
  (nearly) everyone/no one will – he is plumber   – only for fun   work

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[7] There are some exceptions from the ban on variable binding. So for instance (i) is grammatical with a bound variable reading of the pronominal.

  (i) (fast)   jeder/keiner$_i$ wird – er$_i$ mag Klempner sein oder nicht – nur aus Vergnügen arbeiten
    (nearly) everyone/no one will – he may plumber be or not – only for fun   work

  Variable binding in cases like (i) depends on specific conditions. Subjunctive mood of the verb within the parenthetical or the occurrence of the modal verb *mögen* 'may' makes it possible. But this is not specific to a parenthetical construction with a verb second parenthetical. Apart from the parenthetical construction, variable binding also becomes possible in the case of two successive clauses.

  (ii) Keiner wird nur aus Vergnügen arbeiten. Er mag Klempner sein oder nicht
    no one will only for fun   work.   He may plumber be or   not

  Variable binding in cases like (i) and (ii), which may be considered instances of modal subordination, calls for an explanation independent of the string's status as a parenthetical.

From these facts, we can conclude that the parenthetical string of a verb-second clause cannot be a *regular constituent*. Since, on the other hand, the parenthetical string can be included in the host (cf. (8)), it has the status of a *non-regular constituent*.

Verb-first parenthetical

Internally complete verb-first parentheticals pattern like the verb-second cases. They are excluded from the pre-finite position in a clause.

(18)　　*Occurrence in pre-finite position*
　　　　a. Theo – *hat er denn　　überhaupt das nötige　Werkzeug*? – **will**　den Rohrbruch
　　　　　　Theo – has he D-PART *at all　　the necessary tool?　　– wants　the pipe burst*
　　　　　　selbst reparieren
　　　　　　self　fix
　　　　b. **hat　er/Theo denn　überhaupt das nötige　　Werkzeug?* **will**　　Theo/er
　　　　　　has he/Theo D-PART *at all　　the necessary　tool?　　wants　Theo/he*
　　　　　　den Rohrbruch selbst reparieren
　　　　　　the　pipe burst　self　fix

A negative element in the host does not have scope over the parenthetical clause.

(19)　　*Scope of negation*
　　　　a. Theo will　　**nicht** – habe ich recht? – den Rohrbruch selbst reparieren
　　　　　　　　　　　　　　　　　　　　　　　　　　　　　recht>Neg/*Neg>recht
　　　　　　Theo wants not　– have I　right? – the pipe burst　self　fix
　　　　b. Theo will　– habe ich recht? – **nicht** den Rohrbruch selbst reparieren　　recht>Neg
　　　　　　Theo wants – have I　right? – not　the pipe burst　self　fix

A bound variable reading of a pronoun within the parenthetical is not available for binding by a quantifier within the host.

(20)　　*Variable binding*
　　　　(fast)　　jeder/keiner$_i$　　wird – ist er$_{*i}$ Klempner? – nur aus Vergnügen arbeiten
　　　　(nearly) everyone/no one will – is he　plumber　– only for fun　　　work

Hence, verb-first parentheticals are also *non-regular constituents* of the hosting clause.

5.2 Non-Regular Constituent Parenthetical – Internally Non-Complete

Verb-second and verb-first parentheticals that are internally non-complete in the sense that they do not enclose a constituent which is mapped onto the COMP function of the verbal predicate exhibit the same restrictions with respect to placement, scope and variable binding as their complete counterparts discussed in section 5.1. The relevant facts are shown in (21) – (23).

Verb-second parenthetical

(21)   *Occurrence in pre-finite position*
　　　　a. Theo **hat** – *so* sagte *man mir* – den Rohrbruch im   Handumdrehen repariert
　　　　　　Theo has – so said one   me – the pipe burst in a jiffy　　　　　fixed
　　　　b. * *so* sagte *man mir* **hat** Theo den Rohrbruch im Handumdrehen repariert
　　　　　　so said one me   has Theo the pipe burst in a jiffy　　　　　fixed

(22)   *Scope of negation*
　　　　a. Theo hat **nicht** – so sagt man – selbst den Rohrbruch repariert　　　sagt>Neg/*Neg>sagt
　　　　　　Theo has not – so says one – self   the pipe burst fixed
　　　　b. Theo hat – so sagt man – **nicht** selbst den Rohrbruch repariert　　　　　　　sagt>Neg
　　　　　　Theo has – so says one – not   self   the   pipe burst fixed

(23)   *Variable binding*
　　　　a. *jeder/keiner$_i$　　　wird – so sagt er$_i$ – nur   aus Vergnügen arbeiten
　　　　　　everyone/no one will – so says he – only for fun　　　　work
　　　　b. *jeder/keiner$_i$　　　wird – so sagt man ihm$_i$ – nur aus Vergnügen arbeiten
　　　　　　everyone/no one will – so tells one him – only for fun　　　　work

Verb-first parenthetical

(24)   *Occurrence in pre-finite position*
　　　　a. Theo **hat** – sagte *man mir* – den Rohrbruch im   Handumdrehen repariert
　　　　　　Theo has – said one   me – the pipe burst   in a jiffy　　　　　fixed
　　　　b. * sagte *man mir* **hat** Theo den Rohrbruch im   Handumdrehen repariert
　　　　　　said one me   has Theo the pipe burst   in a jiffy　　　　fixed

(25)   *Scope of negation*
　　　　a. Theo hat **nicht** – sagt man – selbst den Rohrbruch repariert　　　sagt>Neg/*Neg>sagt
　　　　　　Theo has not – says one – self   the pipe burst fixed
　　　　b. Theo hat – sagt man – **nicht** selbst den Rohrbruch repariert　　　　　　　sagt>Neg
　　　　　　Theo has – says one – not   self   the pipe burst fixed

(26)   *Variable binding*
　　　　a. *jeder/keiner$_i$　　　wird – sagt er$_i$ – nur aus Vergnügen arbeiten
　　　　　　everyone/no one will – says he – only for fun　　　　work
　　　　b. *jeder/keiner$_i$　　　wird – sagt man ihm$_i$ – nur aus Vergnügen arbeiten
　　　　　　everyone/no one will – tells one him – only for fun　　　　work

In sum, we have to state that any occurrence of a verb-second or a verb-first parenthetical is only partially integrated into the syntactic structure of the hosting clause. Parentheticals with main clause structure thus have to be considered non-regular constituents.

5.3 Regular Constituent Parenthetical – Internally Complete

Parentheticals formed by ordinary adverbial verb-final clauses have already been addressed in section 2 at least partially. Apart from inclusion in the matrix clause, verb-final clauses may occupy the pre-finite position in main clauses (cf. (27)). They show scope interaction with nega-

tion in the matrix clause (cf. (28)) and the interpretation of a pronoun as a variable bound by a quantified NP in the matrix clause is also possible (cf. (29)).

(27)   *Occurrence in pre-finite position*
  a. Theo **kam** – *als*   *es regnete* – mit einem großen Schirm
   Theo came – when it rained – with a big umbrella
  b. *als*   *es regnete* **kam** Theo mit einem großen Schirm
   when it rained came Theo with a big umbrella

(28)   *Scope of negation*
  a. Theo kam **nicht** – als es regnete – mit einem großen Schirm
                    Neg>regnete/regnete>Neg
   Theo came not – when it rained – with a big umbrella
  b. Theo kam – als   es regnete – **nicht** mit einem großen Schirm   regnete>Neg
   Theo came – when it rained – not with a   big umbrella

(29)   *Variable binding*
  a. jeder$_i$ wird – wenn er$_i$ etwas   wissen will – fragen
   everyone will – if he something know wants – ask
  b. keiner$_i$ wird – wenn man ihn$_i$ fragt – antworten
   no one will – if one him asks – answer

Verb-final parenthetical clauses, therefore, are regular constituents of a clause.

5.4 Regular Constituent Parenthetical – Internally Non-Complete

The second type of verb-final parenthetical clause is instantiated by the *wie*-parenthetical which corresponds to the *as*-parenthetical in English. With respect to the syntactic realization of the verb's complement function, this construction is on a par with the verb-second and verb-first parentheticals discussed in section 5.2. It crucially differs from the latter in all aspects concerning syntactic integration into the host. The string formed by the *wie*-parenthetical may occur in pre-finite position (cf. (30)) – a parenthetical reading is not available in this case. A negative element in the matrix clause may get scope over them (cf. (31)) and variable binding is possible (cf. (32)).

(30)   *Occurrence in pre-finite position*
  a. Theo **hat** – *wie Paul sagt* – den Rohrbruch im Handumdrehen repariert
   Theo has – as Paul says – the pipe burst in a jiffy   fixed
  b. *wie Paul sagt* **hat** Theo den Rohrbruch im Handumdrehen repariert
   as Paul says has Theo the pipe burst in a jiffy   fixed

(31)   *Scope of negation*
  a. Theo hat **nicht** – wie man mir sagte – selbst den Rohrbruch repariert
                     Neg>sagte/sagt>Neg
   Theo has not – as one me said – self the pipe burst fixed
   presupposition: someone said: Theo has fixed the pipe burst by himself
  b. Theo hat – wie man mir sagte – **nicht** selbst den Rohrbruch repariert   sagte>Neg
   Theo has – as one me said – not self the pipe burst fixed
   presupposition: someone said: Theo has not fixed the pipe burst by himself

(32) *Variable binding*
 a. jeder/keiner$_i$ wird – wie er$_i$ sagen mag – nur   aus Vergnügen arbeiten
   everyone/no one will – as he say   may – only for fun   work
 b. jeder/keiner$_i$ wird – wie man ihm$_i$ sagen mag – nur aus Vergnügen arbeiten
   everyone/no one will – as one him tell   may – only for fun   work

wie-parentheticals, like other verb final parenthetical clauses, form regular constituents of the matrix clause.

5.5 Parenthetical and Non-Parenthetical Clause Sequences

As mentioned in footnote 5, a parenthetical string must be preceded by at least one constituent of the hosting clause. In the cases discussed so far, there is also some constituent of the host which follows it. Instead of being encapsulated in a clause, a parenthetical string may also follow its host immediately. The prosodic as well as the pragmatic properties of the core case of the parenthetical construction may be conserved. Furthermore, a sequence of those two clauses may be uttered by two different speakers in a discourse. In the latter case it is unreasonable to assume that both clauses are part of one and the same syntactic representation. On the other hand, the parenthetical construction and the corresponding sequence of host and parenthetical clauses pattern alike with respect to scope of negation and variable binding. Scope of negation is restricted to the preceding clause.

(33) *scope of negation*
 A: Theo hat nicht den Rohrbruch selbst repariert
   Theo has not   the pipe burst self   fixed
 B: er hatte das Werkzeug vergessen
   he had the tool   forgotten
 B': so sagt er
   so says he

A pronoun in the second clause does not allow a bound variable reading.

(34) *variable binding*
 A: jeder/keiner$_i$ wird nur   aus Vergnügen arbeiten
   everyone/no one will only for fun   work
 B: *er$_i$ ist Klempner
   he is plumber

(33) and (34) show the relation that regularly holds between independent clauses. These parellels between the parenthetical construction and a sequence of clauses is a further indicator of the syntactic independence of the parenthetical.
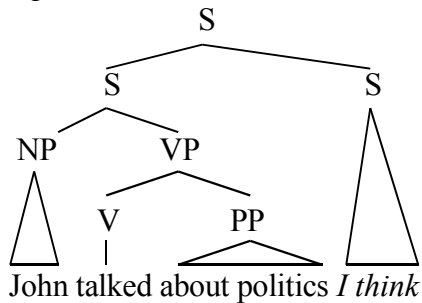
As a result of the preceding sections, we can state that parentheticals differentiate into two classes. One type subsumes strings of terminals which otherwise permit a non parenthetical use and which show the properties of other regular constituents of a clause. The other type subsumes strings – verb second and verb first clauses, as investigated so far – which cannot form a regular constituent of a clause. Parentheticals of the latter type may be conceived of as *syntactic parentheticals* as distinguished from mere prosodic parentheticals.[8]

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[8] The examples of verb-second and verb-first clauses discussed so far represent the core cases of syntactic parentheticals. Another quite frequent type is (i)

6 Previous Analyses

Current analyses of parenthetical constructions face a fundamental dilemma. Obvious aspects of syntactic disintegration like those illustrated in the previous sections have to be captured within a completely integrated structural description of these facts, since the parenthetical and its host are equally subordinated to one root node in the phrase structure representation of the whole construction. (cf. Ross (1973), Emonds (1976), (1979), McCawley (1981), Potts (2002), Stowell (2003)). Interpretative effects like the escape from scope and the blocking of a bound variable reading can be attributed to adjunction of the parenthetical string at the level of syntactic representation that feeds the interpretation of the whole construction. The superficial inclusion of the parenthetical in the host, then, is explained by movement of either the parenthetical into the host (cf. Ross (1973)) or of parts of the host into a position following that of the adjoined parenthetical (cf. Emonds (1979)).

(35) *Input*

John talked about politics *I think*

(36) Output:*Ross* (1973)

John talked *I think* about politics
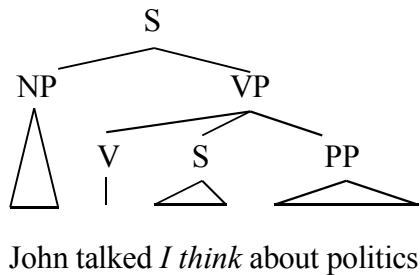
(i)   heute hat – so ein Nachbar   – Theo die Heizung repariert
      today has – so a   neighbour – Theo the heating   fixed

The parenthetical which lacks a verbal predicate must contain the adverb *so* as its initial constituent and it has roughly the same interpretation as (ii)
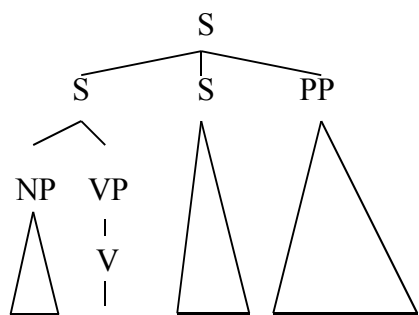
(ii) heute hat – so sagte ein Nachbar   – Theo die Heizung repariert
      today has – so said a   neighbour – Theo the heating   fixed

This type of parenthetical raises a couple of intricate questions which cannot be pursued here.

(37)   Output: *Emonds* (1979)

John talked *I think* about politics

In a third variant of analysis McCawley (1982) assumes that all constituents are base generated in place. By allowing crossing edges in the tree, the parenthetical is not dominated by the S-node that immediately dominates the host, but is adjoined to it.

While it might be possible to capture the interpretative properties of the parenthetical construction by adjunction of the parenthetical string, the restrictions on its distribution in German do not result from these analyses. There is no plausible motivation for the assumption that a string which is adjoined to a clause should be banned from movement into the pre-finite position of that clause if, at the same time, movement into a clause internal position is postulated to be possible and even necessary.

If, on the other hand, the parenthetical string is fixed in its adjoined position immediately dominated by the root node and the superficial constituent order is attributed to movement of some material from within the host, several well established general restrictions on movement cannot be maintained. Since the parenthetical may occur between the first constituent and the finite verb in main clauses, rightward movement of an intermediate C'-projection would have to be assumed. And even non-constituent movement would have to considered because parenthetical insertion is possible at the right edge of nearly any constituent of a clause in German.

7 An LFG-Account

A satisfactory analysis of the parenthetical construction calls for a solution of the dilemma just sketched. One way out of it would be the dissociation of the syntactic representation of the parenthetical and its host in the case of a syntactic parenthetical. Of course, such a dissociation cannot be absolute, since the parenthetical is enclosed into the string of terminal elements forming the host. A separated structural representation of the parenthetical and its host must be achieved under the condition of their integration in a terminal string. Espinal (1994) offers an account in this spirit.[9] Lexical-Functional Grammar with its co-representation of syntactic structure, on the other hand, provides a natural means to cope with this task. The level of c-structure can serve as the locus of integration of the parenthetical into its host, whereas at the level of f-structure the representations of the respective clauses are separated. The empirical facts that give rise to a disjunction of the syntactic representation of the parenthetical and its host (scope and variable binding) can be modelled in terms of f-structure configurations (cf. Bresnan (2001), Dalrymple (2001)). The question, then, is how to project two independent non-integrated f-structures from an integrated c-structure.

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[9]   According to her analysis, the host and the parenthetical form two different phrase structure trees which are not dominated by a unique root node. This account is applied to any occurrence of a parenthetically marked string. It is not restricted to cases of non-regular constituents in the sense developed above.

Every c-structure node is mapped onto an f-structure which, in the first place, bears no relation to the f-structure of any other node within that c-structure. An integrated f-structure emerges from two fundamental operations, namely unification of two f-structures and function application by which an f-structure is introduced as the value of an attribute of another f-structure. Both operations are mediated by functional annotation of either a trivial equation $\uparrow = \downarrow$ or an equation of the form $(\uparrow GF) = \downarrow$. In the case of a syntactic parenthetical, neither annotation is suitable. Since by convention the annotation of a trivial equation is presumed if a c-structure node lacks an explicit annotation, we need an explicit annotation of the parenthetical node. An equation of the form $\downarrow = \downarrow$ is convenient in this case. Like any other node, the parenthetical node is mapped onto an f-structure. As a consequence of the annotation, this f-structure is not unified with any other f-structure (with the exception of the parenthetical's head) nor is it introduced as the value of any attribute. (39) illustrates the case of an internally complete verb-second parenthetical.[10]

(39)
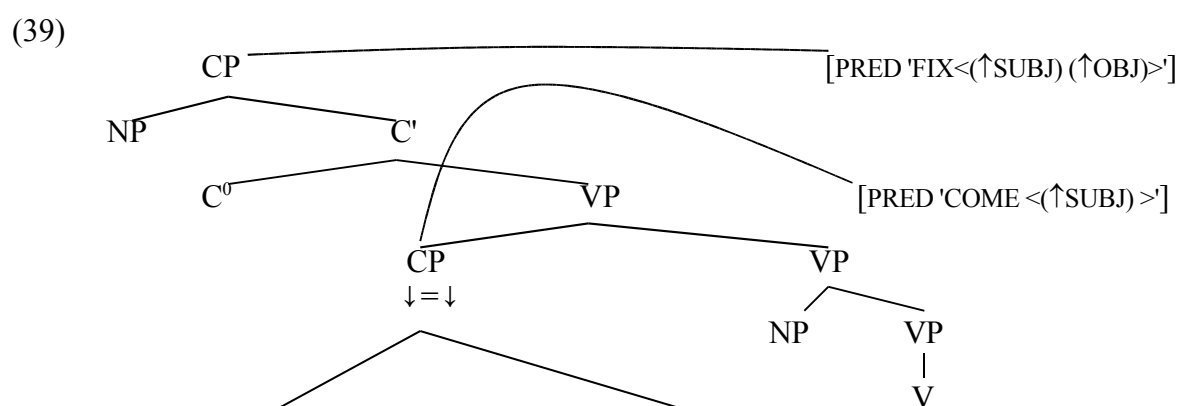
Theo hat – der Klempner war nicht gekommen – die Heizung repariert
Theo has – the plumber   had not   come   – the heating fixed

The interpretation of the syntactic parenthetical, namely its exclusion from the scope of a negative element in the host and the unavailability of a bound variable reading of a pronoun inside the parenthetical, now follow in a straightforward way.

7.1 Internally Complete Parenthetical

Scope of negation can be modelled by means of F-precedence.[11] The negative element must F-precede a constituent in order to get scope over it. F-precedence is defined as follows (cf. Bresnan (2001)):

(40)   *F-precedence*
       Given a correspondence mapping ϕ between a CS and its FS, and given two subsidiary f-structures α and β, α F-precedes β if the rightmost node in $\phi^{-1}(\alpha)$ precedes the rightmost node in $\phi^{-1}(\beta)$.

---

[10]   The c-structure of the host is modelled in the line of Berman (2003). A verb-second clause is represented by a CP functional category. The complement of its C-head is formed by a (recursive embedding of) VP. The parenthetical verb-second clause is adjoined to VP.
[11]   The position of the negation relative to other constituents affects its scope; cf. the examples in (31).

For an F-precedence relation to hold between two f-structures, it is necessary that an f-structure is given which contains both of them. But there is none in the case of a syntactic parenthetical (cf. (41)). Hence, the parenthetical is excluded form the scope of the negation.

(41)

```
            CP ——————————————————————————          ⎡ PRED 'FIX<(↑SUBJ) (↑OBJ)>'  ⎤
          /    \                                    ⎢ ...                         ⎥
        NP       C'                                 ⎢ ADJUNCT      {[NEG   +]}    ⎥
               /    \                               ⎣                             ⎦
             C⁰       VP
            /        /    \
          Neg      /       VP ——————————  [PRED 'COME <(↑SUBJ) >']
                 CP          VP
                ↓=↓
               /▲\          /▲\
```
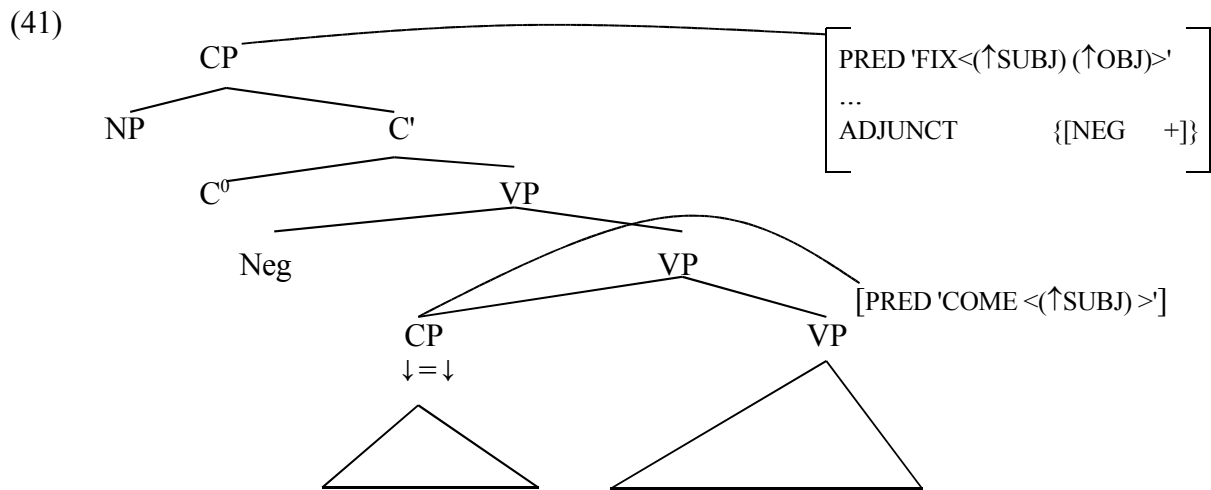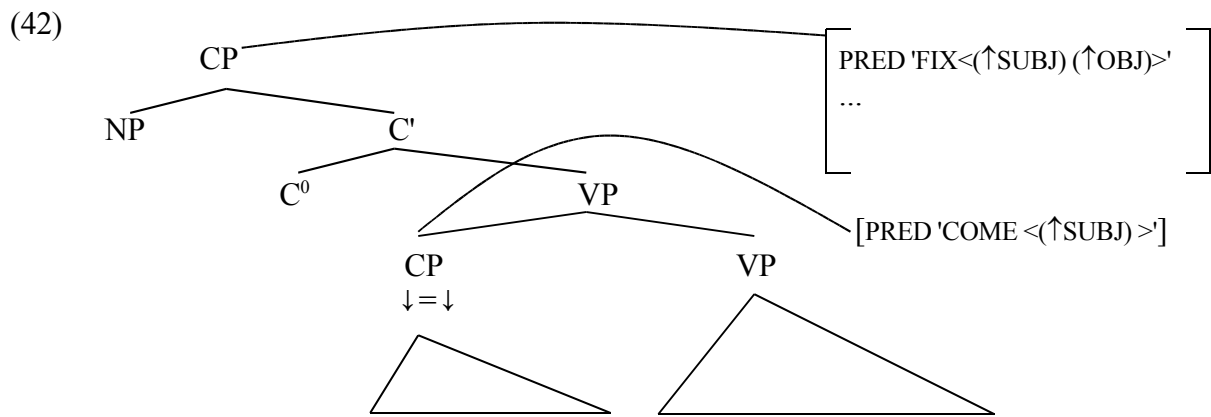
Theo hat nicht – er kam zu   spät – den Rohrbruch selbst repariert
Theo has not   – he came too late – the pipe burst self   fixed

A pronominal is capable of a bound variable reading if it is enclosed in the domain of a potential binder. The domain of a binder is defined as the minimal f-structure containing the binder (cf. Bresnan (2001)). Since there is no f-structure which includes both the f-structures corresponding to the QNP and to the pronominal, the required structural relation does not hold.

(42)

```
            CP ——————————————————————————          ⎡ PRED 'FIX<(↑SUBJ) (↑OBJ)>'  ⎤
          /    \                                    ⎢ ...                         ⎥
        NP       C'                                 ⎣                             ⎦
               /    \
             C⁰       VP
                     /    \
                   /       VP ——————————  [PRED 'COME <(↑SUBJ) >']
                 CP          VP
                ↓=↓
               /▲\          /▲\
```
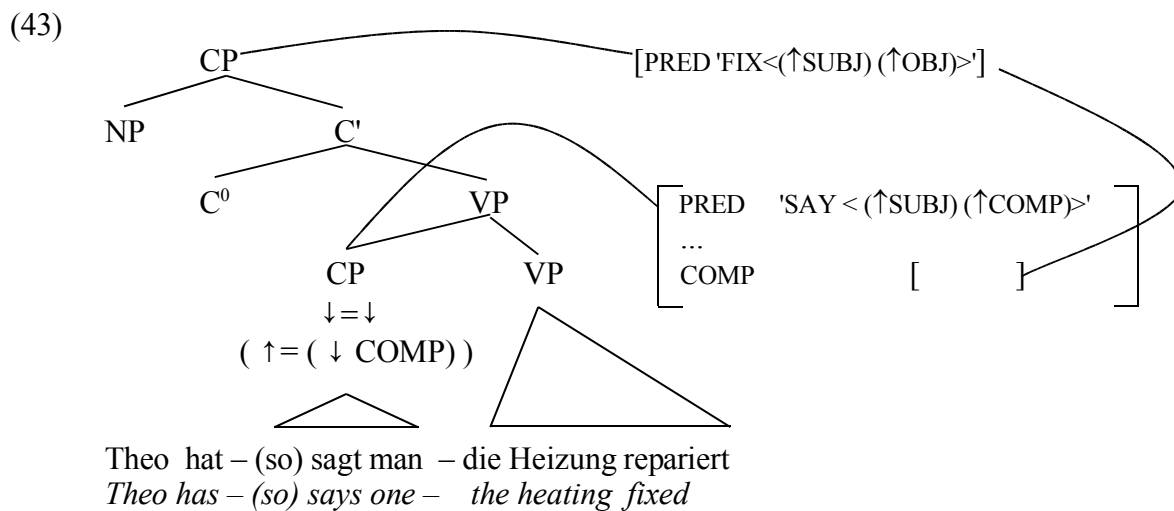
jeder/keiner_i wird – er_i ist kein Klempner – nur aus Vergnügen arbeiten
everyone/no one will – he is no plumber – only for fun work

The separation of the structural representations of the host and the parenthetical clause at the level of f-structure yields an account of the interpretation of the internally complete syntactic parenthetical.

7.2 Internally Non-Complete Parenthetical

In the case of internally non-complete syntactic parentheticals, the fact has to be captured that the host is interpreted as the complement of the parenthetical's verb. In the ordinary case of complementation of a clause, a definition of the form $(\uparrow \text{COMP}) = \downarrow$ is annotated to the CP-node of the complement. This annotation is, of course, inappropriate for the parenthetical. On the one hand, it would contradict the annotation of the equation $\downarrow = \downarrow$, since the f-structure corresponding to the parenthetical ends up as the value of some COMP attribute hence integrated into an f-structure. On the other hand, the resulting f-structure would violate the completeness and coherence conditions, as the host's predicate does not govern a COMP function whereas the parenthetical's predicate does.

In a first approximation, we may optionally annotate the node that dominates the parenthetical string with $\uparrow = (\downarrow \text{COMP})$, as in (43), in order to meet the interpretation of the construction.

(43)

Theo hat – (so) sagt man – die Heizung repariert
Theo has – (so) says one –   the heating fixed

The restrictions on scope of negation and variable binding also follow from this mode of representation.

In the case of negation, the f-structure value of the COMP function contains an f-structure corresponding to the negative element.

(44)

CP

NP   C'

C⁰   VP

Neg   VP

CP   VP
$\downarrow = \downarrow$
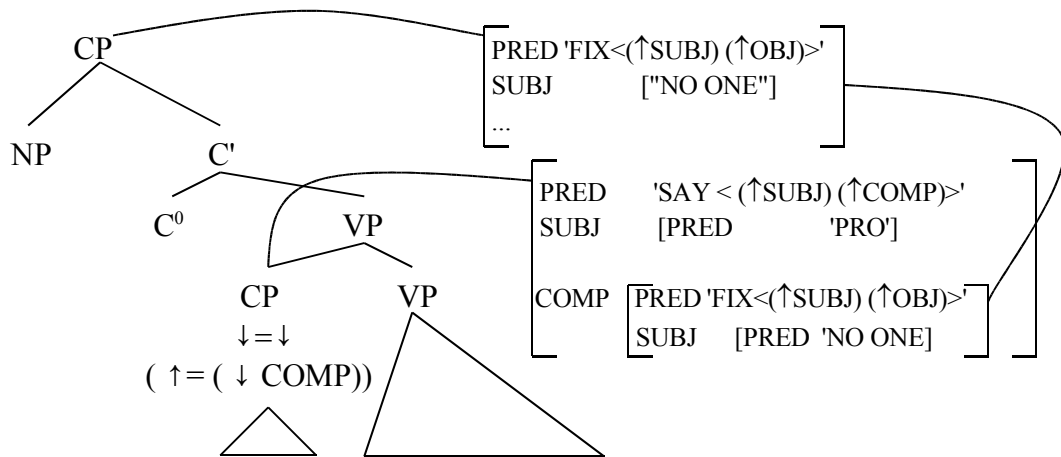$(\uparrow = (\downarrow \text{COMP}))$ NP   VP

V

$$\begin{bmatrix} \text{PRED} & \text{'FIX<}(\uparrow\text{SUBJ})(\uparrow\text{OBJ})\text{>'} \\ ... \\ \text{ADJUNCT} & \{[\text{NEG} \quad +]\} \end{bmatrix}$$

$$\begin{bmatrix} \text{PRED 'SAY<}(\uparrow\text{SUBJ})(\uparrow\text{COMP})\text{>'} \\ ... \\ \text{COMP} \begin{bmatrix} ... \\ \text{ADJUNCT} \{[\text{NEG} \quad +]\} \end{bmatrix} \end{bmatrix}$$
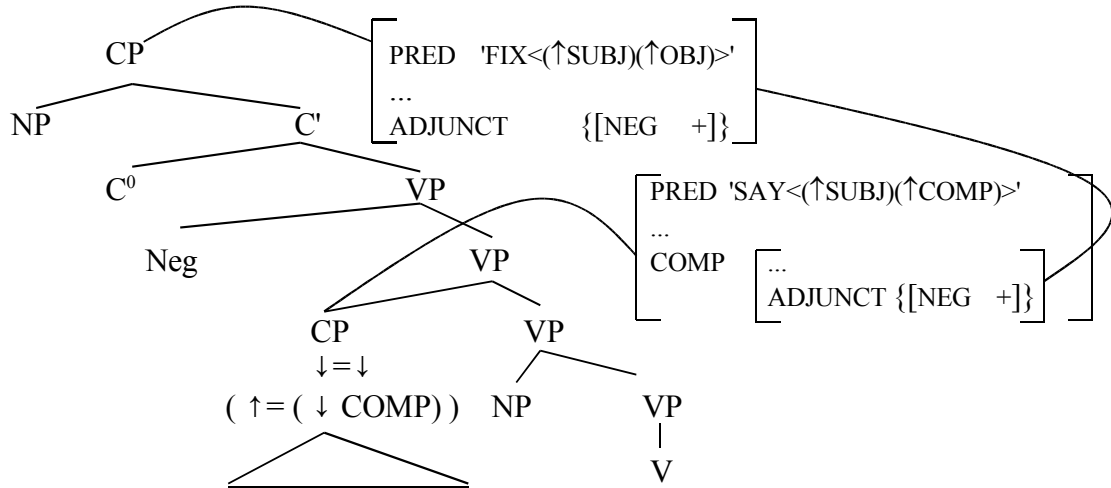
Theo hat nicht – (so) sagt man – die Heizung repariert
Theo has not – (so) says one – the heating fixed

Since at c-structure the negation precedes the parenthetical the f-structure corresponding to the negation F-precedes the f-structure of the parenthetical. But F-precedence is not sufficient for the negation to get scope over the parenthetical. In general, the scope of a negative element which is enclosed in a complement clause cannot extend to the matrix clause.[12] Since the f-structure of the negation is embedded in the f-structure value of the parenthetical's COMP function, the parenthetical is excluded from its scope despite F-precedence.

    Binding of a pronoun within the parenthetical by a quantified NP within the host is prohibited because the pronoun is not included in the domain of the quantifier if the f-structure of the host is copied into the parenthetical's f-structure as a value of the COMP function. The SUBJ within COMP does not outrank any function outside of COMP.

(45)   *

CP

NP   C'

C⁰   VP

CP   VP
$\downarrow = \downarrow$
$(\uparrow = (\downarrow \text{COMP}))$

$$\begin{bmatrix} \text{PRED 'FIX<}(\uparrow\text{SUBJ}) (\uparrow\text{OBJ})\text{>'} \\ \text{SUBJ} \quad [\text{"NO ONE"}] \\ ... \end{bmatrix}$$

$$\begin{bmatrix} \text{PRED} & \text{'SAY < }(\uparrow\text{SUBJ}) (\uparrow\text{COMP})\text{>'} \\ \text{SUBJ} & [\text{PRED} \quad \text{'PRO'}] \\ \text{COMP} & \begin{bmatrix} \text{PRED 'FIX<}(\uparrow\text{SUBJ}) (\uparrow\text{OBJ})\text{>'} \\ \text{SUBJ} \quad [\text{PRED 'NO ONE}] \end{bmatrix} \end{bmatrix}$$

jeder/keiner$_i$ hat – sagt er$_i$ – die Heizung repariert
every-/no one has – says he – the heating fixed

From the proposed annotation of $\uparrow = (\downarrow \text{COMP})$ to the parenthetical node, it follows that the entire f-structure of the host is copied into the parenthetical's f-structure. This account is appro-

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priate for the examples of internally non-complete syntactic parentheticals given so far. But, possibly, it is insufficient if we take into consideration some further instances of parenthetical constructions. So for instance, multiple embedding of parentheticals is possible as in (46).

(46) heute hat Theo – sagt Paul – die Heizung – sagt Fritz – im Handumdrehen repariert
      today has Theo – says Paul – the heating – says Fred – in a jiffy   fixed

(46) is a possible statement in a context of identical statements by *Paul* and *Fred* respectively. But (46) is also licit as a summary of statements that are not completely identical. If *Paul* and *Fred*, referring to the same event, utter the sentences in (47), sentence (46) is a possible résumé of both.

(47) a. Fritz: heute hat jemand   im Handumdrehen die Heizung repariert
         Fred: today has someone in a jiffy   the heating fixed
      b. Paul: heute hat Theo irgendetwas im Handumdrehen repariert
         Paul: today has Theo something   in a jiffy   fixed

The proposed annotation of the parenthetical, instead, would give rise to an interpretation that presupposes identical statements by *Paul* and *Fred* and hence is not compatible with a discourse like (47). This defect may be avoided if the complement of the parenthetical's predicate is represented by an empty pronominal, restricting the annotation of the parenthetical node to the equation ↓=↓. The interpretation of the complement, then, is a matter of anaphora resolution.

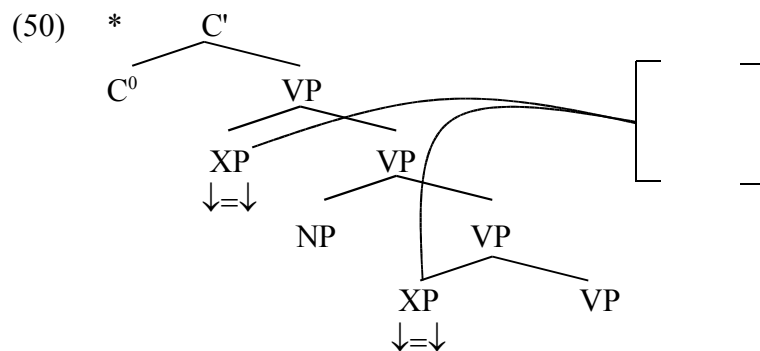## 7.3 Integrity of the Parenthetical string

As illustrated by (46), multiple occurrences of syntactic parentheticals within one host is possible. Besides the case in (46), recursive embedding is equally possible.

(48) Theo – er ist – sagen einige – in solchen Dingen geschickt – hat gestern
      Theo – he is – say   some – in such   things skilled   – has yesterday
      den Rohrbruch im Handumdrehen repariert
      the pipe burst   in a jiffy   fixed

In the parenthetical construction, the host is a discontinuous constituent by definition. However, parts of the host cannot be interspersed among constituents of the parenthetical. The parenthetical cannot be discontinuous relative to its host, as shown in (49).

(49) *Theo – er ist – hat gestern   – ein versierter Klempner – im Handumdrehen
      Theo – he is – has yesterday – a skilled   plumber – in a jiffy
      den Rohbruch repariert
      the pipe burst fixed

Espinal (1991), who deals with this fact, explicitly stipulates a specific condition to exclude ungrammatical cases as in (49). In the analysis elaborated above, no stipulation is necessary. As a consequence of the annotation, no path into the host can be defined. That means that the f-structure of a given parenthetical node cannot be unified with any other f-structure. Hence, a c- to f-structure mapping as in (50) does not emerge.

(50)   *   C'
             ╱   ╲
          C⁰   VP
                    ╱   ╲
                XP   VP   [   ]
                ↓=↓   ╱   ╲
                      NP   VP
                          ╱   ╲
                       XP   VP
                       ↓=↓

A structure like (50), however, would be necessary to integrate the scattered parts of a discontinuous parenthetical within a complete and coherent f-structure.

8 Summary

Due to the distribution of the parenthetical string and due to the syntax-based conditions on its interpretation, two types of parenthetical constructions can be differentiated in German. Syntactically integrated parentheticals are strings which otherwise may form regular constituents of a clause. They are part of the c- and f-structure representation of the containing clause. Syntactically non-integrated parentheticals (*syntactic parentheticals*) are formed by strings which do not permit a non-parenthetical use and which diverge from regular constituents with respect to placement and interpretation. Syntactic parentheticals share the c-structure representation with their host, but they are mapped onto an independent f-structure that is not part of the f-structure of the host.

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