Werner Frey and Hubert Truckenbrodt

5 Syntactic and prosodic integration and disintegration in peripheral adverbial clauses and in right dislocation/afterthought

5.1 Introduction and background

5.1.1 Overview

In this paper we bring together two lines of research. This is the work on peripheral adverbial clauses (PACs) by Frey (2011, 2012) and the work on right dislocation and afterthought by Truckenbrodt (to appear). Both relate to syntactic integration, to root clauses, to intonation phrases and sentence stress. In this paper we would like to integrate them into a single set of analytical assumptions that relate to the notion of *integration* by Reis (1997) and Holler (2008) and simultaneously the notion of *root sentence* (unembedded root clause), which according to B. Downing (1970), henceforth Downing (1970), triggers obligatory pauses (intonation phrase boundaries). The combined account involves minor adjustments of the preceding independent accounts, and it brings out similarities and differences among the phenomena investigated here.

In the remainder of this section we introduce notions of syntactic integration, root sentences, and their consequences for information structure and prosody. In Section 5.2 we discuss peripheral adverbial clauses. In Section 5.3 we address right dislocation and afterthought. Peripheral clauses and dislocated constituents in the right periphery are compared in a summary of the results in Section 5.4.

5.1.2 Integration and root sentences

We begin the discussion with the notion of integration from Reis (1997) and Holler (2008). According to their division, non-restrictive relatives (1a) and continuative *wh*-relative clauses (1b) are not integrated into their host clause.

(1) a. *Ich besuche meine Schwester, die   in Augsburg wohnt.*
        I   visit   my   sister   who in Augsburg lives
        'I am visiting my sister, who lives in Augsburg.'

     b. *Um neun Uhr   schlief das Kind ein, woraufhin   die Eltern*
        at   nine o'clock slept   the child in whereupon the parents
        fortgingen.
        left
        'At nine o'clock the child fell asleep, whereupon the parents left.'

Typical integrated clauses are argument clauses (2a), restrictive relative clauses (2b), and temporal adjunct clauses (2c).

(2) a. *Peter hofft,   dass Maria die Einladung annimmt.*
         Peter hopes   that Maria the invitation accepts
         'Peter hopes that Maria will accept the invitation.'

     b. *Peter schreibt jedem Besucher, der   seine Adresse hinterlassen*
         Peter writes   every visitor   who his   address left
         hat.
         has
         'Peter writes to every visitor who left his address.'

     c. *Peter kam   erst zur Ruhe, als   alle   gegangen waren.*
         Peter came only to rest when everyone left   were
         'Peter only came to rest when everyone had left.'

We connect the notion of integration from Reis and Holler to the notion of *root sentences* by Downing (1970). According to Downing, non-restrictive relatives, parentheticals[1], vocatives, and left dislocated elements in English are not syntactically part of the root sentence that they occur with. Furthermore, coordinate sentences are separate root sentences for Downing, and they are not integrated with each other for Reis and Holler. On the other hand, each example in (2) would constitute a single root sentence in Downing's analysis. The notion of root sentence is crucial for Downing, since he defines "obligatory pauses" in these terms. The rule mapping between syntax and prosody is that each root sentence is delimited by obligatory pauses. Nespor and Vogel (1986) adapted this to the prosodic hierarchy: Each root sentence is separated by intonation phrase boundaries. See L. Downing (2011), henceforth Downing (2011), Kan (2009), Selkirk (2005, 2011) for recent analyses that build on these classical suggestions; for our purposes it is sufficient to work with the classical generalizations.

After Downing (1970) embedded root clauses were discovered as well (Hooper and Thompson 1973). We stick with the terminological distinctions from the literature and distinguish root clauses from root sentences. Root sentences are unembedded root clauses. (Unembedded and embedded) root clauses are diagnosed by root clause phenomena such as English topicalization, German verb-second, and in many languages, the occurrence of certain adverbials or modal particles (MPs) that relate to the attitude of the speaker or to the speech act performed. These phenomena can occur unembedded in root sentences or embedded under a range of verbs which encode an illocu-

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1 From the perspective pursued in this paper, not all these elements are prosodically of the same kind. Parentheticals, in particular, have been argued to often lack the expected intonation phrase boundaries (Dehé 2009). They also lack the systematic sentence stress that we employ as a criterion below.

tion of their logical subjects. See Heycock (2006) for a review of embedded root phenomena. The root clause phenomena and their distribution suggest that they show a relation to speaker attitude and illocutionary force in some way. Root clauses have been identified with syntactic *ForcePs* in Bayer (2001), Haegeman (2002, 2004), and Coniglio (2011), among others. While this is compatible with our analysis, we employ the terms CP, root clause, and root sentence in our discussion.
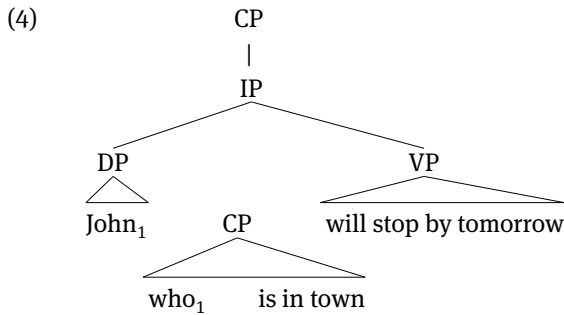
We employ the classical definitions of Downing (1970) for root sentences. The definition of root sentences seems not to be contingent on lexical selection, since restrictive relatives as in (2b) and certain adverbial clauses like (2c) are not lexically selected, yet are not separate root sentences. On the other hand, the definition of root sentence also cannot simply be 'an undominated CP in a phrase marker'. This is because coordinated sentences like $[_{CP1} [_{CP2}$ *it is snowing*] *and* $[_{CP3}$ *it is cold*]] have two coordinated root sentences CP_2 and CP_3, yet both are dominated by a higher node, here CP_1. Downing therefore employs an auxiliary definition: the predicate sentence. This, for him, is an S node immediately dominating a VP. Let us here call a predicate sentence a CP with a VP 'of its own' in the intuitive sense.[2] Following Downing, a root sentence is then a clause not dominated by a predicate sentence, as in (3).

(3)   A root sentence is a CP that is not dominated by a predicate sentence CP_P.

By (3) both CP_2 and CP_3 are root sentences in the coordinated structure $[_{CP1} [_{CP2}$ *it is snowing*] *and* $[_{CP3}$ *it is cold*]]. They are dominated by another CP, namely CP_1, but CP_1 is not a predicate sentence: It has no predicate of its own.

The appositive and continuative relative clauses in (1) are non-integrated in the sense of Reis (1997) and Holler (2008) and separate root sentences for Downing (1970). Downing (1970: 142ff) derives non-restrictive relatives from coordinated root sentences, from which they inherit their prosodic boundaries. Reis (1997: 138) employs a structure in which she adjoins non-restrictive relatives to the host clause. We reject both these structures and instead adopt the orphan analysis of non-restrictive relatives from Safir (1986), Holler (2008) and Frey (2011). In this analysis non-restrictive relatives are simply not part of the same phrase marker as the host clause, as illustrated in (4).

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2 A formal definition is that a predicate sentence is a CP that contains a VP and the CP node is not separated from the VP node by another CP node.

(4)

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                        CP
                        |
                        IP
              ┌─────────┴─────────┐
             DP                    VP
            ╱‾╲              ┌──────┴──────┐
         John₁      CP      will stop by tomorrow
                   ╱‾‾╲
                who₁   is in town
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Following Frey (2011) this analysis will allow us to distinguish the behavior of non-restrictive relatives from that of peripheral adverbial clauses, which are arguably adjoined to their host clause.

In relation to the definition (3), both CPs in (4) are root sentences in the orphan analysis, since neither of them is dominated by a clause with a predicate of its own. In particular, the relative clause in (4) is not dominated by the host clause CP because it is an orphan, i.e. not structurally attached to the host clause.

5.1.3 Information structure consequence of (non-)integration and root sentences

Downing (1970), as well as Brandt (1990), Reis (1997) and Holler (2008), see prosody-related consequences of root sentences/non-integrated clauses. For Brandt, Reis and Holler, this is captured in terms of separate focus-background structures for non-integrated clauses. (1b) is repeated here as (5) with some structure added for illustration. Each bracketed constituent is a focus-background structure in this perspective.

(5) [*Um neun Uhr   schlief das Kind __ein__*] [*woraufhin die Eltern*
      at   nine o'clock slept the child in   whereupon the parents
      __*fortgingen*__].
      left
      'At nine o'clock the child fell asleep, whereupon the parents left.'

An important aspect of this perspective, pointed out by Brandt (1990), Reis (1997) and Holler (2008), is that it is not possible to construct a single focus-background structure across the entire utterance. We adopt this here as the principle in (6). Following Rooth (1992) we denote a focus-background structure (or scope of a focus) with the squiggle-operator ~.

(6) Brandt (1990), Reis (1997) and Holler (2008):
     A focus-background structure ~[…] cannot be larger than a root sentence.

The restriction is illustrated in (7) and (8), where (7) is a comparison case that will be considered first. (7a) is a context question for the focused example (7b). In (7b) there is a single root sentence that contains a fronted subject clause. This can form a single focus-background structure, indicated by the scope of ~. In the theory of Rooth (1992) this requires alternatives in the context of (7b) that are calculated in (7b) at the level of ~, replacing the focus with alternative values. These alternatives must therefore be as shown in (7c). The requirement that these alternatives are given in the context of (7b) is satisfied because the meaning of the context question in (7a) semantically defines such a set of alternatives, i.e. the question asks essentially which of the alternatives in (7c) is true.

(7)   a.   *Wie ist es für dich, dass Peter absagen musste?*
         'What is it like for you that Peter had to cancel?'

     b.   ~ [*dass Peter absagen musste* [*hat mich* <u>*enttäuscht*</u>]$_F$
           that Peter cancel   had-to has me   disappointed
           'That Peter had to cancel disappointed me.'

     c.   {[that Peter had to cancel [has made me sad]],
           [that Peter had to cancel [has given me relief]], …}

Now, we might expect the same to be possible in (8), where ~ and F in (8b) would lead to the alternatives in (8c) which are, one might think, the options among which the context question (8a) asks for the truth. Yet (8b) is not a nicely matching answer to the question (8a). If the focus-background structure indicated in (8b) were acceptable, we could reasonably expect (8b) to be a nicely matching answer to (8a).

(8)   a.   *Wie ist es für dich, dass Peter absagten musste?*
         'What is it like for you that Peter had to cancel?'

     b.   #/*~ [*Peter musste absagen,* [*was   mich enttäuscht   hat*]$_F$]
             Peter had-to cancel   which me   disappointed has
           'Peter had to cancel, which disappointed me.'

     c.   {[Peter had to cancel [which made me sad]],
           [Peter had to cancel [which gave me relief]], …}

The focus-background structure shown in (8b) is ruled out by (6), the claim of Brandt, Reis and Holler, that non-integrated clauses cannot form a focus-background structure together with their host clause.

5.1.4 Prosodic consequences of non-integration and root sentences

For Downing (1970) root sentences are relevant for the prosody. Downing argues at the length of a 215-page thesis for a single generalization across a variety of differ-

ent syntactic constructions in English. The generalization, his *Obligatory Boundary Insertion* (*OBI*) convention, is that the edges of root sentences require the insertion of prosodic boundaries, which he calls phonological phrase boundaries and diagnoses by obligatory pauses. The terminology changed later on, and Nespor and Vogel (1986) adapted the formulation of the OBI to the prosodic hierarchy. In the prosodic hierarchy the prosodic constituents relevant to the OBI are intonation phrases. In (5), for example, each bracketed constituent, i.e. each root sentence, is an intonation phrase. (Additional, optional, intonation phrase boundaries are allowed by the accounts of Downing and of Nespor and Vogel.) We adopt this as well:

(9)   OBI of Downing (1970), as adapted by Nespor and Vogel (1986):
         Each root sentence is mapped to one (or more) intonation phrases.

In addition, Nespor and Vogel (1986) construe the intonation phrase as a stress domain. This perspective is also taken for German in Uhmann (1991) and in much later work on German sentence prosody. In such an account sentence stress is assigned as the prosodic head of the intonation phrase (I). We adopt this as well:

(10)   STRESS-DOMAIN-I
         Each intonation phrase carries sentence stress.

Thus in (5), where we have separate root sentences, we have separate intonation phrases on account of (9). Each of them carries sentence stress on account of (10).

Notice that (9) and (10) taken together have the effect that *each root sentence requires at least one sentence stress*. This is formulated and given a name in (11).

(11)   STRESS-RS: Each root sentence contains sentence stress. (Derived from the OBI in (9) and STRESS-DOMAIN-I in (10).)

Since sentence stress is sometimes easier to observe than intonation phrase boundaries, we will often discuss the prosodic effect of root sentences in terms of STRESS-RS.

Notice that STRESS-RS cannot be overridden by information structure. The empirical side of this is that there is no way of getting rid of the two instances of sentence stress in (5). We think that is related to the intuition of two focus-background structures in (5). In the current account, the impossibility of overriding STRESS-RS with information structure has two sides. First, focus cannot override STRESS-RS, since (6) prevents this for essentially geometrical reasons. A focus-background structure, if it were to override STRESS-RS, would need to be larger than the root sentence, like in (8b). In that structure the first root sentence in (8b), *Peter musste absagen* 'Peter had to cancel', would have a reason to be destressed (which would now go against STRESS-RS) because a focus-background structure normally involves stressing the focus and – crucially for the point here – destressing the background, which in (8b) is the first root sentence. However, such an overarching focus-background structure is blocked in principle by (6). Therefore STRESS-RS cannot be overridden by focus.

A second way in which Stress-RS might conceivably be overridden is in terms of the effect of contextual givenness, which requires destressing (Ladd 1983). This is formalized in Féry and Samek-Lodovici (2006) in terms of a feature G and its stress-rejecting effect as in (12):

(12) *Stress-Given:
      Do not assign sentence stress to a constituent marked as G (i.e. contextually given).

An example from Höhle (1992) shows that sentences that are contextually given in their entirety nevertheless carry sentence stress. The context (13a) makes the sentence (13b,c) entirely given. It may carry verum focus as in (13b) or not as in (13c). Either way it needs to carry sentence stress.

(13) a. *Ich habe Hanna gefragt, was Karl gerade macht, und sie hat die alberne Behauptung aufgestellt, dass er ein Drehbuch schreibt.*
          'I asked Hanna what Karl is currently doing, and she made the silly claim that he is writing a script.'

      b. (*das stimmt*) *Karl <u>schreibt</u> ein Drehbuch.*
          '(that's right) Karl is writing a script.'

      c. (*das stimmt*) *Karl schreibt ein <u>Drehbuch</u>.*
          '(that's right) Karl is writing a script.'

For representing this we must assume that Stress-RS overrides *Stress-Given. This has the desired effect in (13), where Stress-RS forces sentence stress on the all-given root sentence.

Consequently, in (5), the two instances of sentence stress in the two root sentences are also forced by Stress-RS and cannot be prevented from being assigned by contextual givenness, even if one of the two root sentences is given in its entirety.

In sum, we have assembled an analysis of syntactic integration in terms of root sentences. A root sentence is a sentence node not dominated by the sentence node of a predicate sentence. Coordinated sentences form separate root sentences, as do appositive and continuative relatives and their host clauses. Root sentences delimit focus-background structures. Further, they are delimited by intonation phrase boundaries and carry sentence stress (Stress-RS) in a way that cannot be overridden by information structure. We now turn to analyzing peripheral adverbial clauses and right dislocation/afterthought in these terms.

5.2 Peripheral adverbial clauses (PACs)

5.2.1 The syntactic position and c-command relation of PACs

Haegeman (2004, 2006) distinguishes central from peripheral adverbial clauses for English. The analysis is extended to German in Frey (2011, 2012), on which the following review is based.

Typical central adverbial clauses specify time or manner, or form the antecedents of a conditional. Typical peripheral adverbial clauses, PACs, are adversative or concessive adverbial clauses. (Clauses specifying a reason can be central or peripheral, depending on the complementizer.) All the relevant adverbial clauses are V-final in German.[3]

A number of c-command tests show that central adverbial clauses can be c-commanded by elements in the host clause, while peripheral adverbial clauses cannot. For example, central adverbial clauses can be in the scope of negation, in contrast to peripheral ones. (14b) does not have a reading in which Peter came but not despite his working duties but despite his tiredness.

(14)   a. *Peter wird nicht kommen, sobald   er kann, sondern*
         Peter will   not   come   as-soon-as he can   but
         sobald   es Clara erlaubt. (central)
         as-soon-as it Clara allows

      b. **Peter wird nicht kommen, obwohl   er arbeiten muss, sondern*
         Peter will   not   come   although he work   must but
         obwohl   er schlafen sollte. (peripheral)
         although he sleep   should

Similarly, central adverbial clauses allow binding of a pronoun in them by a c-commanding quantifier in the host clause, while peripheral ones do not:

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3 The following table classifies some often used conjunctions with respect to the clause types central and peripheral. Some can introduce clauses of either.

Conjunction	central	peripheral
als ('when')	✓	
sobald ('as soon as')	✓	
während (temporal 'while')	✓	
weil ('because')	✓(per default)	✓(possible, if triggered)
wenn ('if')	✓(per default)	✓(possible, if triggered)
da (justifying 'because')		✓
obwohl ('although')		✓
trotzdem ('even though')		✓
während (adversative 'while')		✓

(15) a. *Keiner$_i$ hat protestiert, als   er$_i$ unterbrochen wurde.* (central)
          noone has protested   when he interrupted   was
          'Noone protested when he was interrupted.'

  b. **Keiner$_i$ hat protestiert, obwohl   er$_i$ unterbrochen*
          noone   has protested   althought he interrupted
          wurde. (peripheral)
          was
          'Noone$_i$ protested although he$_i$ was interrupted.'

These differences can be accounted for by adopting the syntactic analysis of Haegeman (2004): PACs are adjoined to CP, and thus not c-commanded by other elements in the host clause. Central adverbial clauses, on the other hand, stand inside of CP, and can thus be c-commanded by elements in the host clause.

Despite these indications of disintegration, PACs show a number of signs of syntactic integration. Thus, they can contain a pronoun that is bound by a quantifier in a clause which is higher than the host clause of the PAC, as in (16) (Frey 2011).

(16) *Keiner$_i$ hat gedacht,* [[*andere werden bevorzugt*] [*während er$_i$ doch*
      noone has thought   others are   preferred   while   he MP
      der Richtige   sei]]
      the right.one   be
      'Noone$_i$ thought that others are preferred while he$_i$ is the right one.'

This separates PACs from appositive relatives, as shown in (17a), and from continuative *wh*-relatives, as shown in (17b). The examples in (17) demonstrate that these relative clauses cannot be attached to an embedded clause. Hence (17b) does not have a reading with the continuative relative in the scope of the negation of the matrix clause.

(17) a. [*Peter called everyone. However …*]

      Keiner$_i$ hat gesagt, dass Peter ([*der ihn$_i$ angerufen hat*]) *ihn$_i$*
      noone has said   that Peter (who him called   has) him
      um etwas   gebeten hat.
      for something asked   has
      'Noone$_i$ has said that Peter (*who had called him$_i$) asked him$_i$ for something.'

  b. **Keiner hat gesagt* [*dass Peter gewonnen hat, worüber*
          noone has said   that Peter won   has, where-about
          sich   Maria gefreut   hat]
          herself Maria delighted has
          'Noone said that Peter had won, about which fact Maria has been delighted.'

The orphan analysis of non-restrictive relatives in Safir (1986), Holler (2008) and Frey (2011) provides a plausible approach to this. The appositive and continuative relatives are assumed to be not structurally connected to their host clause as in (4). They cannot therefore form a constituent with their host clause that could be subordinated as in (17b) and cannot be c-commanded from a higher clause as in (17a).

PACs, on the other hand, are structurally attached to the host clause as in Haegeman's analysis. As (16) shows they can therefore be subordinated together with their host clause and can be c-commanded from the outside by elements c-commanding their host clause. They are just attached fairly high to their host clause.

A further observation due to Frey (2011) is that PACs can stand in the German Vorfeld (prefield):

(18) [*Während Hans sonst   bei schönem Wetter   einen Ausflug*
        while   Hans otherwise in   beautiful weather   an   excursion
        macht] *ist er gestern   zu Hause geblieben.*
        makes   is he yesterday   at home   stayed
        'While Hans otherwise makes an excursion when there is nice weather, he
        stayed at home yesterday.'

Positioning in the German prefield is taken as an unambiguous sign of its full integration into the clause by e.g. König and van der Auwera (1988). The prefield position is standardly analyzed as SpecCP, and thus a syntactic position genuinely inside of the German clause (see e.g. Haider 2010, Grewendorf 2002). SpecCP in German is also not followed by a systematic intonation phrase break (see e.g. Truckenbrodt 2002, 2005).

Thus, revising Haegeman's analysis, Frey (2011, 2012) argues that PACs are structurally base-generated as part of the host clause in very high positions, namely in SpecCP or by adjunction to CP.

What requires the high positioning of the PACs? A hypothesis might be that PACs must have high positions, since they semantically combine with a proposition, the proposition expressed in their host clause. However, this possible reason can be excluded. Clauses introduced by *weil* 'because' also take scope over a proposition (Dowty 1979), normally the proposition expressed by their host clause. We also point out that causal adverbs are base-generated higher than the thematic subject position in German, plausibly for this reason (Frey 2003). Yet elements from the host clause can c-command a *weil*-clause. In (19), for example, the bracketed *weil*-clause relates causally to the proposition expressed by (likewise in brackets) t_i *protestiert*, and the quantifier scopes over the combination of the two bracketed constituents, binding the trace and the coindexed pronoun.[4]

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4 An additional trace t_i is included as a reminder that German allows A-scrambling; otherwise a weak crossover effect would be expected in this example.

(19) *Keiner_i hat t_i [t_i protestiert] [weil er_i unterbrochen wurde]*
noone has protested because he interrupted was
'Noone_i protested because he_i was interrupted.'
(i.e. people may have protested for other reasons)

Therefore, taking a propositional argument may motivate attachment at a certain height (above the underlying position of the subject); however, it cannot motivate the considerably height to which PACs are limited (in which no element from the host clause can c-command them). There must then be another reason that forces PACs to take such high positions relative to their host clause.

5.2.2 PACs as root clauses

We review arguments from Frey (2011) that PACs are inherently root clauses, and that the reason for their high attachment is plausibly related to this property.

(20) PACs are inherently root clauses (Haegeman 2004, 2006, Frey 2011).

PACs attach to embedded clauses only under predicates that license root phenomena. For example, they occur under the root-clause-embedding verb *meinen* 'think' as in (21a) but not under the non-root-clause embedding verb *zurückweisen* 'reject' as indicated by the star in (21b).

(21) a. *Max meint, dass Maria Fußball liebt, während Paul für Opern*
Max thinks that Maria soccer loves while Paul for opera
schwärmt.
raves
'Max thinks that Maria loves soccer while Paul raves for opera.'

    b. **Max wies zurück, dass Maria Fußball liebt, während Paul für*
Max rejected that Maria soccer loves while Paul for
Opern schwärmt.
opera raves
'Max rejected that Maria loves soccer while Paul raves about opera.'

Furthermore, Coniglio (2011) and Frey (2011) observe that PACs allow MPs as in (22), which are arguably a root clause phenomenon (Bayer 2001, Coniglio 2011). The examples in (23), which show this as well, are from Thurmair (1989: 78).

(22) *Max könnte etwas   hilfsbereiter   sein* [*da   wir ihn doch höflich*
     Max could somewhat more.helpful be   since we him MP   politely
     gefragt haben]
     asked   have
     'Max could be somewhat more helpful, because we politely asked him, after
     all.'

(23) a. *Gestern   ist sie den ganzen Tag zu Hause geblieben,*
         yesterday has she the whole day at home stayed
         während sie doch sonst bei schönem Wetter   meistens einen
         otherwise she MP   while in nice   weather mostly   an
         Ausflug   macht.
         excursion makes
         'Yesterday she stayed at home all day while she otherwise mostly makes
         an excursion in nice weather.'

     b. *Er hat die Prüfung nicht bestanden, trotzdem   er ja recht*
         he has the exam   not   passed   nevertheless he MP quite
         intelligent ist.
         intelligent is
         'He didn't pass the exam even though he is intelligent.'

This separates PACs from central adverbial clauses, which do not license MPs (see
Coniglio 2011 and Frey 2011 for details). The two apparently contradictory properties –
integration in the German Vorfeld and a certain independence demonstrated by modal
particles – may be combined in the same example: PACs with modal particles freely
occur in the Vorfeld:

(24) [*Trotzdem/obwohl er ja   recht intelligent ist*] *hat er die Prüfung*
     although   he MP quite intelligent is   has he the exam
     nicht bestanden.
     not   passed
     'Although he is quite intelligent, he didn't pass the exam.'

We turn to the analysis. How might the root clause status of PACs relate to their high
attachment? Hooper and Thompson (1973) suggested that root phenomena are lim-
ited to 'assertive' environments: They can occur unembedded as part of the speaker's
assertion, or they can occur embedded under a range of 'assertive' verbs in a some-
what wider sense. Today it is known that root phenomena occur in a broader class of
cases that include questions and embedded questions under illocutionary verbs like
'ask' (Coniglio 2011). Haegeman (2002, 2006) suggests that root clauses must be an-
chored to a speaker or a potential speaker. For example, German verb-second (V2) is a
root phenomenon (e.g. Heycock 2006). Declarative V2-clauses occur unembedded as

speaker assertions as in (25a) or genuinely embedded under assertive predicates like (25b), though not in the non-assertive embedding in (25c). (25d) shows for comparison that a complementizer-initial clause can be embedded under the predicate that does not embed the V2-clause in (25c). (26) in addition shows that the embedded V2-clause is c-commanded by the matrix subject, which can bind a pronoun in the embedded V2-clause.

(25) a. *Maria liebt Fußball.*
         Maria loves soccer

      b. *Max meint, Maria liebt Fußball.*
         Max thinks Maria loves soccer

      c. **Max wies zurück, Maria liebt Fußball.*
         Max rejected   Maria loves soccer

      d. *Max wies zurück, dass Maria Fußball liebt.*
         Max rejected   that Maria soccer loves

(26) *Jeder$_i$ meint, er$_i$ ist eingeladen.*
      everyone$_i$ thinks he$_i$ is invited

In (25b), then, the embedded V2 root clause occurs in the 'assertive' environment that is constituted by the description of Max's opinion. In Haegeman's terms, Max is the potential speaker that the root clause is linked to.

It is plain that this licensing relation obeys a locality restriction, which we formulate in (27).

(27)   A root clause must be locally embedded in an illocutionary context.

For example, in (25c), the local embedding of the embedded root clause is the non-assertive *zuückweisen* 'reject'. Non-locally, there is also the speaker assertion of the entire clause in (25c). However, this embedding does not license the embedded root phenomenon, because it does not locally embed the embedded root clause.

Since (27) is important for the analysis, we also establish it with the MP *ja* in (28). It demands that the clause it occurs in is a root clause. This root clause is bracketed in the examples in (28). The bracketed root clause is immediately embedded in the speaker's assertion in (28a). It is immediately embedded under Max's assertion in (28b). In (28c) it is not immediately embedded under an assertive predicate (but under a non-assertive one). The MP is also not licensed by the speaker's assertion in (28c), since this does not locally embed the bracketed clause. A similar point is made in (28d). Here the quantifier *jeder* 'every' enforces a restrictive relative clause. The MP *ja* cannot be added to such a restrictive relative clause. The reason is that the relative clause is not locally embedded under an assertive embedding. It is not licensed by

being part of the speaker's assertion, since the speaker's assertion embeds the entire utterance, but does not locally embed the bracketed root clause.

(28) a. [*Maria liebt (ja) Fußball*]
　　　　　Maria　loves　MP　soccer
　　　　　'Maria loves soccer.'

　　　b. *Max hat zu Peter gesagt* [*dass Maria (ja) Fußball liebt*]
　　　　　Max has to Peter said　that　Maria MP soccer　loves
　　　　　'Max said to Peter that Maria loves soccer.'

　　　c. *Max bestreitet* [*dass Maria (*ja) Fußball liebt*]
　　　　　Max denies　　that　Maria MP　soccer　loves
　　　　　'Max denies that Maria loves soccer.'

　　　d. *Jeder　hier* [*der (*ja) Fußball liebt*] *soll　die Hand heben.*
　　　　　Everyone here who MP　soccer　loves should the hand raise
　　　　　'Everyone here who loves soccer should raise his/her hand.'

Following up on the analysis of Frey (2011), which we minimally modify, we are now in a position to analyze the requirement that PACs must be attached at a very high level to their host clause: Since PACs are inherently root clauses, they must be locally embedded in an illocutionary environment. The illocution of which they participate is normally the speaker's assertion of the host clause. PACs use this assertion in a parasitic way. To access this assertion, PACs need to also be locally embedded under that assertion in the sense of (27). We make this idea more precise using (29) for illustration. It shows the projection of the host clause CP and the two possible positions for the PAC (likewise a CP, though named PAC in (29)): It can stand as the specifier of CP or right-adjoined to CP. In addition, we indicate the embedding of the host clause CP in the speaker's <u>Assertion,</u> and highlight this by underlining. (This embedding may be semantic or pragmatic in nature, but we indicate it in (29) as though it was syntactic.) We assume that the <u>Assertion</u> is induced by CP due to its V2-property (see e.g. Gärtner 2002, Truckenbrodt 2006) and that both CP and the PAC are locally embedded under it in the sense of (27). We maintain that the locality requirement in (27) is the reason why the PAC requires such high attachment.

(29)
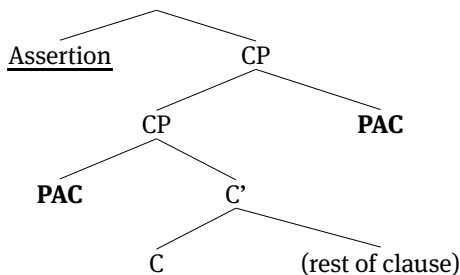
For concreteness, we may enforce the specifics of the high attachment of the PAC and allow its parasitic use of the higher speech act by postulating (30), a more specific version of (27). For the purpose of this paper, we apply the locality requirement in (30) to the underlying position of the root clause.

(30) A root clause must be locally embedded in an illocutionary context. This locality requirement tolerates the intervening presence of a CP node. However, no other syntactic constituents may intervene between the root clause and its illocutionary embedding.

This formulation rules out that the embedded root clauses in (25c), (28c,d) are licensed by the speaker's assertion (above the main clause). In these cases there would be more syntactic nodes than a single CP intervening between the embedded root clause and the assertive embedding. For example, the object clause in (28c) is underlyingly within VP. It is therefore separated from the speaker's assertion of the entire utterance by additional nodes of the matrix clause. At the same time, the formulation in (30) allows the immediate embedding of the unembedded root clause in (28a) under the speaker's assertion and the immediate embedding of the embedded root clause in (28b) under Max' assertion, with no intervening nodes at all: *Assertion* [$_\text{CP}$ *Maria liebt ja Fußball*] in the case of (28a), and [$_\text{CP}$ *dass Maria ja Fußball liebt*] *gesagt* in the case of (28b).

For the crucial PACs, then, (30) leaves a loophole that allows the PAC to parasitically access the speaker's assertion in (29). Here only a CP node intervenes between the PAC and the speaker's assertion, and so the PAC is locally embedded in the speaker's assertion by the formulation in (30). At the same time, (30) prevents that the PAC is more deeply embedded inside of the host clause.

While the analysis has so far concentrated on the unembedded case, it carries over to examples like (21a), in which the host clause is itself embedded. In (21a), *Max meint …* 'Max thinks …' is the assertive embedding that is shared by the host clause (which is the *dass*-clause) and the PAC. The PAC in (21a) is then likewise a root clause that is in accord with (30), since it is separated from *Max meint …* 'Max thinks …' only by the root node of the *dass*-clause. (21b) is ruled out because the PAC, a root clause, does not have an assertive embedding that it can share in this fashion. This is captured by (30) insofar the PAC is not locally embedded in an assertive context. The local embedding that it could share, *Max wies zurück …* 'Max rejected' is not assertive, and the assertive speech act of the entire utterance is not local to the PAC.

In summary, it seems that PACs require high attachment because they are inherently root clauses and participate in the assertive embedding of their host clause. We may think of them as speech act parasites. The participation in the assertive embedding of their host clause tolerates only a minimal distance from the assertive embedding, allowing PACs to either stand in the specifier of their host clause or adjoin to their host clause.

5.2.3 Prosody of PACs

We begin by addressing the prosody of PACs that are right-adjoined to the host clause. In a wide focus context, central adverbial clauses like (31) can carry the sentence stress of the entire utterance, while peripheral adverbial clauses like (32) require separate sentence stress on the host clause (Brandt 1990, Frey 2011).

(31) *What did Maria tell you?*

    a. [*Peter wird kommen* [*sobald er etwas <u>Zeit</u> hat*]] (central)

    b. [*Peter wird <u>kommen</u>* [*sobald   er etwas <u>Zeit</u> hat*]] (central)
       Peter will come   as.soon.as he some time has
       'Peter will come as soon as he has some time.'

(32) *What did Maria tell you?*

    a. # [*Peter wird kommen*] [*obwohl er keine <u>Zeit</u> hat*] (peripheral)

    b. [*Peter wird <u>kommen</u>*] [*obwohl er keine <u>Zeit</u> hat*] *(peripheral)*
       Peter will come   although he no   time has
       'Peter will come although he has no time.'

This difference can be accounted for in terms of the notion of root sentences in (3) and STRESS-RS in (11). The central adverbial clause in (31a) is part of the host clause. It is dominated by the CP node of the host clause, which is a predicate clause. By (3) the central adverbial clause is therefore not a root sentence. The PAC in (32a) is adjoined to the CP root clause. This host clause has a predicate, i.e. it is a predicate clause. Is the PAC then dominated by its CP node? It is inside one CP segment of the host clause but not inside of all CP segments of that host clause (see (29)). Syntactically, the PAC is partly inside, partly outside of that CP. In the following, we will see effects of both, which we subsume under the following more general formulation:

(33)   A PAC that is adjoined to its host clause CP will normally count as outside of CP for the syntax-prosody mapping, but can marginally also count as inside of CP.

In (32) we observe the preference for the PAC to count as being outside of the host clause CP. As long as the PAC counts as being outside the host clause CP, it is itself a root sentence by (3) and requires sentence stress by STRESS-RS. This is what we see in (32).

    Let us then look at some cases in which it appears that the PAC can count as a root sentence together with its host clause. First, when either the host clause or the PAC is contextually given and therefore G-marked, the constraint *STRESS-GIVEN in (12) can in principle remove sentence stress from them, as in (34) and (35).

(34) *Peter wird <u>kommen</u>.* [*Er wird kommen*]_G *obwohl   er keine <u>Zeit</u> hat.*
    Peter will come   he will come   although he no   time has
    'Peter will come. He will come although he has no time.'

(35) *Peter hat keine <u>Zeit</u>. Aber er wird <u>kommen</u>, obwohl   [er keine Zeit*
    Peter has no   time but he will come   although he no   time
    hat]_G
    has
    'Peter has no time. But he will come altough he has no time.'

This is a piece of motivation for the marked option in (33): Where the PAC (marginally) counts as inside of its host clause, host clause and PAC form a root sentence in the sense of (3) together. In this case STRESS-RS requires sentence stress only once in the entire utterance, and so the stress may shift away from a given part to another part of the utterance.

Another piece of motivation comes from some complementizers introducing PACs that allow being accented. When such a complementizer is present and when both host clause and content of the PAC are contextually given, though not the complementizer, the given elements are deaccented and the complementizer is accented:

(36) *Peter meinte, dass es dunkel war und dass der Mond am Himmel stand.*
    'Peter thought that it was dark and that the moon was in the sky.'

    Ja, es war dunkel <u>trotzdem/obwohl/gleichwohl</u> der Mond am
    Yes it was dark   although   the moon in.the
    Himmel stand.
    sky   stood
    'Yes, it was dark although the moon was in the sky.'

This, too, is analzyed in terms of the marginal option in (33) that allows the PAC to form a single root sentence together with its host clause. The single root sentence requires only a single instance of sentence stress, which is satisfied in (36).

The placement of narrow focus points in the same direction. While it is not straightforward to form a focus-background structure across the PAC and its host, we have constructed the following examples in which it seems to be possible. The main difficulty with finding such examples seems to be to construct a question that asks for the PAC, and indeed the questions in (37) are themselves marked. However, if one accepts the questions, the answers seem to be relatively acceptable.

(37) (?) *Welches Geschehens ungeachtet hat Max Maria geküsst?*
      which   event   disregarded has Max Maria kissed
      'Regardless of which event has Max kissed Maria?'

Max hat Maria geküsst gleichwohl [*das <u>Licht</u> anging*]$_F$
Max has Maria kissed although the light on.went
'Max has kissed Maria although the light came on.'

(38) (?) *Welchem Faktor zum Trotz ist die Nacht dunkel?*
      which   factor to.the spite is the night dark
      'Despite which factor is the night dark?'

Die Nacht ist dunkel trotzdem/gleichwohl [*der <u>Mond</u> am Himmel*
the night is dark   although   the moon in.the sky
steht]$_F$
stands
'The night is dark although the moon is in the sky.'

We see in this another sign of the relative integration of the PACs: Where they constitute, marginally, a single root sentence together with the host clause, a focus-background structure can be built across host clause and PAC without violating (6).

Consider then also the prediction of this account for the prosody of the PAC when the PAC is in the Vorfeld, SpecCP. Since the Vorfeld is part of the host clause, we expect integrated prosodic behavior. Where we test this with givenness, it is borne out: (39) is acceptable. The PAC counts towards the host clause insofar its sentence stress satisfies STRESS-RS for the host clause (otherwise we would see additional sentence stress outside of the PAC, cf. (13) and (32)).

(39) *Peter wird <u>kommen</u>.* [*Obwohl er keine <u>Zeit</u> hat*]$_{PAC}$ [*wird er*
      Peter will come   although he no   time has   will he
      kommen]$_G$.
      come
      'Peter will come. Although he has no time he will come.'

Similarly, a focus-background structure across PAC and host clause is possible, confirming that the initial PAC is in the same structure with the remainder of the utterance.

(40) (?) *Welchem Faktor zum Trotz ist es dunkel?*
          'Despite which factor is it dark?'

[*Trotzdem/obwohl* [*der <u>Mond</u> am   Himmel steht*]$_F$]$_{PAC}$ *ist es dunkel*
although   the moon in.the sky   stands   is it dark
'It is dark although the moon is in the sky.'

More generally, we expect integrated behavior of the PACs in the Vorfeld. This is compatible with the data we are aware of insofar we have not found any prosodic distinctions between PACs in the Vorfeld and other adverbial clauses in the Vorfeld. It is difficult to construct pairs like (31) and (32) for PACs in the Vorfeld (where we expect that PACs behave like integrated adverbial clauses) because German clauses generally tend

to be followed by an intonation phrase boundary (Truckenbrodt 2005 for German, see also Downing 2011 for Bantu languages), though unlike Stress-RS for root sentences, this can be overridden by contextual givenness. In (31) this seems not, or not obligatorily, to interfere, apparently because the central adverbial clause can be attached low enough to be part of the main clause CP, so that the intonation phrase boundary at the right edge of the main clause CP follows the embedded clause. However, a CP in the Vorfeld in an all-new sentence seems to be regularly followed by an intonation phrase boundary and to carry sentence stress. This is plausibly related to the structure insofar a CP in the Vorfeld always has its right edge, where the intonation phrase boundary is inserted, at the end of the Vorfeld.

In summary, while the facts are complex, the prosody and the information structure of PACs reflect their borderline status between integration and disintegration. PACs can act prosodically as though not part of the host clause. However, in an option that seems to also be available, they act as though they are part of the host clause.

5.2.4 PACs: Summary

It seems that PACs are inherently root clauses and that they are parasitic on the speech act of their host clause. They connect to their host clause structurally but must stand in a very high position because of their connection to the speech act of the host clause. Their prosody and their information structure reflect this very high position insofar they can act either as disintegrated or, at least marginally, as integrated.

5.3 Right dislocation and afterthought

5.3.1 Syntax of right dislocation and afterthought

Right dislocation and afterthought involve the resumption of a pronoun or other element in the sentence by an element that follows the clause, as in (41). In right dislocation the resumed element is a personal pronoun and the resuming element is stressless as in (41a). Where the element on the right is stressed as in (41b), it is referred to as afterthought (Ziv und Grosz 1994, Averintseva-Klisch 2006, 2009).

(41)   a.   *Ich habe sie$_i$ <u>gesehen</u>, die Maria$_i$.* (right dislocation)
                I   have her   seen   the Maria
                'I have seen Maria.'

          b.   *Ich habe sie$_i$ <u>gesehen</u>, – (ich meine) die <u>Maria</u>$_i$.* (afterthought)
                I   have her   seen   I   mean   the Maria
                'I have seen her, I mean Maria.'

Averintseva-Klisch (2009) pursues an analysis of right dislocation in terms of right-adjunction as in (42a). Ott and de Vries (2012) and Truckenbrodt (to appear) pursue an analysis of right dislocation and afterthought in which deletion applies to a biclausal structure as shown in (42b,c). Sluicing as in (42b) (fronting followed by deletion of a constituent) is postulated by Ott and de Vries (2012), building on the sluicing analysis of Merchant (2004) and on a sluicing analysis for Japanese right dislocation in Tanaka (2001). A gapping analysis as in (42c), following essentially Kuno (1978), is explored in Truckenbrodt (to appear).[5]

(42)   a.   *Ich habe* [[*sie gesehen*], *die Maria*]. (right-adjunction)

b.   *Ich habe sie gesehen, die Maria* ~~*habe ich*~~ *gesehen.* (sluicing)
I   have her seen   the Maria have I   seen

c.   *Ich habe sie gesehen,* ~~*ich habe*~~ *die Maria gesehen.* (gapping)
I   have her seen   I   have the Maria seen

The right-dislocated element obeys c-command restrictions as though it was in the position of the pronoun. Three such *connectedness effects* from Ott and de Vries (2012) are reviewed in (43)–(45). In each case it appears that the initial constituent c-commands the right-dislocated element, as though the right-dislocated element was in the position of the pronoun it resumes. (43) shows this with binding of a pronoun by a quantifier, (44) with reflexive binding according to Binding Condition A, and (45a) with a Binding Condition C effect (Chomsky 1981, Büring 2005). (45b) is a comparison case.

(43)   [*Did you wave to your students?*]
Jeder_i von uns hat ihnen gewunken, seinen_i Schülern.
each of us has them waved,   his   students
'Each of us has waved to them, to his students.'

(44)   *Jan_i hat jemanden im   Spiegel gesehen: sich_i   selbst.*
Jan has someone in.the mirror seen   himself self
'Jan saw someone in the mirror: himself.'

(45)   a.   **Sie_i hat ihn mit einer Anderen gesehen, Marias_i Freund.*
she has him with a.fem other   seen   Maria's boyfriend
'She saw him with another woman, Maria's boyfriend.'

b.   *Sie_i hat ihn mit einer Anderen gesehen, ihren_i Freund.*
'She saw him with another woman, her boyfriend.'

---

5 We take gapping to be circumscribed and restricted as in Neijt (1979).

These effects can be represented in an adjunction analysis and in the deletion analyses. For the adjunction theory, this is shown in (46). If the height of right-adjunction mirrors the syntactic height of the resumed pronoun, the right-adjoined element will share the c-command relations to other elements with the resumed pronoun. In (46c) for example, the initial *sie* c-commands both *ihn* and the resuming element *Maria's Freund*. The Condition C effect will correctly follow in such a structure.

(46) a. *Jeder$_i$ von uns hat* [[*ihnen gewunken*], *seinen$_i$ Schülern*].
          Each of us [[waved to them] to his students]
      b. *Jan$_i$ hat* [[*jemanden im Spiegel gesehen*]: *sich$_i$ selbst*].
          Jan [[saw someone in the mirror] himself]
      c. **Sie$_i$ hat* [[*ihn mit einer Anderen gesehen*], *Marias$_i$ Freund*].
          *She [[saw him with another woman] Maria's boyfriend]

(47) shows how a deletion theory in terms of gapping can derive these effects. In all cases, the relevant c-command relations obtain in the elliptical clause between an initial (elided) constituent and the deletion remnant. For example, the deleted clause-initial pronoun *sie$_i$* in (47c) binds and c-commands the name *Maria* in the second clause, in violation of Binding Condition C.

(47) a. *Jeder$_i$ von uns hat ihnen gewunken,* ~~*jeder$_i$ von uns hat*~~ [*seinen$_i$ Schülern*] *gewunken*.
          Each of us has waved to them, ~~each of us has waved~~ to his students.
      b. *Jan$_i$ hat jemanden im Spiegel gesehen:* ~~*Jan$_i$ hat*~~ *sich$_i$ selbst* ~~*im Spiegel gesehen*~~.
          Jan has seen someone in the mirror, Jan has seen himself in the mirror.
      c. **Sie$_i$ hat ihn mit einer Anderen gesehen,* ~~*sie$_i$ hat*~~ *Marias$_i$ Freund* ~~*mit einer anderen gesehen*~~.
          *She has seen him with another woman, ~~she has seen~~ Maria's boyfriend ~~with another woman.~~

In the sluicing analysis of Ott and de Vries (2012), the effects follow in the same way, though via (independently motivated) reconstruction of the fronting movement that precedes deletion in the elliptical clause.

    An important distinction between the adjunction analysis and the deletion analyses is that the adjunction analysis treats the dislocated element as part of the host clause (adjoined inside of it), while the deletion analysis treats the dislocated element as genuinely outside of the host clause (derived via deletion from a clause that follows the host clause). Broadly speaking, the adjunction analysis therefore predicts integrated behavior of the dislocated element, while the deletion analysis predicts it to act in a disintegrated way. We believe that the main evidence for disintegrated behavior of the dislocated element comes from its prosody and information structure, which we turn to in the following section. The syntactic and semantic arguments by Ott and

de Vries (2012) for disintegration of the dislocated element are: (i) The dislocated element does not affect the syntactic well-formedness of the host clause, which is always complete also without the dislocated element. (ii) The dislocated element does not affect the truth-value of the clause preceding it. (iii) The dislocated element is a syntactic island for movement. While these observations are all very much compatible with the deletion analysis, they are not strong arguments against an adjunction analysis. For example, the CED of Huang (1982) predicts that adjuncts are islands for movement. Therefore the adjunction analysis also predicts that the dislocated elements are islands for syntactic movement. We also want to point out that the disintegrated view is compatible with Zifonun et al. (1997: 1647), who view the dislocated element as a kind of doubled version of an element in the clause and in that sense as not part of the preceding clause.

In summary, a constituent that is right dislocated or an afterthought is added to the clause in the sense that it does not occupy a thematic position in the preceding clause. It shows c-command relations like the element it resumes (connectedness effects). These can be captured in an adjunction analysis as well as in deletion analyses. Ott and de Vries (2012) argue that disintegration of the dislocated constituent (together with the connectedness effects) supports a deletion analysis. This will be strengthened in the following section on the prosody of right dislocation and afterthought.

5.3.2 Prosody of right dislocation and afterthought

The prosody of right dislocation and afterthought is here discussed in comparison with that of extraposed elements. The comparison follows Truckenbrodt (to appear) and extends compatible observations in Downing (1970) for English and Altmann (1981) for German. Extraposition, classically conceived of as movement to the right (e.g. Guéron 1980, see Büring and Hartmann 1997 for a defense of movement accounts), is not thought of as deriving a disintegrated structure. The moving element is inside of the clause before movement, and it is inside of the clause after movement. The syntactic integration is reflected in integrated behavior in the prosody. In (48) and (49) extraposed constituents are shown in wide-focus contexts, where the regular rules of sentence-stress assignment place the sentence stress on the extraposed constituent. The remainder of the clause to the left of the extraposed element does not carry sentence stress in these examples.

(48)   [*What happened?*]
        [x   ]$_I$
        Maria hat   ein   Buch t gelesen von <u>Chomsky</u>.
        Maria   has   a   book   read   by   Chomsky
        'Maria read a book by Chomsky.'

(49)   [*What will the weather be like?*]

    [*Peter hat t gesagt, dass es <u>regnen</u> wird*]_I.

Peter has said   that it rain   will

    'Peter has said that it will rain.'

On the other hand, the prosody of right dislocation and afterthought shows strik-ing effects of disintegration. The examples (41) are again shown in (50), omitting el-ements irrelevant here. Right dislocation and afterthought share that there must be sentence stress on the clause that precedes the dislocated element. Crucially, it is not possible to omit that sentence stress, as in (51). Further examples that show this ban are given in (52).

(50)   a.   *Ich habe sie_i <u>gesehen</u>, die Maria_i.*

    b.   *Ich habe sie_i <u>gesehen</u> – die <u>Maria</u>_j.*
         I   have her seen   the Maria

(51)   **Ich habe sie_i gesehen, die <u>Maria</u>_j.*
         I   have her seen   the Maria

(52)   a.   **Peter hat jemanden kennengelernt, die <u>Maria</u>.*
             Peter has someone   met   the Maria
             'Peter has met someone, Maria.'

    b.   **Jeder   hat sie gerne, seine <u>Mutter</u>.*
         everyone has he   dear   his   mother
         'Everyone likes her, his mother.'

    c.   **Jan hat jemand   im   Spiegel gesehen, sich   <u>selbst</u>.*
         Jan has someone in.the mirror   seen   himself self
         'Jan has seen someone in the mirror, himself.'

In this regard, right dislocation and afterthought are strikingly different from extrapo-sition. In the perfectly natural examples (48) and (49), the part of the sentence that precedes the extraposed element lacks sentence stress. We capture this distinction in terms of STRESS-RS. It is plain that extraposition does not place constituents outside of the root sentence from which they move. Therefore the assignment of sentence stress proceeds unobstructed by STRESS-RS in the examples (48) and (49). On the other hand, the observation in (51) and (52) finds a natural account if right-dislocated constituents are preceded by a complete root sentence: This root sentence will then correctly re-quire sentence stress by STRESS-RS. The examples (51) and (52) are then ruled out as violations of STRESS-RS because the initial root sentence lacks sentence stress.

Here as in (13) STRESS-RS is stronger than *STRESS-GIVEN. Thus in (53) the clause to the left of the dislocated constituent is contextually given. Nevertheless, it must carry sentence stress.

(53) *Claudias Mutter sagt, dass Peter sie gesehen hat.*
'Claudia's mother says that Peter has seen her.'

 a. **Ja, [Peter hat sie gesehen, die <u>Claudia</u>]*.
 b. *Ja, [Peter hat sie <u>gesehen</u>], die Claudia.* (right dislocation)
 c. *Ja,* [*Peter hat sie gesehen*] – [*die Claudia*]. (afterthought)
   yes Peter has her seen the Claudia
   _____given___ _____
   'Yes, Peter has seen Claudia.'

In this regard, the observation at hand is comparable to the one we saw for non-restrictive relatives in (1) and (5). It seems that right-dislocated constituents and afterthoughts are disintegrated to the same degree as non-restrictive relatives. For the purpose of stress-assignment in the preceding clause, it is as though the dislocated constituents were not there. We turn to consequences for the syntactic analyses below.

5.3.3 Focus assignment with right dislocation and afterthoughts

A strong effect of disintegration can also be observed with the assignment of narrow focus. Notice first for comparison that extraposed constituents can be assigned narrow focus, as in (54) and (55).

(54) *Von wem hat Maria ein Buch gelesen?*
'By whom did Maria read a book?'

Sie hat ein Buch t gelesen [$_F$ *von <u>Chomsky</u>*].
she has a book read by Chomsky
'She has read a book by Chomsky.'

(55) *Was hat Peter gesagt?*
'What did Peter say?'

Er hat t <u>gesagt</u> [$_F$ *dass es <u>regnen</u> wird*].
he has said that it rain will
'He has said that it will rain.'

This is what we expect: Clause-internal constituents can normally be assigned narrow focus, no matter what their position in the clause. On the other hand, right dislocated constituents and afterthoughts cannot be assigned narrow focus:

(56) *Wen hat Marias Vater gesehen?*
'Who has Maria's father seen?'

**Er hat sie$_i$ gesehen,* [$_F$ *die <u>Maria</u>*]$_i$.
he has her seen ACC Maria
'He has seen her, Maria.'

(57)   *Wen hat Peter kennengelernt*?
       'Who did Peter meet?'

       Er hat jemanden kennengelernt, [$_\mathbf{F}$ *die Claudia*].
       he has someone   met   the Claudia
       'He has met someone, Claudia.'

One may correctly object that (56) and (57) are independently ruled out by STRESS-RS, given our assumption that the dislocated constituents are outside of the domain of sentence stress. However, we can try to remedy this situation and assign sentence stress in the default position of the final verb, as in (58) and (59). Now the examples satisfy STRESS-RS. However, they are still not felicitous in their focus-triggering contexts.

(58)   *Wen hat Marias Vater gesehen?*
       'Who has Maria's father seen?

       Er hat sie$_i$ gesehen, [$_\mathbf{F}$ *die Maria*]$_i$.
       he has her seen   ACC   Maria
       'He has seen her, Maria.'

(59)   *Wen hat Peter kennengelernt?*
       'Who did Peter meet?'

       Er hat jemanden kennengelernt, [$_\mathbf{F}$ *die Claudia*].
       he has someone   met   the Claudia
       'He has met someone, Claudia.'

Thus focus assignment provides further evidence for the disintegrated status of right-dislocated elements. More specifically, if the right-dislocated element or afterthought is preceded by a root sentence, it correctly follows from (6) that this root sentence cannot be integrated into a focus-background structure with the dislocated element that follows it.

In sum, the preceding two subsections have provided striking evidence for the disintegration of right-dislocated elements and afterthoughts: The requirement on preceding sentence stress and the impossibility of an overarching focus-background structure follow if right dislocated elements and afterthoughts follow a complete root sentence that does not include the dislocated element.

5.3.4 Syntactic consequences of the prosodic observations

Assume, then, that a right-dislocated element or afterthought were right-adjoined to the preceding clause as in (60).

(60) *Peter hat* [IP [IP *sie_i gesehen*], *die Maria_i*].
      Peter has   her seen   the Maria
      'Peter has seen Maria.'

In such a structure, there would be no reason why the dislocated element could not carry the only sentence stress of the utterance: As part of the unembedded root clause, it would be eligible for sentence stress like other constituents, given appropriate motivation for choosing this site such as givenness of the remainder of the clause as in (53). Furthermore, there would be no obstacle to focusing the right-dislocated constituent, since it would be syntactically fully integrated with the remainder of the clause.

The only way, then, in which the adjunction analysis can be maintained, is with construction-specific assumptions: By maintaining that afterthought has a different structure entirely, and that the structure in (60) is inherently tied to a stressless dislocated constituent. This stipulation will correctly keep sentence stress (and thus also focus) from occurring on the dislocated element, and thus force them to remain in the domain that precedes the dislocation. Yet afterthought shows the same connectivity effects as right dislocation:

(61) a. *Jeder_i von uns hat einem gewunken – einem seiner_i Schüler.*
          each   of us has someone waved   one.of his   students
          'Each_i of us waved to someone, to one of his_i students.'

      b. *Jan_i hat jemanden im Spiegel gesehen – sich_i selbst.*
          Jan has someone in.the mirror seen   himself self
          'Jan has seen someone in the mirror, himself.'

      c. **Sie_i hat jemanden gesehen – Marias_i Freund.*
          she has someone seen   Maria's boyfriend
          'She has seen someone, Maria's boyfriend.'

      d. *Sie_i hat jemanden gesehen – ihren_i Freund.*
          she has someone seen   her   boyfriend
          'She has seen someone, her boyfriend.'

If an advocate of (60) would therefore extend the structure (60) to at least some cases of afterthought, then there can be no ban on stressing the right-adjoined constituent in (60), and our argument against (60) applies with full force: There is no reason why sentence stress is required before the adjoined constituent in (60), nor why focus could not be assigned to the adjoined constituent.

The deletion analysis, on the other hand, can derive the effects of disintegration we observed. It starts from a biclausal structure like (62). By (3) both clauses are root sentences, since both are not contained in a higher clause with a predicate of its own. Since the first clause is not affected by deletion, it remains a root sentence. When STRESS-RS applies to it, sentence stress is assigned to it. As we saw, STRESS-RS can-

not be overridden by information structure. Furthermore, it correctly follows that no focus-background structure can be built that combines the first clause and remnants of the second clause, since the first clause is a root sentence so that (5) prevents a focus-background structure that is larger than it.

(62)   *Er hat sie gesehen, er hat die Maria gesehen.*
       he has her seen,   he has the Maria seen
       'He has seen her, he has seen Maria.'

We contend that the facts from prosody and information structure are not compatible with an analysis of right dislocation and afterthought in terms of syntactic adjunction. On the other hand, the deletion analysis reconciles the disintegrated status of the dislocated element with the connectivity effects it displays, as argued by Ott and de Vries (2012).

5.3.5 On the distinction between right dislocation and afterthought

Ziv and Grosz (1994) argue for English and Averintseva-Klisch (2009) argues for German that right dislocation and afterthought have different properties. While we agree that there are non-trivial distinctions, we treat them here as a natural class insofar both involve a preceding root sentence that requires sentence stress and both are derived by syntactic deletion. In an account of this kind, further distinctions between them relate to different properties of the second clause in (62) before or after deletion. As a first approach to these distinctions, Truckenbrodt (to appear) suggests that right dislocation involves deletion of the second root sentence CP along with the overtly deleted material, as in (63), while afterthought involves the retention of this second root sentence CP, as in (64). With assignment of prosody following deletion, (63) will then allow a stressless right-peripheral constituent, while the second root sentence CP in (64) still requires sentence stress on the ellipsis remnant.

(63)   CP   ~~CP~~

       Er hat sie <u>gesehen</u>   ~~er hat~~ die Maria ~~gesehen~~
       he has her seen   he has the Maria seen

(64)   CP   -   CP

       Er hat jemanden <u>gesehen</u>   ~~er hat~~ die <u>Maria</u> ~~gesehen~~
       he has someone seen   he has the Maria seen

Other syntactic distinctions may follow from the different resulting root sentence structure, though much remains to be explored and spelled out in detail here. As far

as the prosody, (9) and (10) derive the intonation phrases and sentence stress in (65) and (66) from (63) and (64).

(65) [*Er hat sie <u>gesehen</u>*]$_I$, *die Maria.*
      he has her seen   the Maria

(66) [*Er hat jemanden <u>gesehen</u>*]$_I$, [*die* | *Maria* |]$_I$.
      he has someone seen   the Maria

What is unusual in (65) is that the final element does not belong to any intonation phrase. However such violations of exhaustive prosodic parsing are also known from other prosodic levels, see e.g. Selkirk (1995). What the structure correctly captures is that the host clause to the left of the dislocated element is a domain of sentence stress, i.e. an intonation phrase. This is also true of (66), where, in addition, the dislocated element is an additional intonation phrase carrying sentence stress. The structures furthermore give us an approach to the position of pauses in German. Empirically and impressionistically, there is no pause preceding right dislocation as in (65), though there is a pause preceding afterthought as in (66).[6] This can be represented by the distinction between (65) and (66) if a left edge of an intonation phrase leads to a preceding pause, and if right edges of intonation phrases do not trigger pauses:

(67) Insert a pause preceding a left edge of an intonation phrase.

(67) will insert a pause preceding *die Maria* in (66) but not in (65).

5.3.6 Summary of right dislocation and afterthought

The prosody and the information structure of right dislocation and afterthought show that these elements are very much disintegrated. A syntactic adjunction analysis, if it wants to generalize across right dislocation and afterthought, cannot represent this disintegration in a principled way. The deletion analysis, on the other hand, captures both this disintegration and the connectedness effects.

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6 Schneider-Wiejowski (2011) recorded a corpus of spontaneous speech in which she measured pause frequency and pause duration (next to F0 change) for three categories: preceding extraposed non-sentential elements ('enges Nachfeld'), preceding extraposed sentential elements ('weites Nachfeld') and a category that includes the boundary preceding right dislocation and afterthought ('rechtes Außenfeld'), but was mostly represented by expressions with adverbial function in her corpus. The three-way distinction was also investigated in a perception study. The classification and its terminology are from Zifonun et al. (1997). Because of the different research questions, the results do not directly speak to the issues discussed in the text. However, the distinction Schneider-Wiejowski (2011) finds, in which the elements in the third category are generally more strongly separated than the extraposed elements, seems to us to be broadly compatible with our results.
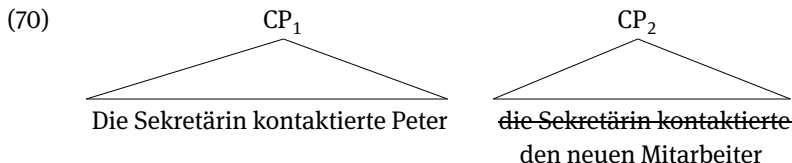
5.4 Summary

PACs cannot be c-commanded from elements in the host clause. They are attached high because they are root clauses that are parasitic on the assertive embedding of their host clause. They are nevertheless attached to the host clause in ways in which non-restrictive relatives are not. This is reflected in their syntactic properties, in their prosodic options and in their options with regard to information structure. In the current analysis, this is captured in the distinction between an orphan structure for non-restrictive relatives as in (68) and a CP-adjunction structure for PACs which follow their hosts as in (69).

(68)

CP_1 CP_2

Die Sekretärin kontaktierte Peter   der im Urlaub war

(69)

CP_1

CP_1 CP_2

Die Sekretärin kontaktierte Peter   obwohl er im Urlaub war
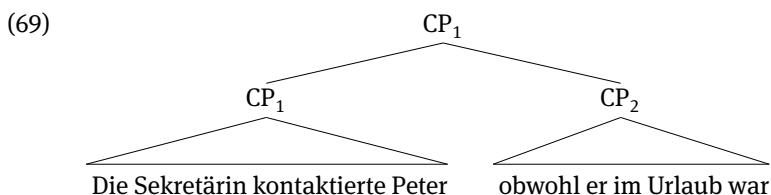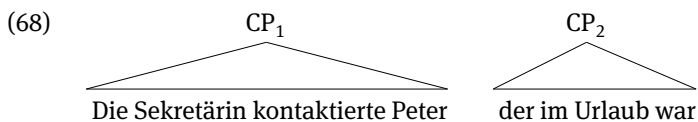
The CP-adjunction structure places PACs at the border between being a separate root sentences and not being a separate root sentence. Non-restrictive relatives, on the other hand, are always separate root sentences.

Dislocated constituents in the right periphery do not have this borderline status. They are always outside of the host clause. The strongest arguments in favor of this conclusion seem to be their prosody and their information structure. All elements at the right periphery that resume some part of the clause are obligatorily preceded by a host clause that carries sentence stress. No elements at the right periphery that resumes some part of the clause can be focused in a focus-background structure that extends across host clause and right-peripheral element. This correctly follows from a deletion analysis of such right-peripheral elements in which the elided 'conjunct' is a separate structure that is not part of the host clause or adjoined to it:

(70)

CP_1 CP_2

Die Sekretärin kontaktierte Peter   ~~die Sekretärin kontaktierte~~
den neuen Mitarbeiter

These distinctions were worked out in an analysis that connects observations and suggestions about integration of Reis (1997) and Holler (2008) to the notion of root sen-

tence from Downing (1970). Building on Brandt (1990), Reis (1997) and Holler (2008), a restriction was formulated that a focus-background structure cannot extend beyond a root sentence. From Downing, the restriction that root sentences are delimited by intonation phrase boundaries was adopted, with the crucial consequence at hand that root sentences must carry sentence stress.

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