

Carla Schelfhout, Peter-Arno Coppen, Nelleke Oostdijk\*

## A Parenthetical Approach to Backward Conjunction Reduction

### Abstract

This paper identifies backward conjunction reductions in Dutch as a special instance of coordinated comment clauses. This approach is argued to be superior to the standard approaches within the traditional and generative framework, in that it not only refrains from theoretically suspect mechanisms as needed in the other analyses, but also gives a better explanation for the constituent behaviour and the intonation pattern of the resulting surface structure. Moreover, it generalizes over backward conjunction reduction, gapping and ambi-ellipsis, which have been analyzed as unrelated constructions until now.

### 1. Coordination Constructions in Dutch

#### 1.1 Coordinated comment clauses

In Dutch (and in many other languages), sentential coordination can be used as a kind of parenthetical comment on a previous clause, as in the following examples:

1a [Ik geloof dat je je vergist] [en Chris is het met mij eens].  
I believe that you you mistake and Chris is it with me agreed  
'I believe that you are mistaken and Chris agrees with me.'

2a [Zijn moeder heeft hem nooit toegestaan om uit te gaan] [en dat is  
His mother has him never allowed to out to go and that is  
maargoed ook].  
only good also  
'His mother has never allowed him to go out and that is only for the better.'

The second conjuncts in 1a-2a cannot be interpreted as equivalents to the preceding clauses (they cannot be interchanged as in \* *Chris is het met mij eens en ik geloof dat je je vergist*), nor can they be seen as consecutive propositions. They merely comment on the proposition in the first clause, and as such, they resemble parenthetical adjuncts. As is the case with the latter, they can also be placed in the middle of the preceding clause, in various positions:

1b [Ik geloof [, en Chris is het met mij eens,] dat je je  
I believe and Chris is it with me agreed that you you  
vergist].  
mistake  
'I believe, and your father agrees with me, that you are mistaken.'

- 2b [Zijn moeder heeft hem nooit toegestaan [-en dat is maargoed ook-] om  
His mother has him never allowed and that is only good also to  
uit te gaan].  
out to go  
'His mother has never allowed him –and that is only for the better- to go out.'
- 2c [Zijn moeder heeft hem [-en dat is maargoed ook-] nooit toegestaan om  
his mother has him and that is only good also never allowed to  
uit te gaan].  
outto go  
'His mother has never allowed him –and that is only for the better- to go out.'

Usually, in these cases, the coordinated clauses are considered *comment clauses* (cf. Quirk et al. 1985: §15.53 ff), a special kind of parentheticals or *intercalations* (cf. Schelfhout et al. 2003a). Yet, it is clear that the examples in 1b-2b,c must be related to the ones in 1a-2a. Obviously, the comment clauses in 1b-2b,c are inserted into a host clause. Consequently, in 1a-2a they must be considered inserted clauses as well, although the insertion is sentence-final.

Placement of these coordinated comment clauses seems to be relatively free. In Schelfhout et al. (2003b), the distribution of several types of intercalations is investigated. The distribution of the parenthetically inserted comment clauses follows the general pattern with the additional characteristic that, like non-sentential intercalations, comment clauses can be linked to a focused constituent in the host clause:

- 3a [Ik zag zwartbonte koeien in de wei staan] [, en het waren  
I saw piebald cows in the field stand and it were  
grote koeien ook!]  
big cows too  
'I saw piebald cows standing in the fields, and they were big cows as well.'
- 3b [Ik zag zwartbonte koeien–en het waren grote koeien ook- in  
I saw piebald cows and it were big cows too in  
de wei staan].  
the field stand
- 3c \* [Ik zag–en het waren grote koeien ook- zwartbonte koeien in  
I saw and it were big cows too piebald cows in  
de wei staan].  
the field stand

In the coordinated comment clause *en het waren grote koeien ook*, the adjective *grote* 'big' is linked to the focused adjective *zwartbonte* 'piebald' in the host clause. Apparently, this causes a restriction on the insertion of the parenthetical: it must be inserted after the focused adjective.

If the coordinated clause is inserted clause-internally, there are restrictions with respect to non-focused elements occurring in both clauses, cf. example 4.

- 4a Je moet in deze tijd veel aardbeien op het menu hebben staan,  
 you must in this time many strawberries on the menu have stand  
 en ik verkoop de mooiste aardbeien.  
 and I sell the most-beautiful strawberries  
 'You have to have a lot of strawberries on your menu in this period, and I sell  
 the most beautiful strawberries.'
- 4b Je moet in deze tijd veel aardbeien- en ik verkoop de  
 you must in this time many strawberries and I sell the  
 mooiste aardbeien- op het menu hebben staan.  
 most-beautiful strawberries on the menu have stand
- 4c \* Je moet in deze tijd veel -en ik verkoop demooiste aardbeien-  
 you must in this time many and I sell the most-beautiful strawberries  
 aardbeien op het menu hebben staan.  
 strawberries on the menu have stand
- 4d ? Je moet in deze tijd veel -en ik verkoop demooiste- aardbeien  
 you must in this time many and I sell the most-beautiful strawberries  
 op het menu hebben staan.  
 on the menu have stand.

In 4a-b, the parenthetical is inserted to the right of the focus *veel*, and to the right of the word *aardbeien*, which occurs in both clauses. In 4c however, the clause is inserted to the left of *aardbeien*, which is not allowed, apparently. Only if the word *aardbeien* is left out of the parenthetical, as in 4d, insertion at this position is possible, albeit marginally (so).

Note that the insertion at this position, with the non-focused element left out, seems to be restricted to cases where the left-out (or covert) element is right-peripheral. Cf. example 5, in which the parenthetical is extended at the right periphery:

- 5a Je moet in deze tijd veel aardbeien op het menu hebben staan,  
 you must in this time many strawberries on the menu have stand  
 en ik heb de mooiste aardbeien te koop.  
 and I have the most-beautiful strawberries to sale  
 'You have to offer a lot of strawberries in this period, and I have the most  
 beautiful strawberries for sale.'
- 5b Je moet in deze tijd veel aardbeien -en ik heb de mooiste  
 you must in this time many strawberries and I have the most-beautiful  
 aardbeien te koop- op het menu hebben staan.  
 strawberries to sale on the menu have stand
- 5c \* Je moet in deze tijd veel -en ik heb de mooiste aardbeien te  
 you must in this time many and I have the most-beautiful strawberries to  
 koop- aardbeien op het menu hebben staan.  
 sale strawberries on the menu have stand

5d \* Je moet in deze tijd veel -en ik heb de mooiste te koop-  
 you must in this time many and I have the most-beautiful to sale  
 aardbeien op het menu hebben staan.  
 strawberries on the menu have stand

Insertion of the parenthetical before *aardbeien* in the host clause is impossible, cf. 5c-d.<sup>1</sup> The only reason can be that the word is not right-peripheral in the parenthetical, due to the presence of the constituent *te koop* ‘for sale’. Apparently, an overt non-focused element in a parenthetical cannot have its counterpart in the host sentence to the right, and it can only be covert if it is right-peripheral.

There can be no doubt that the examples in this section all involve parenthetical insertion of a coordinated clause. An analysis as “normal” coordination seems inappropriate, and obviously fails to capture the generalization that the construction behaves like other, non-sentential or non-coordinated intercalations, e.g. interjections.

### 1.2 Backward conjunction reduction

Now consider the following example:

- 6a Ik heb tien boeken gelezen en jij hebt twintig boeken gelezen.  
 I have ten books read and you have twenty books read  
 ‘I have read ten books and you have read twenty books.’
- 6b \* Ik heb tien boeken -en jij hebt twintig boeken gelezen- gelezen.  
 I have ten books and you have twenty books read read
- 6c Ik heb tien boeken -en jij hebt twintig boeken- gelezen.  
 I have ten books and you have twenty books read

If we consider the coordinated clause *en jij hebt twintig boeken gelezen* as a coordinated comment clause, not unlike the examples in Section 1.1, it is expected that insertion before *gelezen* in the main clause is impossible (6b) without leaving out the right-peripheral word *gelezen* (as in 6c). However, inserting this clause before *boeken* can only be done by leaving out the then right-peripheral word *boeken* as well:

- 6d \* Ik heb tien -en jij hebt twintig boeken- boeken gelezen.  
 I have ten and you have twenty books books read
- 6e Ik heb tien -en jij hebt twintig- boeken gelezen.  
 I have ten and you have twenty books read

---

<sup>1</sup> There may be some doubt on the acceptability of 4d, but the difference with 5d is obvious. 5d is definitely ungrammatical.

Whatever mechanism should be responsible for this,<sup>2</sup> it is clear that the similarity of the examples in 6 with the coordinated comment clauses in 1-5 should be accounted for.

The constructions in 6c and 6e are usually called *backward conjunction reduction*, or *right node raising* constructions (cf. Hudson 1976, Neijt 1979, Van der Heijden 1999, Hartmann 2000). In standard analyses within a traditional or generative framework they are accounted for by considering 6a as a normal coordination, and either deleting a right-peripheral string from the first conjunct (as in 7a-b, cf. Neijt 1979, Hartmann 2000), or raising a right-peripheral string from both conjuncts, across the board, to the right (as in 8a-b, cf. Hudson 1976):

7a      Ik heb tien boeken gelezen en jij hebt twintig boeken gelezen.  
          I have ten books read and you have twenty books read

7b      Ik heb tien ~~boeken gelezen~~ en jij hebt twintig boeken gelezen.  
          I have ten ~~books—read~~ and you have twenty books read

8a      [Ik heb tien boeken e en jij hebt twintig boeken e] gelezen.  
          I have ten books and you have twenty books read

8b      [Ik heb tien e en jij hebt twintig e] boeken gelezen.  
          I have ten and you have twenty books read

Both analyses have their difficulties, especially in the framework of generative grammar. In recent generative theory, raising to the right is no longer an option (cf. Kayne 1994, Zwart 1997), and deletion of constituents has been problematic for a long time. In any case, the fact that either the raising or the deletion should be insensitive to constituent boundaries makes them very suspect. However, it seems that the backward conjunction reduction construction can appear virtually anywhere, even within constituents, cf. 6e/7b. The only restriction is that the last word<sup>3</sup> of the first conjunct must be focused.

Considering the construction in 6 as a coordinated comment clause immediately accounts for the distribution. Like other intercalations, comment clauses can be inserted virtually anywhere (but cf. Schelfhout et al. 2003b), even within constituent boundaries, and they can also be sentence-final, or attached to a focused element. The necessity of leaving out a non-focused right-peripheral element that occurs in the following part of the host clause as well is in accordance with the behaviour of other comment clauses like the ones in 4-5.

<sup>2</sup> An obvious candidate is Left Deletion, the mechanism which is thought to be responsible for "cases of coordination in which a string at the right periphery of the left conjunct is left out, similar to, but more general than, right node raising in English" (Kathol 1999, based on unpublished work from 1983 by Höhle).

<sup>3</sup> Even a *word part* can be focused, as in *jij gaat over im- en ik ga over export* ('you handle import and I handle export').

Therefore it seems tempting to compare a parenthetical approach to backward conjunction reduction constructions to other, more standard analyses in more detail. We will do so in Section 2. But first, we will discuss a special kind of conjunction reduction called *ambi-ellipsis*.

### 1.3 *Ambi-ellipsis*

Consider the following examples:

- 9a Ik heb de hond geaaid en jij hebt de kat geaaid.  
I have the dog petted and you have the cat petted  
'I have petted the dog and you have petted the cat.'
- 9b \* Ik heb de hond-en jij hebt de kat geaaid-geaaid.  
I have the dog and you have the cat petted petted
- 9c Ik heb de hond-en jij hebt de kat-geaaid.  
I have the dog and you have the cat petted

In accordance with the analysis above, the examples in 9 can be considered as coordinated comment clauses. They resemble the examples in 8, but differ from them in the fact that now full constituents have focus (*viz. de hond* 'the dog' and *de kat* 'the cat') whereas in example 8 only the determiners *tien* 'ten' and *twintig* 'twenty' had focus.

If we leave out both the auxiliary and the past participle in the second conjunct in 9a, we get the well-known *gapping* configuration (cf. 10a, cf. Neijt 1979). If we consider this as a comment clause as well, we expect that insertion in the middle of the host clause is possible also, as long as insertion takes place to the right of all focused elements. This turns out to be the case, as is shown in 10b:

- 10a Ik heb de hond geaaid en jij de kat.  
I have the dog petted and you the cat  
'I petted the dog and you the cat.'
- 10b Ik heb de hond-en jij de kat-geaaid.  
I have the dog and you the cat petted

The construction in 10b is called *ambi-ellipsis* by Grootveld (1994). She describes it as a combination of backward conjunction reduction and gapping. Grootveld's aim is not so much a theoretical analysis of the phenomenon or taking a stand in the discussion on deletion versus interpretation, but rather the development of a means to parse all sentences containing some kind of coordination, including those with an alleged ellipsis.

In an analysis of 10b as a combination of backward conjunction reduction and gapping, the verb *geaaid* is deleted at the right periphery of the first conjunct, and the

finite verb *hebt* is left out in the second conjunct.<sup>4</sup> The past participle *geaaid* is the main verb of the second conjunct in this analysis. Past participles can indeed be part of gapping constructions, as in 11:

- 11      Ik heb de hondgeslagen en jij de kat geaaid.  
          I have the dog beaten and you the cat petted  
          'I beat the dog and you petted the cat.'

Note that under the parenthetical approach, insertion of the comment clause *en jij de kat geaaid* in the middle of the host clause in 11 is ruled out because it should occur after the focused verb *geslagen*.

Ambi-ellipsis suffers from the same problems as backward conjunction reduction. Besides, the analysis of ambi-ellipsis constructions as a surface structure originating from a normal sentential coordination raises a few more theoretical problems. For instance, looking at the surface form of 10b, there is no evidence for a bi-sentential origin whatsoever. The sentence contains just one verbal complex (*heb geaaid*), one full sentence form (*ik heb de hond geaaid*), and the only addition seems to be a coordinator accompanied by a sequence of arguments contrasting arguments of the host clause.

The derivation of constructions without verbs from a sentential source was quite common in the early days of generative grammar. Back then, derivations from full sentences including complex deletion or pronominalization processes were proposed for all kinds of constructions. For instance, from a normal relative clause (12a) a construction with an appositional adjective (12b) was derived (cf. McCawley 1964, cited by Ross 1968 pp. 14):

- 12a      a man [who was tall] entered the room  
12b      a tall man entered the room

Derivations like these were quickly abandoned after heavy criticism. In fact, generative theory in the last decades has shown a trend towards more interpretive approaches to empty constituents (and, for that matter, pronominals as well), rather than deriving them from full forms.

This trend can also be observed in the analysis of gapping. After Neijt (1979), who replaced elaborate deletion rules by a simple general deletion rule restricted by general conditions, several researchers have proposed more interpretive analyses. For instance, for Dutch, Van der Heijden (1999) suggested to consider the gapped conjunct as a simple sequence of major categories, whose interpretation had to be derived from the relations with their contrastive counterparts in the main clause.

It seems that backward conjunction reduction is one of the few areas where the general trend of replacing deletion by interpretation mechanisms has not won

---

<sup>4</sup> For a more detailed discussion of this analysis, cf. Section 2, example 15.

ground. This is all the more remarkable, since the mechanisms needed to account for the deletion have always been problematic from a theoretical point of view.

In any case, analyzing 10b as a normal sentential coordination with a theoretically exotic right-peripheral deletion in the first conjunct apparently resists the general trend in generative theory, and it violates Occam's Razor: it assumes a bi-sentential origin without any visible indication. It should be noted that such an analysis can never be the default, but needs a stronger basis.

The alternative analysis of backward conjunction reduction constructions, considering them as coordinated comment clauses (which we will henceforth refer to as contrastive conjuncts), does better in this respect. It makes use of available resources, like the gapped clause, which must be accounted for anyhow if occurring in sentence-final position, and the undisputed parenthetical comment clauses, which must be allowed to be inserted at sentence-internal positions for independent reasons. In addition, general mechanisms as Left Deletion (cf. footnote 2) can be held responsible for elliptic phenomena in this construction. No special provisions seem to be needed, although the precise restrictions on the presence or absence of constituents in the gapped comment clause have to be determined.

## **2. The standard analysis versus the parenthetical analysis**

Although the difficulties of standard approaches to backward conjunction reductions within generative grammar seem reason enough to reject them, it seems appropriate to compare their properties to the properties of the parenthetical approach. In this section we will do so, zooming in on the constituent properties and intonational issues. Three remarks are in order beforehand:

- We will compare the parenthetical approach with a typical, standard deletion approach. Obviously, existing analyses differ in various respects. Some work with real deletion, others take an interpretive view. We will return to these details in Section 3, assuming for the moment that all of the analyses are alike in relevant respects;
- In more recent analyses within generative grammars, special mechanisms have been proposed (like threedimensional syntax or grafting). These mechanisms may circumvent some of the problems discussed in this section. We will return to these analyses in Section 3;
- We will ignore for the moment approaches within other frameworks, notably within categorial grammar (e.g. Steedman 1985, 1990). The reason for this is that the notion of constituent has an entirely different meaning (if it means anything at all) in categorial grammar than in generative and traditional grammar. A comparison of the predictions with respect to constituent structure is therefore impossible.

Notable recent examples of standard generative approaches to backward conjunction reduction are Wilder (1997), Van der Heijden (1999) and Hartmann

(2000). They agree in assuming an underlying normal coordination of two sentences. Backward conjunction reduction is, according to them, a change at the right periphery of the first conjunct:

- 13 [Jan heeft de hond ~~geaaid~~] en [Piet heeft de kat geaaid].  
John has the dog petted and Pete has the cat petted  
'John petted the dog and Pete petted the cat.'

The mainstream analysis of gapping is that such an utterance originated as a coordination of two main clauses, but the finite verb and possibly one or more other constituents from the second clause have been deleted under identity with elements in the first clause, as exemplified in 14 (cf. for instance Neijt 1979).

- 14 [Jan heeft de hond geslagen] en [Piet heeft de kat geslagen].  
John has the dog beaten and Pete has the cat beaten  
'John beat the dog and Pete the cat.'

As explained in Section 1.3, the standard analysis of ambi-ellipsis is to regard it as a combination of backward conjunction reduction and gapping:

- 15 [Jan heeft de hond ~~geslagen~~] en [Piet heeft de kat geslagen].  
John has the dog beaten and Pete has the cat beaten  
'John beat the dog and Pete the cat.'

The most prominent difference between all of these analyses and a parenthetical approach to backward conjunction reduction (and ambi-ellipsis) is the fact that they make different predictions as to their constituent structure. Whereas standard approaches assume a normal coordination with a change at the right periphery of the first conjunct, the parenthetical analysis relates the construction to coordinated comment clauses that can be inserted parenthetically. We will compare the approaches in this respect in the next section.

### 2.1 Constituent analysis

Parenthetical analyses of reduction constructions make different predictions about constituent structure than deletion analyses. In this section, we will investigate which approach makes the best predictions. In examples 16a-b and 17a-b we have depicted the constituents that are identified in backward conjunction reduction constructions and ambi-ellipsis constructions by the parenthetical analysis (a) and the deletion analysis (b), respectively.

- 16a Jan heeft de hond [en Piet heeft de kat] geslagen.  
John has the dog and Pete has the cat beaten  
16b Jan heeft de hond e [en Piet heeft de kat geslagen].

- 17a Jan heeft de hond [en Piet de kat] geslagen.  
 John has the dog and Pete the cat beaten
- 17b Jan heeft de hond e [en Piet e de kat geslagen].

We see that in both constructions the predictions with respect to constituency differ. In backward conjunction reduction constructions, a parenthetical analysis takes [*en Piet heeft de kat*] (16a) to be a constituent, whereas the deletion analysis identifies [*en Piet heeft de kat geslagen*] as a constituent (16b). In ambi-ellipsis constructions, the parenthetical analysis takes [*en Piet de kat*] as one constituent (17a), whereas the deletion approach identifies [*en Piet de kat geslagen*] as one constituent (17b).

Which of these predictions is best? In order to answer this question, we will apply four tests for determining constituency. According to Hendriks & Zwart (2001), strings can be considered as constituents when they can be coordinated, moved, either replaced or deleted, and when they can be used independently.<sup>5</sup> We will discuss each of these four tests in the following four subsections.

### 2.1.1 Is coordination of the alleged constituent possible?

The first test for constituency is the possibility to coordinate the alleged constituent. If a string of words can be coordinated, it is very likely a constituent. The constituents predicted by the parenthetical approach to backward conjunction can indeed be coordinated (cf. 18a for normal backward conjunction reduction, and 18b for ambi-ellipsis):

- 18a Ik heb Jan [,Jan heeft Piet] [, Piet heeft Klaas] [en Klaas heeft Koos] geslagen.  
 I have John John has Pete Pete has Klaas and Klaas has Koos  
 beaten  
 'I beat John, John beat Pete, Pete beat Klaas and Klaas beat Koos.'
- 18b Ik heb Jan [, Jan Piet] [,Piet Klaas] [en Klaas Koos] geslagen.  
 I have John John Pete Pete Klaas and Klaas Koos beaten

In contrast, the prediction of the standard approach to ambi-ellipsis (19b) is wrong.

- 19a Ik heb Jan en [Jan heeft Piet (geslagen)] en [Koos heeft Klaas geslagen].  
 I have John and John has Pete beaten and Koos has Klaas  
 beaten
- 19b \* Ik heb Jan en [Jan Piet geslagen] en [Kees Klaas geslagen].  
 I have John and John Pete beaten and Kees Klaas beaten

<sup>5</sup> A fifth test, not discussed by Hendriks & Zwart, is that constituents cannot be interrupted by other sentence material. However, as the constituents identified by the competing analyses both pass this test, it has no distinctive value.

The standard approach is able to account for the normal backward conjunction reduction of 19a by repeatedly deleting (or leaving out) the right-peripheral element of consecutive conjuncts. However, in case of ambi-ellipsis, the alleged constituent *Jan Piet geslagen* cannot be coordinated at all.

### 2.1.2 Is movement of the alleged constituent possible?

If a sequence of words can be moved, it is likely to form a constituent. Of course, movement of a constituent may be limited or prevented by bounding and binding restrictions, so the impossibility to move is not an argument against constituency. However, if movement is possible, then constituency is likely.

At first glance, movement of the alleged coordinated comment clause under a parenthetical approach seems to be impossible:

- 20a Jan gaf [en Piet ontnam] de man een fiets.  
John gave and Pete deprived the man a bike  
'John gave the man a bike and Pete stole it from him.'
- 20b \* Jan gaf de man [en Piet ontnam] een fiets.
- 20c \* Jan gaf de man een fiets [en Piet ontnam]

However, 20b and 20c have counterparts with more elaborate comment clauses:

- 20d Jan gaf de man [en Piet ontnam de man] een fiets.  
John gave the man and Pete deprived the man a bike
- 20e Jan gaf de man [en Piet ontnam hem] een fiets.  
John gave the man and Pete deprived him a bike
- 20f Jan gaf de man een fiets [en Piet ontnam de man een fiets].  
John gave the man a bike and Pete deprived the man a bike
- 20g Jan gaf de man een fiets [en Piet ontnam hem die].  
John gave the man a bike and Pete deprived him it

A crucial assumption of the parenthetical analysis is that all of the examples 20a-g involve essentially the same comment clause inserted at various positions (whether this is actually movement or insertion is a different matter). However, examples 20a-g differ in the overtness of the arguments in the comment clause. All arguments with a counterpart to the left must be overt (either in full form or in pronominal form;<sup>6</sup> cf. 20d-g); arguments with a counterpart to the right must be covert (provided they are right-peripheral, as explained in Section 1; cf. 20a).

---

<sup>6</sup> We will return to some interpretation issues regarding the exact pronominal form in Section 4.2.

Note that a mechanism to account for this behaviour is needed for independent reasons, viz. for undisputed comment clauses as discussed in Section 1.<sup>7</sup> A standard deletion analysis for the backward conjunction reduction construction in 20a has no ways to relate 20a to 20d-g. Clearly, it misses a generalization.

In case of ambi-ellipsis, movement (or alternative placement) of the alleged coordinated comment clause is straightforward:

- 21a Ik heb Jan een CD gegeven [en jij Piet een boek].  
 I have John a CD given and you Pete a book  
 'I gave John a CD and you gave Pete a book.'
- 21b Ik heb Jan een CD [en jij Piet een boek] gegeven.  
 I have John a CD and you Pete a book given

The gapped coordinated comment clause has to be inserted to the right of all arguments contrasted, so that leaves only one sentence-internal position in 21b. Note that gapping conjuncts do not allow overt non-contrastive arguments, like *Jan* in 22a or *hem* in 22b:

- 22a \* Ik heb Jan een CD gegeven [en jij Jan een boek].  
 I have John a CD given and you John a book  
 'I gave John a CD and you gave John a CD.'
- 22b \* Ik heb Jan een CD gegeven [en jij hem een boek].  
 I have John a CD given and you him a book

As expected, they are equally impossible in ambi-ellipsis:

- 22c \* Ik heb Jan een CD [en jij Jan een boek] gegeven.  
 22d \* Ik heb Jan een CD [en jij hem een boek] gegeven.

Comparing 20d-e with 22c-d, we see that in both cases the first argument of the comment clause (*Piet* and *jij*, respectively) is contrasted with an argument on the left in the host clause (*Jan* and *ik*). The second argument (*de man/hem* and *Jan/hem*, respectively) is not contrasted: it is the same in both the host sentence and the

---

<sup>7</sup> It is also needed for constructions which are not parenthetical or coordinated at all, for instance

- i Een man met één huwde een vrouw met twee kinderen.  
 a man with one married a woman with two children  
 'A man with one child married a woman with two children.'

These constructions are characterized by two contrasted constituents (een kind and twee kinderen respectively), the left of which is affected by some right peripheral deletion process (hence the term Left Deletion, used by Kathol 1999). Note that this process does not involve any kind of coordination or parenthetical insertion at all. Apparently, the mechanism responsible for the elliptic left constituent is more general. Also note that the deleted element (if it is deleted at all) is not exactly identical to the overt contrasted element. We will return to this in Section 3.

comment clause. In case of a finite verb (20b-e), the overt form of a non-contrastive element with a counterpart to the left is allowed and even obligatory. For gapping clauses however, the situation is slightly less clear. Obviously, the overt form is not allowed. However, whether the covert form is allowed or not is decided by additional principles:

- 22e \* Ik heb Jan een CD [en jij een boek] gegeven
- 22f ? Ik heb Jan een CD gegeven [en jij een boek]
- 22g Ik heb Jan een CD [en jou een boek] gegeven
- 22h Ik heb Jan een CD gegeven [en jou een boek]
- 22i \* Ik heb Jan een CD [en jij Piet] gegeven
- 22j Ik heb Jan een CD gegeven [en jij Piet]

Apparently, a covert argument is possible if the gapping clause is clause-final (22f,h,j), or if the argument is clause-initial in the gapping clause (22g). If the covert argument is surrounded by overt arguments, the result is less acceptable (22f).

So, it appears that the parenthetical approach to backward conjunction relates in an interesting way the constructions in 20-22, applying the same principles to all of these cases to predict the correct surface forms. The standard approach again misses a generalization here.

There is no way to move the constituents predicted under a standard approach, neither normal backward conjunction reductions (23a-b) nor ambi-ellipsis constructions (23c-d):

- 23a Ik heb Jan een CD [en Jan heeft Piet een CD gegeven].  
I have John a CD and John has Pete a CD given
- 23b \* Ik heb Jan [en Jan heeft Piet een CD gegeven] een CD.
- 23c Ik heb Jan een CD [en Jan Piet een CD gegeven].
- 23d \* Ik heb Jan [en Jan Piet een CD gegeven] een CD.

Even if the second conjunct contains a non-contrastive argument that also occurs in the first conjunct, movement to a sentence-internal position of the second conjunct is impossible. Of course, the impossibility to move is not an argument that the analysis is wrong, but still the parenthetical approach does better.

### 2.1.3 Is it possible to leave out or replace the alleged constituent?

The main observation that led to the parenthetical approach of backward conjunction reduction constructions was that in the surface form, a clause is interrupted and continued at a later stage. This implies that the string between the interruption and the continuation can always be left out, cf. 24. The same goes for ambi-ellipsis constructions, cf. 25:

- 24a Ik aaide [en Piet sloeg] de hond.  
I caressed and Pete beat the dog
- 24b Ik aaide de hond.  
I caressed the dog
- 25a Ik heb Jan een boek [en Piet een CD] gegeven.  
I have John a book and Pete a CD given
- 25b Ik heb Jan een boek gegeven.  
I have John a book given

In sharp contrast, the alleged coordinated constituent under a standard approach can almost never be left out:

- 26a Ik aaide [en Piet sloeg de hond].  
I caressed and Pete beat the dog
- 26b \* Ik aaide.  
I caressed
- 27a Ik heb Jan een boek [en Piet een CD gegeven].  
I have John a book and Pete a CD given
- 27b \* Ik heb Jan een boek.  
I have John a book

Example 26b is ruled out by the fact that *aaien* is an obligatorily transitive verb, and 27b is ungrammatical due to the fact that the sentence lacks a main verb.

In this case again, the impossibility to leave out the alleged constituent may be due to other reasons. The fact remains however, that the constituents predicted by the parenthetical approach show a perfectly normal behaviour.

#### 2.1.4 Can the alleged constituent be used independently?

As in the case of movement, at first glance independent use of the alleged constituent under the parenthetical approach to backward conjunction reduction seems to be impossible:

- 28a Jan aaide [en Piet sloeg] de hond.  
John petted and Pete beat the dog
- 28b \* en Piet sloeg  
and Pete beat

Even in a dialogue where someone just said *Jan aaide de hond*, it is impossible for another speaker to add *en Piet sloeg* as a comment. So the predictions of the parenthetical approach seem wrong. However, note that the sentence-final variant of the comment clause as discussed in 20f-g of Section 2.1.2 indeed can be used in such a dialogue:

- 29a A: Jan aaide de hond.  
       John petted the dog  
 B: en Piet sloeg de hond!  
       and Pete beat the dog
- 29b A: Jan aaide de hond.  
       John petted the dog  
 B: en Piet sloeg hem!  
       and Pete beat it

The same restrictions seem to hold for the independent use of comment clauses as for the sentence-final ones.

In case of ambi-ellipsis, since it is analysed as an alternative placement of a gapping constituent, the fact that the gapping constituent can be used independently implies the same for the coordinate comment clause. So, the parenthetical approach correctly predicts the constituent behaviour of the comment clause.

For the standard approach, the situation is again worse. In case of normal backward conjunction reduction, the analysis correctly predicts that the second conjunct can be used independently. But now the first conjunct is the problem. Consider the following dialogue:

- 30 \* A: Ik heb Jan  
       I have John  
 B: en Jan heeft Piet geslagen!  
       and John has Pete beaten

Although the dialogue does not seem altogether impossible, it feels like the second speaker interrupts and continues the utterance from the first.

The possibility to use the second conjunct independently does not come as a surprise: in case of normal backward conjunction reduction, the second conjunct is a full clause under the standard analyses. The impossibility to use the first clause independently is a problem that has to be accounted for.

In case of ambi-ellipsis, a standard analysis fails to predict a constituent that can be used independently, which makes its analysis as one constituent suspect:

- 31 \* en Jan Piet geslagen.  
       and John Pete beaten

The predictions of the parenthetical approach and the standard approach with respect to normal backward conjunction reduction both require additional provisions. At best, they can be considered comparable. However, with respect to ambi-ellipsis constructions the standard approach is worse. Independent use of the alleged constituent *en Jan Piet geslagen* seems impossible in any discourse.

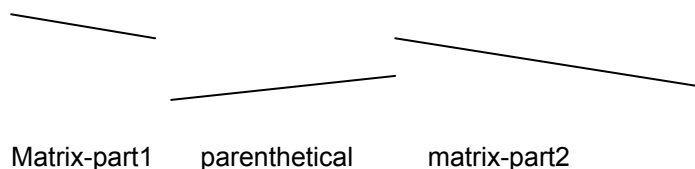
### 2.1.5 Summarizing constituent behaviour

The comparison of the predictions of both approaches to backward conjunction reduction shows a clear pattern: on all tests, the parenthetical approach scores better or at least comparable to the standard approach. The latter clearly performs very poorly in case of ambi-ellipsis, and not flawless in case of normal backward conjunction reduction. In other words: whereas the parenthetical approach predicts surface constituents that behave like normal constituents (or that can be argued to result from general principles), the standard approach does not do so for several cases.

Since the standard approach already suffered from theoretical shortcomings, the poor performance on the constituent test constitutes further argumentation to reject it.

### 2.2 Prosodic information

Wichmann (2001) studies the intonation pattern of parenthetical constructions in English. She observes that various types of parenthetical constructions, like comment clauses, reporting clauses and some types of coordination, have their own intonation contour. There is a sharp decrease in pitch at the beginning of the parenthetical construction (in Schelfhout 1999 this is called the *parenthetical dip*) and the entire construction is pronounced a bit faster, less loudly and with a lower pitch than the surrounding sentence. Parenthetical constructions do not seem to be integrated in the intonation contour of their host clause. Very schematically, this looks as represented in Figure 1:



**Figure 1:** The intonation pattern of a parenthetical construction

Wichmann's observations for English seem to carry over to Dutch. Schelfhout et al. (2004a) suppose a similar intonation pattern for parentheticals like *I believe, I think, it seems*. Also in the Transcription of Dutch Intonation (ToDI) system,<sup>8</sup> parenthesis is indicated to have an intonation pattern of its own.<sup>9</sup> Of course, when all other factors that influence the prosody of a clause are taken into account,<sup>10</sup> the intonation pattern looks more complicated than in Figure 1, as exemplified in 32 and 33 (cf. Rietveld & Van Heuven 1997 for the details of the intonation pattern). However, the separate tone contours and the parenthetical dip can still be observed.

<sup>8</sup> Cf. <http://todi.let.kun.nl/ToDI/home.htm>.

<sup>9</sup> In Rietveld & Van Heuven (1997: 275) it is argued that reporting clauses copy the intonation contour from the preceding part of the matrix clause in extraposed position; this also seems to be the case in clause-internal position.

<sup>10</sup> Cf. Van Dooren and Van den Eynde (1982), amongst others.



%L            H\*L H%L                            H%L H\*L                            H\*L L%

32 Ik geLOOF,        zei Annie,        DAT je wat        moet UITleggen.  
 I believe        said Annie        that you something should explain  
 'I think, Annie said, that you ought to explain something.'



%L            H\*            H%L                            H\* H%L                            H\*L L%

33 Ik beLOOF je –        en datis nog        maar hetbeGIN –        datik hem zalWURgen!  
 I promise you        andthatis yet        just the beginning        thatI him will strangle  
 'I promise you, and that is only just the beginning, that I will strangle him.'

Looking at coordinated comment clauses, we often observe a similar intonation pattern.<sup>11</sup> Again there seems to be a parenthetical dip at the start of the comment clause and the intonation pattern of the comment clause seems to be independent of the intonation pattern of the host clause. Besides that, there is a strong emphasis on the final contrastive constituent in the comment clause and its counterpart in the preceding part of the matrix clause, and somewhat less emphasis on other contrastive constituents and their counterparts.

Hartmann (2000) observes for German backward conjunction reduction constructions that there is an optional intonational break before the coordinator and a difference between the offset level of the element preceding the coordinator and the onset level of the parenthetical contrastive conjunct. Also Cann et al. (2005) note the specific intonation pattern which is often associated with backward conjunction reduction constructions. This pattern is exemplified in 34:

<sup>11</sup> A group of counterexamples consists of conjunction reductions with a consecutive interpretation: the relationship between the first and second conjunct is not contrastive but consecutive, as in

- ii Jan ging op en zakte voor zijn tentamen.  
 John went for and failed for his examination  
 'John went for his examination and failed it.'

Although these constructions can indeed be pronounced with the parenthetical intonation pattern, it is not at all necessary; a neutral pronunciation seems perfectly possible.



- 34 Ik zal JAN [<sub>par</sub> en JIJ moet KLAAS] onschadelijk maken.  
 I will John and you must Klaas harmless make  
 'I will kill John and you have to kill Klaas.'

In written language, the coordinated comment clause is sometimes surrounded by dashes or commas so as to indicate this pattern, cf. 35.

- 35 Ik heb Piet -en Piet heeft mij- diep gekwetst.  
 I have Pete and Pete has me deeply hurt  
 'I have hurt Pete deeply, and he me.'

The parenthetical approach to backward conjunction reduction immediately accounts for the possibility of this intonation pattern. The intonation pattern of the comment clause is the same as the parenthetical pattern because the comment clause is analysed as a parenthetically inserted constituent. It is hard to see how this intonation pattern can be explained by deletion approaches. To our knowledge, only Hartmann (2000) makes an attempt to do so by placing prosodic restrictions on backward deletion.

It might be objected that the observed intonation pattern is not exclusively reserved for parentheticals or intercalations. An anonymous reviewer of an earlier version of this paper cited an example from Haeseryn et al. (1997: 1562):

- 36a Hoewel hij vol hoop is óp, is hij niet afhankelijk ván een goede  
 although he full hope is on is he not dependent of a good  
 uitslag.  
 result  
 'Although he strongly hopes for a good result, he is not dependent on it.'

Although the intonation pattern of 36a is arguably not quite the same as a true parenthetical pattern (for instance, there is no real parenthetical dip, and there is no fluent pattern of a host clause), the emphasis on *op* and *van* indeed resembles the emphasis pattern on *tien* and *twintig* in example 6e. This pattern and the contrastive meaning of this example call for an analysis. How can they be accounted for under both approaches?

Under a standard approach, there is no analysis we know of for this sentence. First of all, it is not an example of coordination, but rather of subordination.

Apparently, a subordinate clause is inserted into a main clause. Furthermore, the subordinate clause seems to be topicalized. It can also occur sentence-internally:

36b Hij is niet afhankelijk ván, hoewel hij vol hoop is óp, een goede  
he is not dependent of although he full hope is on a good  
uitslag.  
result

Although this still is a construction that is unaccounted for under a standard approach to backward conjunction reduction, it is in perfect accordance with a parenthetical approach. If the string *hoewel hij vol hoop is op* is considered a parenthetically inserted comment clause, the fact that the right-peripheral argument to the preposition *op* is left empty, is exactly as expected. Even the possibility of a sentence-final version is predicted:

36c Hij is niet afhankelijk ván een goede uitslag, hoewel hij vol hoop is  
he is not dependent of a good result although he full hope is  
óp een goede uitslag.  
on a good result

36d Hij is niet afhankelijk ván een goede uitslag, hoewel hij vol hoop is  
he is not dependent of a good result although he full hope is  
daaróp.  
thereon

Since now the comment clause is inserted to the right of the non-contrastive argument *een goede uitslag*, it should be overt, either in non-stressed full form, or in pronominal form.

So it seems that this argument against a parenthetical approach backfires. Although a standard approach has nothing to say about 36, the parenthetical approach is able to relate it to other variants, making use of the same general principles that are already needed to account for the normal cases. Obviously, it may be that topicalization of a parenthetical insert yields special results (such as a different intonation pattern, and the possibility to leave out right-peripheral elements). It seems that the parenthetical approach to 36 is a lot more promising than other approaches.

In summary, it seems that there is a characteristic intonation pattern for parenthetical inserts, that is at least possible (and often preferred) for the backward conjunction reduction examples we have used. Although the intonation pattern is neither a necessary condition, nor an inevitable consequence of the parenthetical analysis, the fact that backward conjunction reduction constructions can always be pronounced with a parenthetical dip at least necessitates a parenthetical analysis for these cases. For example, cf. 35 (*ik heb Piet –en Piet heeft mij- gekwetst*). Surely this sentence has to be considered a parenthetical construction. But if it is, why

should it be analysed totally different without the dashes or with a different intonation pattern?

### 3. Non-parenthetical approaches discussed in detail

In Section 2.1, we already remarked that the comparison of the parenthetical approach to the more standard approach left out the more intricate details of the respective analyses. Also, more recent proposals have remained undiscussed so far. In this section, we will discuss several analyses in more detail.

In deletion analyses of backward conjunction reduction constructions, the elements to be deleted must be right-peripheral in the first clause and they must be syntactically, phonologically and semantically equal to the right-peripheral elements in the coordinated clause. These elements together can form any kind of string: backward conjunction reduction can occur in the middle of constituents, as exemplified in 37 and 38:

37 Jantje wil een rode ~~bal~~ en Piet wil een groene bal.  
Johnny wants a red ball and Pete wants a green ball  
'Johnny wants a red ball and Pete wants a green one.'

38 Ik wil graag naast ~~deoptochtlopen~~ en Piet wil het\_liefst  
I want happily alongside theparade walk and Pete wants preferably  
achter de optocht lopen.  
behind the parade walk  
'I would like to walk alongside the parade and Pete prefers walking behind it.'

For Wilder (1997), this is the reason to develop a phonological deletion approach for backward conjunction reduction. A structural approach runs into problems, since the reduction process is insensitive to constituent boundaries.

Restrictions on deletion analyses for gapping constructions are very different. Neijt (1979) proposes a general rule 'Delete', arguing that independent principles restrict the over-generation of this rule. In particular, she argues that only major constituents can be remnants in gapping constructions, whereas a rule of strict subjacency restricts the elements that can be deleted. Recoverability of the deletion is dealt with at the level of Logical Form. Hence, unlike backward conjunction reduction gapping is sensitive to constituent boundaries. Hartmann (2000) adds prosodic restrictions to the conditions. Coppen et al. (1993) defend a deletion analysis for gapping for which they reformulate the definition of major constituent as given by Neijt.

These canonical analyses are not in all respects satisfactory. A problem for backward conjunction reduction analyses is the possibility of multiple deletion, cf. 39 (derived from M. De Vries 2005):

- 39 Joop bemint ~~Bush~~, Jaap verafschuwt ~~Bush~~, Joep haat ~~Bush~~, en Job  
 Joop loves Bush Jaap detests Bush Joep hates Bush and Job  
 adoreert ~~Bush~~.  
 adores Bush  
 'Joop loves, Jaap detests, Joep hates and Job adores Bush.'

The deletion analysis could only be applied in a cyclic way, taking two clauses at a time. Here the direction is problematic. If we have to assume that deletion takes place from right to left, in example 39, when *Bush* is deleted in the third clause, the necessary context for the deletion of *Bush* in the second clause is no longer present. This suggests that the cycles of two clauses should be taken from left to right or, in other words, from the top to the bottom of the tree. This is the opposite direction of any operation in generative analyses. There seems to be no theoretical backing for it.

Coppen et al. (1993) argue that an analysis of deletion of equal elements in the second conjunct of gapping constructions is sometimes plainly impossible. In the same line of reasoning, they also argue that the interpretation of the gapping construction does not presume that there are identical elements in the first and second conjunct, as seems to be suggested by the recoverability approach mentioned in Neijt (1979), but, rather, that the second conjunct makes an anaphoric reference to elements in the first conjunct. We will repeat two arguments that they use to support this line of argumentation:

1. As far as person and number are concerned, reflexives, finite verbs and possessives need not be identical in the first and second conjunct:

- 40 Wij hebben ons wel vergist, maar hij heeft zich niet  
 we have ourselves admittedly mistaken but he has himself not  
~~vergist.~~  
 mistaken  
 'We were indeed mistaken, but he was not.'

- 41 Marie had haar buik vol van voetbal en de jongens hadden  
 Mary had her belly full of soccer and the boys had  
~~hun buik vol~~ van Toppop.  
 their belly full of Toppop  
 'Mary was sick and tired of soccer and the boys of Toppop.'

These examples clearly show that phonological identity of elements in the first and second clause is not required; in fact semantic and syntactic identity is not required either, since person and number features can differ. What seems to be required is some kind of correspondence as is suggested by Kempen and Huijbers (1983). They propose the term *lemma identity* for this, suggesting that the lemma should be identical, although its agreement features may differ. Van der Heijden (1999) employs the term  *$\alpha$ -characteristics* for a similar requirement.

2. A second argument put forward in Coppen et al. (1993) concerns negative polarity items. If these occur in the first conjunct and the gapping conjunct is its positive counterpart, the resulting sentence is entirely correct:

42 Jij hoeft morgen niet naar school, maar ik ~~\*hoef/moet~~ ~~morgen~~ wel naar  
you need tomorrow not to school but I need/have\_to tomorrow PRT to  
mijn werk.  
my job  
'You don't have to go to school tomorrow but I have to go to my job.'

43 Jan had geen snars begrepen van Chomsky, maar Piet ~~had~~ wel  
John had not a\_bit understood of Chomsky but Pete had indeed  
~~\*een snars~~ ~~begrepen~~ van Montague.  
a bit understood of Montague  
'John couldn't make head or tail of Chomsky, but Pete could of Montague.'

This poses a problem for a deletion analysis, because it raises the question what exactly is deleted. In Dutch, the positive counterpart of *hoeven* is *moeten*, but there is no positive counterpart of *geen snars*. Nevertheless, the gapping conjuncts are completely correct. So what full sentences could underly 42 and 43? It is obvious that an explanation of gapping as the deletion of equal constituents, or even constituents identical at the level of their lemmas, cannot be correct in positive counterparts of negative polarity items. Coppen et al. propose that gapping should be analysed through some interpretive mechanism that fills in the empty parts in the second conjunct.

Van der Heijden (1999) adds a conceptual problem to the objections against deletion analyses for gapping. In the analysis as presented by Neijt and in similar analyses, the resulting gapping constructions are formed by deletion of certain elements, but this formation is restricted by conditions on other elements that survive deletion (in particular, that remnants must be major constituents). This is conceptually unattractive. For Van der Heijden this is the reason to analyze gapping as the coordination of independent constituents. Each independent constituent must be linked to a correlate in the preceding clause. This linking is only possible if each independent constituent and its correlate are lexically closely related.<sup>12</sup> Linking is only allowed for maximal projections<sup>13</sup> and must take place from left to right.

Note that under a parenthetical approach of gapping, sloppy interpretation, or even the addition of elements that typically occur in comment clauses, is not at all strange. Consider 44:

---

<sup>12</sup> Van der Heijden argues that they must have the same  $\alpha$ -characteristics.

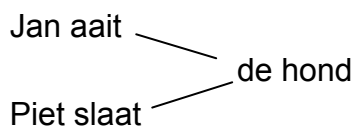
<sup>13</sup> Loosely formulated, arguments and modifying phrases directly dominated by a sentential or verbal projection.

- 44 Jan houdt van Marie, en Piet volgens mij ook nog van Kim.  
 John loves of Mary and Pete according-to me also still of Kim  
 'John loves Mary, and Pete also loves Kim, I think.'

The elements *volgens mij* and *ook nog* do not have counterparts in the first conjunct. This is somewhat unexpected under a standard approach to gapping. Considering gapped conjuncts as parenthetical inserts however, immediately yields this possibility.

The above-mentioned difficulties with deletion approaches led some linguists to look for alternatives. They noted that in backward conjunction reduction constructions the final part of the clause, *de hond* 'the dog' in example 45, could be the completion of both preceding incomplete clauses. For this reason they assume it to be shared, as in the following example:

- 45 Jan aait en Piet slaat de hond.  
 John caresses and Pete beats the dog



We will use the term 'shared structure analysis' as an umbrella term for analyses in which one or more elements of the surface structure clause are shared by either different mothers or different layers.

In Wilder (1999) it is argued that the single mother condition must be given up to allow multiple dominance of the shared element. In this way, backward conjunction reduction and gapping can be analyzed in the same way (in combination with the Linear Correspondence Axiom and Trace Deletion), without the need to stipulate the right periphery condition for backward conjunction reduction constructions.

G. de Vries (1992) and Grootveld (1994) developed a three-dimensional analysis for coordinated clauses in Dutch, which can also be applied to conjunction reductions. This type of analysis boils down to the idea that each conjunct is placed in a different layer, parallel to the preceding conjunct(s), thus accounting for the semantic notion that the second conjunct is not subordinated to the first one but parallel to it. Conjunction reductions can then be implemented in stating that parallel layers can share elements. This idea has been implemented by various ways. Thus in Van Riemsdijk (1998), we find an analysis for backward conjunction reduction such that the second clause is a graft on the tree of the first clause; the shared right-peripheral element is present in both clauses. M. de Vries (2003, 2004) introduces a second type of Merge, *b-* or "behindance Merge". This behindance merge is resistant to dominance and can be thought of as being in a different layer. A coordinated clause is *b-*merged with the first clause. In conjunction reductions, both clauses

contain the same shared element. Since there is no dominance relation between them, this does not cause any syntactic problems.

Coppen et al. (1993) argue that assuming a three-dimensional analysis is an unnecessary extension of the generative framework, since the generative power of this framework is theoretically sufficient to cover all characteristics of coordinating constructions<sup>14</sup>. Extending the framework with a third dimension in which notions such as *c-command* and binary branching are out of order or get a different interpretation, only to deal with coordination, is conceptually the same as stating that coordinations are exceptional; in fact it is even worse, since the consequences of such an extension affect the entire grammar.<sup>15</sup> Furthermore, shared structure analyses do not provide an explanation for the intonation pattern of parenthetical contrastive conjuncts.

It looks like none of the analyses discussed is able to explain all three variants of parenthetical contrastive conjuncts (backward conjunction reduction, gapping and ambi-ellipsis) in the same way. This seems to miss a generalization, in view of the resemblances between those constructions that we discussed in Sections 1 and 2. Besides that, the deletion analysis cannot explain the constituent behaviour, the optionality or the intonation pattern of parenthetical contrastive conjuncts. Shared structure approaches have difficulties with explaining the intonation pattern of backward conjunction reduction constructions and with the explanation of ambi-ellipsis and gapping constructions. Besides, they extend the formal apparatus of the generative framework while we reuse the already existing notion of parenthetical adjunction.

#### **4. Objections against the parenthetical approach**

Of course, there are also arguments against a parenthetical approach. We will discuss two major objections in the next sections.

##### *4.1 The isomorphy hypothesis*

A fundamental objection to the parenthetical approach appears to be that it is incompatible with the isomorphy hypothesis. This term is used by Kerstens (1981a) and Sturm & Weerman (1983) for the hypothesis that the propositional form of a certain utterance is reflected in its syntactic form. It is this hypothesis which led many linguists to assume deletion in conjunction reduction constructions: a proposition is standardly expressed in the syntactic form of a clause. So, if a given sequence expresses a proposition, it must have the syntactic form of a clause as well. This implicit line of reasoning became explicit in the discussion between Kerstens and

---

<sup>14</sup> Peters and Ritchie (1973) proved that the mathematical power of generative grammar is equal to that of a Turing Machine. Since then, no adaptation of the mainstream framework has been developed that formally decreases this power. So, whatever new mechanism is proposed, it can never add to the mathematical power of the model.

<sup>15</sup> This argument pertains less to M. de Vries, as he uses three-dimensional analyses for several types of construction.

Neijt on Neijt (1979), in their papers Kerstens (1981a), Neijt (1981) and Kerstens (1981b). The reasoning of deletion analyses is as follows: gapping constructions as exemplified in 46 can only be interpreted by copying at least one part of the first clause into the second clause, viz. that John beats the dog and that Pete *beats* the cat. Therefore, *Pete beats the cat* is supposed to be the underlying form of and/or the proposition connected to *Pete the cat* in 46.<sup>16</sup>

46     Jan slaat de   honden   Piet dekat.  
       John beats the   dog   and   Pete thecat  
       ‘John beats the dog and Pete the cat.’

It is this assumption that leads Neijt to ask the question which rule(s) is/are responsible for the deletion of *beats* and which conditions hold for this rule or these rules. However, as Kerstens points out, this question depends entirely on the assumption that the correct interpretation must have had some syntactic reflection. The question disappears when this assumption is weakened or abandoned.

There seem to be independent reasons to doubt the value of the isomorphy axiom for each and every utterance. Sturm (1986) provides examples of constructions whose proposition is hard to tell and which therefore are hard to give a syntactic structure in accordance with the isomorphy hypothesis. Such constructions are exemplified in 47:

47     Van onderen!  
       timber!  
       Jan?  
       John?  
       Verloren.  
       lost  
       Komt eraan.  
       coming  
       En?  
       and  
       Verdomme!  
       damn

It is hard to say which propositions and therefore which structures must be assumed for such utterances. Sturm (1986) provides a number of arguments that suggest that the isomorphy hypothesis cannot be entirely correct.

Originally, any relationship between entities was assumed to originate from a clausal relationship. Dik (1968) already presented extensive arguments against the

---

<sup>16</sup> In fact, the discussion is not so simple, since Neijt (1979) uses a  $\lambda$ -calculus to express the semantic structure of gapping constructions instead of a simple syntactic deep structure. Since our discussion only aims at clarifying the isomorphy hypothesis, we will not pursue this matter here.

analysis of sentences which contained coordinated constructions as originating from the coordination of simple propositions (which he refers to as the *reduction postulate*); for instance, the clause *John and Mary are a couple* cannot be derived from the coordination of *John is a couple* with *Mary is a couple*. Also, the idea that *green grass* originates from *grass which is green* by use of the Relative Clause Reduction Rule was abandoned long ago in favour of base generation of *green grass*. As already remarked in Section 1.3, there seems to be a development going on in which the reduction of relationships to underlying clauses is gradually replaced by other means. Leaving the idea that so-called backward conjunction reductions originate from coordinated clauses after applying deletion fits in this development.

Although it is beyond the scope of this paper to try and answer the question how far exactly the power of the isomorphy hypothesis should go, we think we can argue that coordinated comment clauses need not inevitably fall within its reach. The constituent behaviour of these conjuncts, their intonation pattern, their optionality and the similarities between the three variants that are assumed by deletion analyses (backward conjunction reduction, gapping and ambi-ellipsis) all point in the direction of a parenthetical approach rather than a deletion approach. Other approaches which implicitly or explicitly abandoned the isomorphy hypothesis have been applied with contrastive conjuncts before. Thus, Sturm (1986) already hints at a coordination of independent constituents approach to gapping, which was implemented technically by Grootveld (1994) and theoretically by Van der Heijden (1999). Although Van der Heijden's analysis failed to recognize that the sequence of these independent constituents behaves as one single constituent (as was shown in Section 2.1), it was an attempt to develop an analysis without a full clause which needs to be partly deleted. The role of the isomorphy hypothesis in the shared structure approaches discussed in Section 3 is unclear.

#### 4.2 The interpretation of pronominal forms

In Section 2.1.2, we discussed the possibility to use a pronominal form for an argument where an overt form is required (example 20, repeated here as 48):

48a Jan gaf de man een fiets [en Piet ontnam hem een fiets].  
 John gave the man a bike and Pete deprived him a bike]  
 'John gave the man a bike, and Pete took it from him.'

48b Jan gaf de man een fiets [en Piet ontnam hem die].  
 John gave the man a bike and Pete deprived him that]

If we compare the interpretation of *een fiets* in these sentence-final variants with the parenthetically inserted variant, a difference seems to occur:

48c Jan gaf de man [en Piet ontnam hem] een fiets.  
 John gave the man and Pete deprived him] a bike

In 48b, it is necessarily the same bike that John gave and Pete took. In 48c, this is not the case. This seems to be a problem for the parenthetical approach. If in 48b and 48c it is the same comment clause that is parenthetically inserted, why should it be interpreted differently?

A first thing to notice in 48b is that the pronominal *die* is definite, whereas the antecedent *een fiets* is indefinite. In Coppen (1991), it is argued that the indefinite pronominal counterpart to *die* is a construction with quantitative *er*, as exemplified in 48d:

48d    Jan gaf de man een fiets [en Piet ontnam hem er een].  
         John gave the man a bike and Pete deprived him ERone]  
         ‘John gave the man a bike, and Pete took one from him.’

This sentence has exactly the same interpretation as 48c. So it seems that 48c should be interpreted as the sentence-internal variant of 48d rather than 48b.<sup>17</sup>

But, one might object, why cannot the coordinated comment clause in 48b be inserted sentence-internally, to yield 48c when the right-peripheral element is left out? The answer obviously must be that the right-peripheral element *die* cannot be left out because it does not refer to the same entity as its counterpart; viz. *die* is definite while the alleged counterpart *een fiets* is indefinite. Hence the interpretation *die* is not available in 48c.

## 5. Conclusions

The theoretical problems with standard approaches to backward conjunction reduction constructions, and the comparison of their predictions with respect to constituent structure and intonation pattern with the predictions made by a parenthetical approach, led us to the conclusion that the standard approaches should be rejected in favour of a parenthetical approach. Not only does this novel approach solve the theoretical problems by no longer needing suspect mechanisms for deletion, movement or attachment, it also offers a basic explanation of the backward conjunction reduction structures as such. Considering backward conjunction reduction as a special kind of parenthetical insertion implies that it is essentially an *interruption construction*, a grammatical mechanism to interrupt a running sentence

---

<sup>17</sup> It might be objected that the position of ‘er een’ is not necessarily right peripheral in the sentence-final parenthetical conjunct. For instance, the insertion of the adverb *ook* ‘also’ takes place between *er* and *een*. This makes the clitic *er* sentence-internal. If deletion should only affect right peripheral elements, this poses a potential problem for a deletion analysis. Note that this objection is not valid. It is not necessary to think of (48c) as a sentence where the pronominal form (of 48d) is deleted, but rather should (48d) be considered as the version of (48c) where the empty part is pronominally realized. Since this takes place at a deeper level than surface structure, the actual surface order of the pronominal form may differ. Besides, in Coppen (1991) it is convincingly argued that the quantitative *er* (which is the clitic in 48d), does indeed originate in a position to the right of the numeral, which makes it right peripheral at deep structure.

to add material serving as a comment, after which the original sentence can be continued – which, in the case of sentence-final insertion, is not necessary.

This basic insight, viz. the relation between backward conjunction reduction constructions and other interruption constructions has already been put forward in psycholinguistic research by Levelt (cf. Levelt 1983). He already saw the fundamental relationship between contraction constructions in general and self-repair. Levelt described repair constructions in the following definition, in which he crucially uses coordination with *and*:<sup>18</sup>

A repair <OU (E) R> is well-formed iff there is a string S such that the string <OU S and R> is well-formed, where S is a completion of the constituent directly dominating the last element of OU.

49a To the right is a green, *uh a blue* node

49b To the right is a green node *and a blue* node

Kempen (1991) builds further on this by developing an analysis for forward conjunction reduction and gapping based on the idea that the second conjunct inherits elements from the first conjunct. Kempen (2004) postulates a relationship between forward conjunction reduction, backward conjunction reduction and gapping, stating that they are all grammaticalized forms of self-repair. Apparently insertion of a new construction, related to the preceding part of the utterance, gives the correct predictions for human language behaviour in both self-repair and conjunction reduction. This suggests that a similar analysis for both constructions, based on insertion, is more likely to be successful than other approaches.

Although the parenthetical approach to backward conjunction reduction is definitely better than standard approaches, it obviously requires further theoretical elaboration. In particular, the true nature of the restrictions on insertion and overtiness of arguments is an important issue. The following questions seem relevant in this respect:

- Why must a coordinated comment clause be inserted to the right of all elements contrasted?
- Why must the elements with an uncontrasted counterpart in the host clause be overt when the counterpart is to the left, and covert when it is to the right?
- Why can these elements be left out when they are right-peripheral?

The answer to the first question may be trivial (in order to contrast something, the counterpart must have been uttered), but the answer to the other ones is more tricky. At worst, these problems seem comparable to the problems of the standard

---

<sup>18</sup> Where OU = Original Utterance, E = Editing term, R = Repair.

approach, where right-peripheral deletion was also a major issue. However, the gain of the parenthetical approach is that it acknowledged that these right-peripheral deletion phenomena also occur with other parenthetical inserts, like for instance the Transparent Free Relatives (cf. Van Riemsdijk 1998, Schelfhout et al. 2004b), as exemplified in 50a:

50a Hij heeft een [wat je moet omschrijven als] corpulent figuur.  
 he has a what you must describe as corpulent figure  
 'He has what you have to call a corpulent figure.'

50b \* Hij heeft een [wat je als moet omschrijven] corpulent figuur.  
 He has a what you as must describe corpulent figure

Like in coordinated comment clauses, an element can only be left out of a parenthetical if it is right-peripheral, cf. the ungrammaticality of 50b.

Finally, the parenthetical approach should be compared in detail to other recent approaches. Some of these (De Vries 2003, Van Riemsdijk 1998) seem to acknowledge the fundamental relationship between parentheticals and backward conjunction reduction. Although in this paper, their approach was rejected on the basis of theoretical considerations, the empirical differences should be studied in more detail. Other approaches, like the result clause analysis in Rijkhoek (1998), and approaches within other frameworks (such as Steedman's analysis in categorial grammar) have remained undiscussed in this paper. This is left for future research.

### Acknowledgments

The authors would like to thank Gerard Kempen and Anneke Neijt for valuable discussion and three anonymous reviewers of earlier versions of this paper for helpful comments.

### References

- Cann, Ronnie; Kempson, Ruth; Marten, Lutz and Otsuka, Masayuki (2005). Right Node Raising, coordination and the dynamics of language processing. *Lingua* 115 (4), 503-526.
- Coppen, Peter-Arno (1991). *Specifying the noun phrase*. Amsterdam: Thesis Publishers.
- Coppen, Peter-Arno; Oltmans, Erik; Van der Borgt, Rian; Van Dreumel, Simon and Teunissen, Lianne (1993). Een Implementatie van Gapping. *Gramma/TTT* 2 (1), 31-45.
- Dik, Simon (1968). *Coordination: Its implications for the theory of general linguistics*. Amsterdam: North-Holland.
- Van Dooren, Karine and Van den Eynde, Karel (1982). A structure for the intonation of Dutch. *Linguistics* 20, 203-235.
- Grootveld, Marjan (1994). *Parsing Coordination Generatively*. HIL dissertations; 7. Dordrecht: ICG Printing.
- Haeseryn, Walter; Romijn, K.; Geerts, G.; de Rooij, J. and van den Toorn, M.C., eds. (1997). *Algemene Nederlandse Spraakkunst*. Groningen / Deurne: Martinus Nijhoff / Wolters Plantyn.

- Hartmann, Katharina (2000). *Right Node Raising and Gapping: Interface Conditions on Prosodic Deletion*. Amsterdam: Benjamins.
- Van der Heijden, Emmeken (1999). *Tussen nevenschikking en onderschikking: een onderzoek naar verschillende vormen van verbinding in het Nederlands*. Den Haag: Holland Academic Graphics.
- Hendriks, Petra and Zwart, Jan-Wouter (2001). Initiële coördinatie en de identificatie van woordgroepen. *TABU* 31 (3/4), 105-118.
- Höhle, Tilman (1983). Subjectlücken in Koordinationen. unpublished manuscript, University of Cologne.
- Hudson, Richard A. (1976). Conjunction Reduction, Gapping, and Right-Node Raising. *Language: Journal of the Linguistic Society of America* 52, 535-62.
- Kathol, Andreas (1999). Linearization vs. phrase structure in German coordination constructions. *Cognitive Linguistics* 10 (4), 303-342.
- Kayne, Richard Stanley (1994). *The antisymmetry of syntax*. Linguistic inquiry monographs ; 25. Cambridge, Mass.: MIT Press.
- Kempen, Gerard and Huijbers, Pieter (1983). The lexicalization process in sentence production and naming: indirect election of words. *Cognition: International Journal of Cognitive Science* 14, 185-209.
- Kempen, Gerard (1991). Conjunction reduction and gapping in clause-level coordination: An inheritance-based approach. *Computational Intelligence* 7, 357-360.
- (2004). Symmetrical clausal coordination as grammaticalized self-repair. Abstract for TABU 2004.
- Kerstens, Johan (1981a). Bestaat Gapping eigenlijk wel? *Spektator* 11, 61-79.
- (1981b). n.a.v. 'Gapping bestaat'. *Spektator* 11, 85-86.
- Levelt, Willem J. M. (1983). Monitoring and Self-Repair in Speech. *Cognition: International Journal of Cognitive Science* 14 (1), 41-104.
- McCawley, James (1964). *Quantitative and qualitative comparison in English*. Paper presented at the winter meeting of the Linguistic Society of America, December 29, 1964.
- Neijt, Anneke (1979). *Gapping: A Contribution to Sentence Grammar*. Ph.D. thesis, Utrecht University.
- (1981). Gapping bestaat. *Spektator* 11, 80-84.
- Peters, P. Stanley and Robert W. Ritchie (1973) Context-sensitive immediate constituent analysis: context-free languages revisited. *Mathematical Systems Theory* 6, 324-333.
- Quirk, Randolph; Greenbaum, Sidney; Leech, Geoffrey and Svartvik, Jan (1985). *A comprehensive grammar of the English language*. London: Longman.
- Van Riemsdijk, Henk (1998). Trees and Scions - Science and Trees. In *Fest-Web-Page for Noam Chomsky*, <http://cognet.mit.edu/library/books/chomsky/celebration/essays/riemsdyk.html>.
- Rietveld, Toni and Van Heuven, Vincent (1997). *Algemene fonetiek*. Bussum: Coutinho.
- Rijkhoek, Paulien (1998). *On degree phrases and result clauses*. Ph.D. thesis, Rijks Universiteit Groningen.
- Ross, John Robert (1968). *Constraints on variables in syntax*. Bloomington: Indiana university linguistic club.
- Schelfhout, Carla (1999). *DIP-constructies in AMAZON: Een onderzoek naar plaats en vorm van de reporting clause in parenthetische directe rede-constructies*. Master's thesis, University of Nijmegen.
- Schelfhout, Carla; Coppen, Peter-Arno and Oostdijk, Nelleke (2003a). Intercalaties? Dat zijn geloof ik van die tussendingen... *Gramma/TTT* 10 (1), 27-44.
- (2003b). Positions of parentheticals and interjections: A corpus-based approach. In *Linguistics in the Netherlands 2003*, Leonie Cornips and Paula Fikkert (eds.), 155-166. Amsterdam, John Benjamins Publishing Company.
- (2004a). Finite comment clauses in Dutch: a corpus-based approach. *Journal of Germanic Linguistics* 16 (4), 331-349.

- (2004b). Transparent free relatives. In *Proceedings of CONSOLE XII*, Sylvia Blaho; Luis Vicente and Mark De Vos (eds.), [http://www.sole.leidenuniv.nl/content\\_docs/ConsoleXII2003pdfs/schelfhout-2003.pdf](http://www.sole.leidenuniv.nl/content_docs/ConsoleXII2003pdfs/schelfhout-2003.pdf).
- Steedman, Mark J. (1985). Dependency and coordination in the grammar of Dutch and English. *Language: Journal of the Linguistic Society of America*. 61 (3), 523-568.
- (1990). Gapping as Constituent Coordination. *Linguistics and Philosophy* 13 (2), 207-263.
- Sturm, Arie and Weerman, Frederikus (1983). *Generatieve syntaxis: een inleiding aan de hand van artikelen*. Leiden: Nijhoff.
- Sturm, Arie (1986). *Primaire syntactische structuren in het Nederlands*. Leiden: Nijhoff.
- De Vries, Gertrud (1992). *On coordination and ellipsis*. Unpublished doctoral dissertation, KUB.
- De Vries, Mark (2003). Three-Dimensional Grammar. In *Linguistics in the Netherlands 2003*, Leonie Cornips and Paula Fikkert (eds.), 201-212. Amsterdam, Netherlands, Benjamins.
- (2004). Parataxis as a Different Type of Asymmetric Merge. In *Proceedings of IPSI (CD-ROM)*, Pescara, <http://odur.let.rug.nl/~dvries/pdf/2004-asymmetry.pdf>.
- (2005). Ellipsis in nevenschikking: voorwaarts deleren maar achterwaarts delen. *TABU* 34, 13-46.
- Wichmann, Anne (2001). Spoken parentheticals. In *A Wealth of English (Festschrift for Göran Kjellmer)*, Karin Aijmer (ed.), 177-193. Gothenburg, Gothenburg University Press.
- Wilder, Chris (1997). Some Properties of Ellipsis in Coordination. In *Studies on Universal Grammar and Typological Variation*, Artemis Alexiadou and Alan T. Hall (eds.), 59-107. Amsterdam, Netherlands, Benjamins.
- (1999). Right Node Raising and the LCA. In *Proceedings of the 18th West Coast Conference on Formal Linguistics*, Sonya Bird; A. Carnie; J. Haugen and P. Norquest (eds.), 586-598. Somerville, MA, Cascadilla.
- Zwart, Cornelius Jan Wouter (1997). *Morphosyntax of verb movement: a minimalist approach to the syntax of Dutch*. Studies in natural language and linguistic theory. Dordrecht: Kluwer Academic Publishers.