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Adverbs in Strange Places. On the Syntax of Adverbs in Dutch

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Abstract

This paper discusses four Dutch constructions in which adverbs occur in marked syntactic positions: (i) Adverbs that occur in an embedded clause but must be interpreted in the main clause; (ii) Adverbs that occur in the main clause but can be interpreted in the embedded clause; (iii) Extraposed adverbs; (iv) Predicate adverbs that occur in the position of sentence adverbs. These phenomena provide evidence for an analysis of adverb placement in Dutch along the lines of the Cinque hierarchy (Cinque 1999), supplemented with the traditional split between sentence adverbs and predicate adverbs (Jackendoff 1972). A new analysis is proposed for the bridge verbs *denken* ‘think’ and *willen* ‘want’ in which they move from a position in the embedded clause into the matrix clause.

Keywords: adverb, adverb raising, adverb extraposition, predicate adverb, sentence adverb, bridge verb, Cinque hierarchy, Dutch, speaker-oriented adverb, volitional adverb, factive adverb, negation, neg-raising

1. Introduction

In this paper we examine four rarely discussed cases of adverbs in Dutch that are “misplaced”, i.e. do not occur in their unmarked positions. The first construction involves adverbs that occur in an embedded clause but must be interpreted in the matrix clause. In the second construction adverbs surfacing in the matrix clause can be interpreted in the embedded clause. Thirdly, we consider adverbs that occur in extraposed position, in a position following the right-peripheral verb position rather than in their unmarked positions in the middle field of the clause, between the Verb Second position and the right-peripheral verb position. The fourth construction involves predicate adverbs that are used as sentence adverbs. Together these phenomena support an analysis of Dutch adverb placement along the lines of the Cinque hierarchy (Cinque 1999), a conclusion reached on independent grounds in Broekhuis and Corver (2016), augmented with a syntactic distinction between predicate adverbs and sentence adverbs (cf. Jackendoff 1972). Another important result is that the analysis proposed in this paper reduces the transparency of finite clausal complements of bridge verbs such as

denken ‘think’ and *willen* ‘want’ to a movement relation between the base position of the bridge verb and its surface position. This movement creates the bridge for other movement operations such as adverb raising and Wh-movement from the clausal complement.

2. Embedded adverbs that must be interpreted in the matrix clause¹

2.1 Syntactic properties

In (1) the speaker-oriented adverb *eerlijk gezegd* ‘honestly’ occurs in the embedded clause but must be interpreted in the matrix clause; *eerlijk gezegd* ‘honestly’ relates to the speaker of the entire utterance. The meaning of (1a) is therefore equivalent to the meaning of (1b), where *eerlijk gezegd* ‘honestly’ is in the middle field of the matrix clause. A similar example is given in (1c), now with the matrix verb *willen* ‘want’. As shown in Barbiers (2017), this phenomenon occurs in German and English as well.²

- (1) a. Ik denk [dat ze **eerlijk gezegd** voor Rooney gaan].
 I think that they honestly for Rooney go.
 honestly > think: ‘Honestly, I think they will go for Rooney.’
 * think > honestly
- b. Ik denk **eerlijk gezegd** [dat ze voor Rooney gaan].
 I think honestly that they for Rooney go
 ‘Honestly, I think they will go for Rooney.’
- c. Ik wil [dat je **per se** pumps aandoet die dag].
 I want that you definitely pumps wear that day
 ‘I definitely want you to wear pumps that day.’

At first sight this looks like a performance error, but upon closer scrutiny the construction turns out to show quite systematic syntactic behavior. Its syntactic properties are given in (2) and illustrated in (3) - (7).

(2) Embedded adverbs with a matrix interpretation

¹ A shorter version of sections 2 and 3 appeared in Barbiers (2017).

² The sentences in (1a,c) were found on the Internet. Both for Dutch, German and English there are quite some naturally occurring sentences of this type on the Internet. Native speaker judgements on these and the other sentences in this paper are quite robust too.

- (i) The construction is only possible with bridge verbs, i.e. matrix verbs that allow for Wh-extraction from their sentential complements and for other transparency phenomena.³
 - (ii) The type of adverb that can occur in this construction depends on the type of matrix verb: speech act adverbs in the case of the matrix verb *denken* ‘think’, volitional modal adverbs in the case of the matrix verb *willen* ‘want’.
 - (iii) With *denken* ‘think’ as the matrix verb, the subject of the matrix clause must be interpretable as the author of the utterance. No such requirement holds in the case of matrix verb *willen* ‘want’.
- (3) Only bridge verbs allow embedded adverbs with matrix interpretation
- a. *Ik weet [dat ze eerlijk gezegd voor Rooney gaan]. factive matrix verb
 I know that they honestly for Rooney go
 # ‘I honestly know that they will go for Rooney.’
 - b. *Ik geef toe [dat ze eerlijk gezegd voor Rooney gaan]. factive matrix verb
 I admit that they honestly for Rooney go.
 # ‘I honestly admit that they will go for Rooney.’
- (4) With the matrix verb *denken* ‘think’, only speech act adverbs have a matrix interpretation⁴
- Ik denk [dat ze helaas/waarschijnlijk/altijd voor Rooney gaan].
 I think that they unfortunately/probably/always for Rooney go
 ‘I think that they unfortunately/probably/always go for Rooney.’
 # ‘I unfortunately/probably/always think that they will go for Rooney.’
- (5) With the matrix verb *willen* ‘want’, only volitional modal adverbs have a matrix interpretation

³ I restrict my attention to *denken* ‘think’ and *willen* ‘want’ and leave the properties of other bridge verbs for future research.

⁴ Other embedded adverbs that can have a matrix interpretation in Dutch include *trouwens* ‘by the way’ and *overigens* ‘in addition’. Ernst (2002) calls these adverbs exo-comparative adverbs because they specify a relation with a preceding sentence. They are very high in the Cinque hierarchy (cf. 8) and do not have a fixed position relative to speech act adverbs. I assume that this is because speech act adverbs and exo-comparative adverbs belong to the same class of adverbs.

Ik wil [dat je altijd pumps draagt].

I want that you always pumps wear

'I want you to always wear pumps.'

'I always want you to wear pumps.'

- (6) The subject of the matrix verb *denken* 'think' must be interpretable as the author of the utterance

a. *Jij denkt [dat ze eerlijk gezegd voor Rooney gaan].

you think that they honestly for Rooney go

b. Hij dacht [dat ze eerlijk gezegd voor Rooney zouden gaan].

he thought that they honestly for Rooney would go

'He honestly thought that they would go for Rooney.'

As the contrast between (1a) and (6a) shows, if the matrix subject is not interpretable as the author then adverb misplacement is ungrammatical. The requirement that the matrix subject be interpretable as the author does not imply, however, that it always has to be first person. In narrative style it can also be third person (6b), provided that the third person subject is the subject of consciousness. No such effects are found with the matrix verb *willen* 'want'. The choice of matrix subject is free with this matrix verb.

- (7) No restrictions on the matrix subject in the case of *willen* 'want'

Jij wil [dat ze per se pumps draagt].

you want that she definitely pumps wears

'You definitely want her to wear pumps.'

2.2 Analysis of embedded adverbs with a matrix interpretation

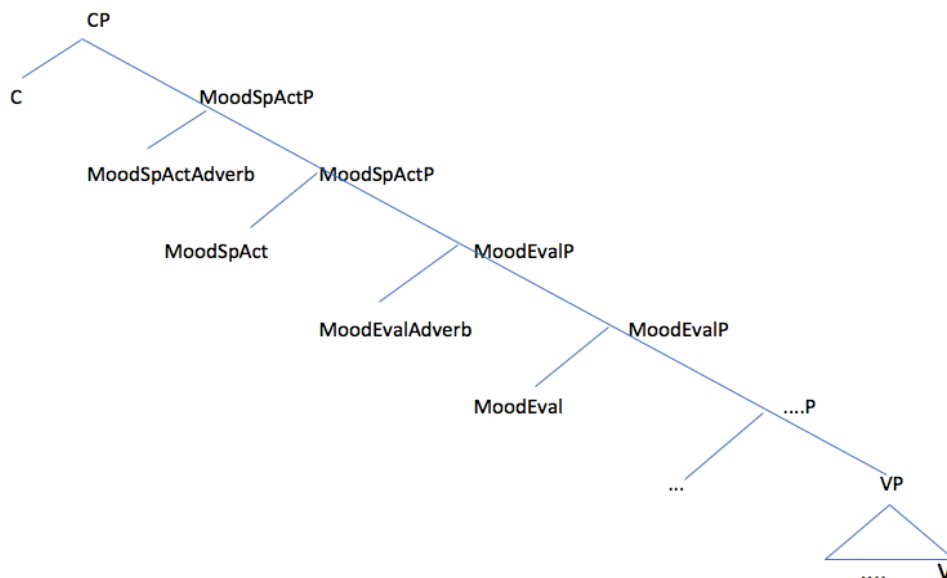
These syntactic conditions on embedded adverbs with a matrix interpretation raise the following questions:

- (i) Why is the phenomenon restricted to certain adverb classes?
- (ii) How does the adverb get to be interpreted in the matrix clause?

- (iii) Why is it restricted to certain bridge verbs?
- (iv) Why is there a requirement on the interpretation of the matrix subject in the case of matrix verb *denken* 'think'?

To answer the first question we have to look at the distribution of adverbs in finite complement clauses (henceforth CP) in Dutch. Let us assume that the Cinque hierarchy in (8) holds for Dutch, such that there is a clausal spine with functional head positions that each have a specific content and correspond to a specific related type of adverb that can occur in its specifier position. We will see in this and the following section that the phenomena under discussion provide evidence for this hierarchy. The unmarked position in Dutch for the adverbs in this hierarchy is in the middle field, between the Verb Second position (i.e. the position of the finite verb in main clauses and of the complementizer in finite embedded clauses) and the clause final verb position. The Cinque hierarchy should be read as a syntactic tree. This is illustrated in figure 1.

Figure 1: Cinque hierarchy as a tree structure



- (8) Relevant part of the Cinque hierarchy, from high (left) to low (right) in the clause⁵

⁵ The hierarchy proposed in Cinque (1999) contains more positions but these are not relevant here.

Functional head	Adverb (example)
Speaker-oriented domain	
Mood _{speech act}	eerlijk gezegd 'frankly'
Mood _{evaluative}	helaas 'unfortunately'
Mood _{evidential}	kennelijk 'allegedly'
Mood _{epistemic}	waarschijnlijk 'probably'
Referential Tense domain	
T(Past)	eens 'once'
T (Future)	dan 'then'
Epistemic modal domain	
Mood _{irrealis}	misschien 'perhaps'
Mod _{aleth necessity}	noodzakelijkerwijs 'necessarily'
Mod _{aleth possibility}	mogelijk 'possibly'
Root modal domain	
Mod _{volition}	per se 'definitely'
Mod _{obligation}	verplicht 'obligatorily'
Mod _{ability/permission}	gemakkelijk 'easily'
Aspectual domain	
Asp _{repetitiveI}	weer 'again'
Asp _{frequentativeI}	vaak 'often'
T(Anterior)	al 'already'
Asp _{terminative}	niet langer 'no longer'
Asp _{continuative}	nog steeds 'still'
Asp _{perfect}	altijd 'always'
Asp _{prospective}	bijna 'almost'
Asp _{completiveI}	helemaal 'completely'
vP domain	
NEG/AFF	niet/wel 'not/AFF'
Voice	goed 'well'
Asp _{celerativeII}	snel/vroeg 'quickly/early'
Asp _{repetitiveII}	weer 'again'
Asp _{frequentativeII}	vaak 'often'
Asp _{completiveII}	helemaal 'completely'

While each type of adverb in the Cinque hierarchy in (8) can occur in the CP-complement of the matrix verb *denken* 'think', in the CP-complement of *willen* 'want' adverb types higher

than volitional modal adverbs are excluded. This contrast is shown for speaker oriented and epistemic modal adverbs in (9). The observation holds both when there is only one of these adverb types in the embedded clause and when there are more.

- (9) a. Ik denk [dat ze eerlijk gezegd/helaas/misschien niet komen].
 I think that they honestly unfortunately perhaps not come
- b. *Ik wil [dat ze eerlijk gezegd/helaas/misschien niet komen].
 I think that they honestly unfortunately perhaps not come

It is difficult to show that the adverbs in the referential tense domain of the hierarchy cannot occur in the CP-complement of *willen* 'want', because of the many meanings of the adverbs *eens* 'once' and *dan/toen* 'then'. We can show, however, that the functional heads corresponding to these adverbs are impossible in the CP-complement of *willen*. For example, such complements do not allow for a referential past tense, cf. the contrast between (10a) and (10b). The past tense in (10c) is a kind of tense agreement, it is only morphological. This suggests that the head T(past) is absent.

- (10) a. Ik denk [dat ze toen werkten].
 I think that they then worked
 'I think that they were working by then.'
- b. *Ik wil [dat ze toen werkten].
 I want that they then worked
- c. Ik wilde [dat ze werkten].
 I wanted that they worked
 'I wanted them to work.'

Let us take these observations to mean that the CP-complement of *willen* 'want' is defective in that it lacks all the syntactic layers above the projection of ModVolition in the Cinque hierarchy in (8). Then *denken* 'think' and *willen* 'want' show strikingly similar behavior with respect to the types of embedded adverbs that must be interpreted in the matrix clause. Only the highest adverb in the CP-complement can and must be interpreted in the matrix clause.

In the CP-complement of *denken* ‘think’, speech act adverbs are the highest. In the CP-complement of *willen* ‘want’, volitional modal adverbs are the highest.

The next question is then why only the highest adverb in the embedded clause can and must be interpreted in the matrix clause in this construction. There are two logically possible analytical options, depicted in (11).⁶ In option 1 the adverb starts below the matrix verb and raises into the middle field of the matrix clause covertly (post-syntactically), at the level of Logical Form and hence without consequences for the overt linear order. In option 2 the matrix verb starts in the embedded clause and raises across the adverb overtly to a verbal position in the matrix clause.

(11) Option 1

Syntactic structure: [CP ... V_{matrix} [CP adverb ...]]

LF-movement: [CP ... adverb V_{matrix} [CP ~~adverb~~ ...]]

Option 2

Syntactic structure: [CP ... [CP adverb V_{matrix} [... V_{embedded}]]]

Syntactic movement [CP ... V_{matrix} [CP adverb ~~V_{matrix}~~ [... V_{embedded}]]]

The first option is ad hoc. There is no other known case of covert, non-quantificational adverb raising from a finite CP-complement. Moreover, the motivation for such an operation would be mysterious. It is also unclear why the adverb would be generated in a position where it cannot be interpreted first and then later moved to make it interpretable, in particular because there is a strong tendency for base positions of adverbs to be structurally adjacent to the constituents that they modify.

Option 2 does much better in these respects. In this option the “matrix” verb starts in a position right below and adjacent to the adverb. In this base configuration, the adverb takes scope over the matrix verb, yielding the correct interpretation. The “matrix” verb then moves overtly to a verbal position in the matrix clause. Verb movement is an operation that is widely

⁶ A third option would be that the adverb originates in the matrix clause and lowers into the embedded clause. There is no independent evidence for the existence of such lowering operations or for lowering more generally. It is also unclear what could be the trigger of adverb lowering. I will therefore not consider this option in this paper any further.

attested independently cross-linguistically. It is also well-known that verb movement does not affect the possibility for the verb to be interpreted in its base position. For example, the Dutch auxiliary *hoeven* ‘need’ is a negative polarity item that can only occur when there is a licensing negative element higher in the clause (12a,b). When *hoeven* undergoes Verb Second movement it occurs higher than and to the left of negation, but the sentence is still grammatical, which shows that *hoeven* is licensed in its base position.

- (12) a. *Jan hoeft te werken.
 Jan needs to work
 b. Niemand hoeft te werken.
 nobody needs to work
 c. Jan hoeft niet ~~hoeft~~ te werken.
 Jan needs not need to work
 ‘Jan does not need to work.

The analysis proposed here extends the analysis of restructuring verbs proposed in Cinque (2001) to finite CP-complements. According to that analysis restructuring verbs such as aspectual and modal auxiliaries are not lexical verbs but base generated in the functional heads of the hierarchy in (8), e.g. WANT in ModVolition and CAN in ModPossibility. Such auxiliaries constitute one clausal domain together with their infinitival complements, which explains, for example, why in Italian clitic arguments belonging to the main verb can precede the auxiliary, the well-known phenomenon of clitic climbing. A non-restructuring verb such as DECIDE is a main verb with its own V-position and its own clausal domain. Thus DECIDE with an infinitival complement involves two clausal domains and does not allow transparency phenomena such as, in Italian, clitic climbing.

Assuming that this is the correct analysis of embedded adverbs with a matrix interpretation, we arrive at the derivations in (13) and (14). I would like to claim that the transparency of CP-complements of bridge verbs, also for other movement operations, is the

result of the verb movement operation depicted in (13) and (14). This verb movement as it were creates the bridge that is necessary for other movement operations.⁷

(13) Base structure (embedded clause); *denken* ‘think’

[CP [MoodSpeechActP eerlijk gezegd [MoodSpAct denk [MoodEvalP.... V_{embedded}]]]]

(Partial) derived structure after V-movement into the matrix clause

[vP_{matrix} denk [CP [MoodSpeechActP eerlijk gezegd [MoodSpActP ~~denk~~ [MoodEval [.... V_{embedded}]]]]]]

(14) Base structure (embedded clause); *willen* ‘want’

[CP [ModVolP per se [ModVol wil [AspP [.... V_{embedded}]]]]]

(Partial) derived structure after V-movement into the matrix clause

[vP_{matrix} wil [CP [ModVolP per se [ModVol ~~wil~~ [AspP [.... V_{embedded}]]]]]]

Needless to say, this analysis raises a number of new questions. Due to space limitations I will not be able to discuss these extensively in this paper. I refer the reader to Barbiers (2016). I will briefly summarize the answers to these new questions here. The “matrix” verb generated in the embedded clause moves to matrix v position because it needs to be combined with its matrix external argument. The idea that verbs need to be decomposed into at least a little v and a lexical (root) projection has been commonly accepted since Hale and Keyser (1993). The C-position does not block movement of the verb to matrix v because complementizers such as *dat* ‘that’ are in SpecCP, not in C (cf. also Kayne 2010).⁸ The base position of the “matrix” verb in the embedded clause is higher than the part of the embedded clause where the agreement and argumental relations of the embedded verb are established and hence does not interfere with it.

This analysis also explains why embedded adverbs with matrix interpretation are not possible with factive verbs, as was shown in (3). There is no base position for matrix factive

⁷ The derivations in (13) and (14) are bottom-up, which means that the embedded CP is created first and then merged with the matrix v. This means that selectional relations work bottom-up as well. After they have been merged in the embedded clause the verbs *denken* ‘think’ and *willen* ‘want’ determine what can be merged next. In this way, it can be assured that the verb selects the right type of complementizer. It also means that there is no stage in which the matrix verb position is still empty and the CP-complement is already there.

⁸ Following Rizzi (1997) I take CP to be an abbreviation of an array of functional projections such as ForceP, TopP and FocP. If phrasal complementizer *dat* is in SpecTopP, it does not block extraction from the CP-complement, as this proceeds via embedded SpecForceP and/or SpecFocP.

verbs in embedded clauses. If there was, we would expect factive adverbs to be able to occur in the specifier of this base position, inside CP-complements of factive verbs, but they cannot. This is illustrated in (15a). Factive adverbs in Dutch can only occur in a position peripheral to a main clause, separated from it by comma intonation (15b).

(15) a. *Ik weet/denk [dat het **toegegeven** slecht weer zal zijn].

I know/think that it admittedly bad weather will be

#‘I know/think that it will admittedly be bad weather.’

b. Toegegeven, ik weet/denk dat het slecht weer zal zijn.⁹

admittedly, I know/think that it bad weather will be

‘Admittedly, I know/think that it will be bad weather.’

Finally, we have to answer the question as to why the subject of *denken* ‘think’ but not the subject of *willen* ‘want’ needs to be interpretable as the author of the utterance in order for an embedded adverb to be interpretable in the matrix clause. Speech act adverbs such as *eerlijk gezegd* ‘honestly’ modify the matrix speech act, not the matrix verb *denken* ‘think’ directly. It is not uncommon to assume that there is a hidden matrix predicate SAY that represents the matrix speech act. The speech act adverb would then modify this hidden SAY (cf. Ernst 2002 and references cited there). The analysis provided so far correctly explains how and why e.g. *eerlijk gezegd* ‘honestly’ takes scope over the matrix verb *denken* ‘think’, but how do we get the result that it modifies the matrix speech act SAY?

The key to the latter question is the complex structure of the adverb *eerlijk gezegd* ‘honestly’, which consists of the predicate adverb *eerlijk* ‘honest’ and the participle *gezegd* ‘said’. As we will see in section 4, predicate adverbs normally cannot be used as sentence adverbs. Adding a participle is one of the repair mechanisms. Adding *gezegd* ‘said’ in fact makes the hidden speech act predicate overt and because the “matrix” verb originates below *eerlijk gezegd* ‘honestly’ the right scope relations are already established at base structure. The only remaining requirement is now to make sure that the hidden agent of *gezegd* ‘said’,

⁹ Factive adverbs and verbs presuppose the truth of their complement. Example (i) shows that *toegegeven* ‘admittedly’ is a factive adverb.

(i) Toegegeven, Ik heb niet gebeld
admittedly, I have not called
‘It is true that I did not call, I admit that.’

let us assume PRO, is coindexed with the author of the utterance, that is the external argument of the hidden SAY predicate in the matrix clause. This requirement will be fulfilled if the external argument of *gezegd* is coindexed with the external argument of *denken* ‘think’ which in turn is coindexed with the external argument of hidden matrix SAY. Apparently, a matrix subject that is disjoint from the author of the utterance blocks this relation. None of these complications arises with the matrix verb *willen* ‘want’, as the volitional adverb modifies *willen* ‘want’, not a hidden speech act predicate.

To conclude this section, we have seen that embedded adverbs must be interpreted in the matrix clause if the matrix verb originates in a functional head position in the embedded clause and raises to the matrix v position. This option is restricted to certain bridge verbs. The bridge property is the result of this raising. The verb *denken* ‘think’ originates in the embedded MoodSpeechAct head, with a speech act adverb such as *eerlijk gezegd* ‘honestly’ in its specifier.¹⁰ The verb *willen* ‘want’ originates in the embedded ModVolition head with a volitional adverb such as *per se* ‘definitely’ in its specifier. In both cases, the adverb is the highest in the embedded clause, as CP-complements of *willen* ‘want’ are defective in that they lack the layers of the Cinque hierarchy above ModVolition.

3. Matrix adverbs that can be interpreted within the embedded clause

3.1 Adverb raising

We will now look at a construction that is the reverse of the previous one, adverbs that surface in the middle field of the matrix clause but can be interpreted in the embedded clause. The construction was first discussed in De Schepper et al (2014). It has in common with the previous construction that it is restricted to certain bridge verbs (*pace* De Schepper et al 2014; see example (18) below). We will see that adverbs can only be raised from the complements of bridge verbs into the middle field of the matrix clause if they are generated in or can reach a position just below the base position of the “matrix” verb in the embedded clause. In the case of *denken* ‘think’, this is the adverb position that is structurally right below the embedded functional head MoodSpeechAct. In the case of *willen* ‘want’ it is the position right below the

¹⁰ The verb *denken* ‘think’ has MoodEpistemic and MoodEvidential interpretations in addition to the MoodSpeechAct interpretation. Future research should show whether the verb can be generated in the functional positions corresponding to these interpretations and if so, what the syntactic consequences of this would be.

embedded head ModVolition (cf. 8). Consequently, the types of adverbs that can raise from the CP-complement of *denken* ‘think’ are distinct from the types of adverbs that can raise from the CP-complement of *willen* ‘want’.

3.2 Adverb raising from clausal complements of *denken* ‘think’

As (16) shows, evaluative adverbs such as *helaas* ‘unfortunately’ have their base position in the Cinque hierarchy (cf. 8) right below the base position of *denken* ‘think’, embedded MoodSpeechAct. They are able to raise into the matrix clause. This corresponds to the second interpretation in (17).

- (16) [VP_{matrix} denk [CP [MoodSpActP eerlijk gezegd [MoodSpAct ~~denk~~ [MoodEval helaas [... V_{embedded}]]]]]]
 think honestly think unfortunately

- (17) Ik denk **helaas** [dat Jan ~~helaas~~ niet wint].¹¹
 I think unfortunately that Jan unfortunately not wins.
 I. unfortunately > think: ‘Unfortunately, I think that Jan will not win.’
 II. think > unfortunately: ‘I think that Jan unfortunately will not win.’

Factive matrix verbs do not have this possibility.

- (18) Ik weet **helaas** [dat Jan niet wint].
 I know unfortunately that Jan not wins.
 I. ‘Unfortunately, I know that Jan will not win.’
 II. #I know that Jan unfortunately will not win.

Adverb types lower than MoodEvaluative do not raise into the matrix clause. This is illustrated in (19) for evidential adverbs and in (20) for frequentative adverbs.

¹¹ It is important to notice that raised adverbs in examples such as (17) are in the middle field of the matrix clause. They cannot be analyzed as sitting in the embedded SpecCP. This can be demonstrated by using a periphrastic tense in the main clause, as in (23). In such a case, the adverb can only occur in a position preceding the matrix main verb. If the adverb was in the embedded SpecCP it should occur between the matrix main verb and the finite complementizer *dat* ‘that’.

(19) Mood evidential

Ik denk **blijkbaar** [dat ze te laat was].

I think apparently that she too late was

I. 'I apparently think that she was too late.'

II. # 'I think that she was apparently too late.'

(20) Asp frequentative

Ik denk **vaak** [dat zij belt].

I think often that she calls

I. 'I often think that she calls.'

... but she does not call often.

II. # 'I think that she often calls.'

Impossible continuation:...but I do not often think that.

In interpretation I, *vaak* 'often' modifies the matrix verb and it is possible to continue with 'but she does not often call' without getting a contradiction. Reading II in which *vaak* 'often' modifies the embedded verb is not possible. If it were it should be possible to continue with 'but I do not often think that', but this gives rise to a contradiction.

De Schepper et al. (2014) identify a class of adverbs that are able to undergo what they call pragmatic raising and provide examples with *gewoon* 'just', *wel* 'affirmative particle', *inderdaad* 'indeed', *meer* 'more', *ook* 'also', *sowieso* 'in any case', *toch* 'still', *bovendien* 'moreover', *juist* 'indeed', *misschien* 'perhaps', *zeker* 'certainly'. An example is given in (21).

(21) Ik denk **inderdaad/toch/zeker** [dat Jan komt].

I think indeed/nevertheless/certainly that Jan comes

I. 'I indeed/nevertheless/certainly think that Jan will come.'

II. 'I think that Jan indeed/nevertheless/certainly will come.'

I agree with this observation, with the exception of *misschien* 'perhaps'. As for *misschien* 'perhaps', De Schepper et al give the example in (22).

(22) Ik denk misschien [dat ik er ook één voor mijn moeder ga kopen].

I think perhaps that I there also one for my mother go buy

It could be that they accept an embedded clause interpretation for the adverb in (22) because the sentence is syntactically ambiguous and can be analyzed as: Ik denk “Misschien dat ik er ook één voor mijn moeder ga kopen” (I think, maybe I will buy one for my mother). If we use a periphrastic tense then the ambiguity disappears and it becomes clear that an embedded reading is not available for *misschien* ‘perhaps’.

(23) Hij had misschien gedacht [dat hij er één voor zijn moeder zou kopen].

he had maybe thought that he there one for his mother would buy.

Only interpretation: ‘Maybe he had thought that he would buy one for his mother.’

If we exclude *misschien* ‘perhaps’, we can formulate the generalization that polarity adverbs may raise from the CP-complements of bridge verbs. Raising of the class of adverbs identified by De Schepper et al is then the positive counterpart of the well-known phenomenon of Neg-raising, with negation surfacing in the matrix clause while being interpreted in the embedded clause.

As with Neg-raising, it is not always easy to show that this involves adverb raising, as the sentence with the adverb in the matrix clause often implies the one with the adverb in the embedded clause and vice versa. Still it can be shown that polarity adverb raising is real. In (24), the affirmative particle *wel* occurs in the matrix clause despite the fact that it is not the matrix clause that is negated in the preceding context, but the embedded clause.

(24) Context: Ik denk dat ze **niet** zullen komen, ...

I think that they won’t come, ...

... maar ik denk **wel** [dat ze zullen bellen].

... but I think AFFIR that they will call

‘... but I think they certainly will call.’

We have seen in the first part of this section that only adverbs that are right below the MoodSpeechAct head can raise into the matrix clause. The polarity adverbs do not have a

clear position in the Cinque hierarchy in (8). As in the case of negation (cf. Cinque 1999: 120-126), their positions seems to be relatively flexible. It can be shown, however, that they are able to occur between MoodSpeechAct and MoodEvaluative, i.e., right below MoodSpeechAct.

(25) MoodSpeechAct > Polarity Adverb > MoodEvaluative

Ze hebben eerlijk gezegd **inderdaad/toch/ook** helaas niet gebeld.¹²

they have honestly indeed/nevertheless/also unfortunately not called

‘Honestly they indeed/nevertheless/also unfortunately did not call.’

3.3 Adverb raising from clausal complements of *willen* ‘want’

The position relevant to raising from the CP-complement of *willen* ‘want’ is right below the ModVolition head. It does not seem to be possible to identify this adverbial position with modal obligation adverbs, as might be expected from the Cinque hierarchy, as obligation adverbs cannot raise into the matrix clause.

(26) a. *Ik wil verplicht dat hij thuisblijft.

I want obligatorily that he stays at home

b. Ik wil dat hij verplicht thuis blijft.

I want that he obligatorily stays at home.

However, adverbs with a flexible distribution that can occur in a position between ModVolition and ModObligation, such as the polarity adverbs in (27), are able to raise into the matrix clause. This is illustrated for *ook* ‘also’ in (28).

(27) ModVolition > Positive Adverb > ModObligation

Hij moet per se **inderdaad/toch/ook** verplicht werken.

he must definitely indeed/nevertheless/also obligatorily work

‘He definitely indeed/nevertheless obligatorily has to work.’

¹² For the purposes of this paper I take focus particles such as *ook* to belong to the class of polarity adverbs.

(28) Context: Ze hebben een brief geschreven,...

They have written a letter,...

... maar ik wil ook [dat ze bellen].

but I want also that they call

'but I want them to call as well.'

Like polarity adverbs, the repetitive adverb *weer* 'again' may occur in between ModVolition and ModObligation.

(29) We moeten per se **weer** verplicht komen.

we must per se again obligatorily come

'We per se again have to come obligatorily.'

As expected, it may raise into the matrix clause as well while maintaining embedded scope (30). The continuations of the interpretations (between brackets) show that *weer* 'again' is able to modify *wil* 'want' without modifying *houdt* 'love' (first interpretation) and to modify *houdt* without modifying *wil* (second interpretation).¹³

(30) Ik wil **weer** [dat je van me houdt].

I want again that you of me hold

'Again, I want you to love me.' (although you never did before)

'I want you to love me again.' (although I never wanted that before)

Note that raising of the repetitive adverb into the matrix clause from the complement of matrix verb *denken* 'think' is impossible.

¹³ The example in (30) was found with a Google search which yields other acceptable examples of this type. I also find quite natural (not from a Google search):

(i) Ik wil weer [dat we vrienden zijn].

I want again that we friends are

'I want us to be friends again.'

(ii) Ik wil weer [dat je beter wordt].

I want again that you better become

'I want you to recover again.'

- (31) Ik denk **weer** [dat ik ziek ben].
 I think again that I sick am
 ‘I think again that I am sick.’
 ... but I have never been sick before
 #... but I never thought that before.

The reason is that *weer* ‘again’ cannot occur in a position right below MoodSpeechAct, the base position of *denken* ‘think’.

- (32) a. *Ik heb eerlijk gezegd weer helaas gebeld.
 I have honestly again unfortunately called
 b. Ik heb eerlijk gezegd helaas weer gebeld.
 I have honestly unfortunately again called.
 ‘Honestly, I have unfortunately called again.’

The generalization is thus quite robust that only adverbs that can be in a position right below the base position of the “matrix” verb inside the embedded clause can raise into the matrix clause.

3.4 Analysis

The question is now why this generalization would hold. Let us have a look at the relevant configurations. In order for the evaluative adverb in (33) and the repetitive adverb in (34) to reach the matrix clause they have to skip exactly one adverbial position within the matrix clause, the position of speech act adverbs (XP) and the position of volitional adverbs (YP) respectively.

- (33) [_{VPmatrix} denk [_{CP} [_{MoodSpActP} XP [_{MoodSpActP} ~~denk~~ [_{MoodEval} *helaas* [... V_{embedded}]]]]]]]

- (34) [_{VPmatrix} wil [_{CP} [_{ModVolP} YP [_{ModVol} ~~wil~~ [_{AspP} *weer* [... V_{embedded}]]]]]]]]]

If we assume that, again, it is the movement of the “matrix” verb that makes it possible for an adverb to skip another adverb position, then it immediately follows that adverbs lower than

helaas ‘unfortunately’ and *weer* ‘again’ cannot reach the matrix clause. As the base position of the “matrix” verb is too high for such lower adverbs, they would have to skip several adverb positions that are not connected with each other by verb movement.¹⁴

If this explanation is correct, it supports Cinque’s universal base hypothesis according to which all functional projections and corresponding adverb positions are always present, even when we do not see them.¹⁵ In configurations such as (33) and (34) the positions SpecMoodSpeechActP and SpecModVolitionP are not filled with adverbs, yet, movement of adverbs lower than *helaas* ‘unfortunately’ and *weer* ‘again’ are blocked.

The fact that no adverb can be raised from the CP-complement of a factive verb follows from this analysis without any further assumptions. Since the factive matrix verb does not originate in a functional position within the embedded clause but is a lexical verb in the matrix clause, the verb movement from embedded clause to matrix clause that is required for transparency does not take place.

I take the trigger of adverb raising to be focus. As shown in Barbiers (2002) focus raising into the middle field of the matrix clause is much more common in Dutch than is often thought.¹⁶ An adverb raised into the matrix clause must have focus, otherwise it will be interpreted as an adverb that originates in the matrix clause. The sentences in (35) and (36) illustrate this.

¹⁴ Technically, this analysis could be implemented in terms of Equidistance (Chomsky 1995). Movement of the “matrix” verbs from their embedded functional positions into the matrix clause makes all specifier positions on the movement path equidistant to the specifier of the highest adverb position below these functional positions, but not to adverbs lower than that position. This equidistance is necessary for the adverb to be able to skip intervening Spec positions on its way up.

¹⁵ In view of the conclusion reached in section 2.2 that CP-complements of *willen* ‘want’ lack the higher layers of the hierarchy, we have to adapt the universal base hypothesis in the following way. The projection of the hierarchy from bottom-to-top can stop at a certain point, but it is not possible to leave out one or more layers while projecting the layers higher than the omitted ones. This make it possible to maintain that intervening adverb positions will be syntactically active even when not filled.

¹⁶ An example is the sentence in (i). The PP [in de tuin] originates in the embedded clause and moves into the matrix middle field. The embedded clause is within brackets because many speakers prefer ellipsis of the remnant embedded clause here. Like polarity adverbs, the distribution of locative and other PPs is flexible so that they are able to occur in the launching position right below the MoodSpeechAct head in the embedded clause.

(i) Ik had in de TUIN gedacht (dat het feest in de tuin zou zijn).
I had in the garden thought that the party would be
‘I had thought that the party would be in the garden.’

(35) *Context*

Ze hebben een brief geschreven.

They have written a letter.

Maar ik denk OOK/*ook [dat ze zullen bellen].

But I think ALSO/also that they will call

‘But I think that they will also call.’

(36) *Context*

Ze zullen vast bellen

They will certainly call.

Ik DENK ook [dat ze zullen bellen].

I THINK also that they will call.

‘I do think that they will call.’

Not: ‘I think that they will call as well.’

To conclude this section a note is in order on the relation between Neg-raising and adverb raising. As is well-known, Neg-raising is restricted to bridge verbs as well, so the possibility should be considered that Neg-raising is just another instance of adverb raising. While I think that negation indeed can raise from the embedded clause into the matrix middle field, there is a number of syntactic differences between adverb raising and Neg-raising that are important.

First, although the distribution of negation, like that of polarity adverbs, seems to be somewhat flexible, it is not the case that negation can be in a position right below MoodSpeechAct (cf. 25 for a minimal contrast with 37b). As we will see in the next section, adverbs in Dutch can be divided in a class that precedes negation and a class that follows it. Evaluative adverbs such as *helaas* ‘unfortunately’ belong to the first class.

(37) a. Ik heb eerlijk gezegd helaas **niet** gebeld.

I have honestly unfortunately not called

‘Honestly, I unfortunately did not call.’

b. *Ik heb eerlijk gezegd **niet** helaas gebeld.

I have honestly not unfortunately called.

On the other hand, negation is possible in a position right below ModVolition (compare 38 with 27).

- (38) Hij wil per se **niet** verplicht werken.
he want definitely not obligatorily work
'He definitely does not want to work obligatorily.'

Secondly, although both *denken* 'think' and *willen* 'want' are bridge verbs that allow for transparency phenomena such as Wh-movement and adverb raising from their CP-complements, Neg-raising is possible with *denken* 'think' but not with *willen* 'want'. This to my knowledge novel observation is illustrated in (39). I have used the negative polarity item *hoeven* 'need' in these examples because it normally requires a clause mate negation as a licenser (see also the discussion in section 2.2)

- (39) a. Ik denk niet [dat hij hoeft te komen].
I think not that he needs to come
'I don't think he needs to come.'
b. *Ik wil niet [dat hij hoeft te komen].
I want not that he needs to come

A third difference between *denken* 'think' and *willen* 'want' is that *denken* 'think' allows (partial) Wh-doubling in colloquial Dutch, while *willen* 'want' does not.

- (40) a. Wie denk/wil je [dat ze ~~wie~~ uitnodigen]? wh-extraction
who think/want you that they invite
b. Wie denk/*wil je [wie ze ~~wie~~ uitnodigen]? wh-doubling
who think/want you [who they who invite]
c. Wat denk/*wil je [wie ze ~~wie~~ uitnodigen]? partial wh-doubling
what think/want you [who they who invite]
Meaning of a-c: 'Who do you think they will invite?'

These three differences can be explained if we assume that negative raising is possible if negation can escape from the specifier position of a projection high in the CP-domain of the embedded clause (i.e. higher than embedded MoodSpeechAct). Let us call this projection ForceP.¹⁷ The head Force determines whether the clause is (wh-) interrogative, imperative, negative etc. In (40b) there is a wh-word in embedded SpecForceP. The contrast between *denken* ‘think’ and *willen* ‘want’ in (40b) can now be reduced to the absence of a ForceP-layer in the CP-complement of *willen* ‘want’. Negative raising is then different from adverb raising in that negation needs SpecForceP to be able to escape from a CP-complement, while adverbs need to escape from a position right below the base position of the “matrix” verb in the embedded clause.

4. Extraposed adverbs and predicate adverbs that are too high

In the previous sections I discussed two types of adverb misplacement, embedded adverbs with obligatory matrix interpretations and matrix adverbs with optional embedded interpretations. We have seen that an extension of the analysis of adverbs and functional heads proposed in Cinque (1999, 2001) provides a simple and elegant analysis of these cases. We will now look at two other types of adverb misplacement, extraposed adverbs and predicate adverbs that occur in the position of sentence adverbs. We will see that the Cinque hierarchy must be cut into two halves, one below sentence negation and the other one above it. This part of the paper then supports the classical distinction between sentence adverbs and predicate adverbs.

4.1 Sentence adverbs and predicate adverbs

Uncontroversial sentence adverbs all occur higher than (to the left of) negation (41). Uncontroversial predicate adverbs all occur lower than (to the right of) negation (42).

(41) a. Ik heb het eerlijk gezegd/helaas/waarschijnlijk/misschien niet gehoord.

¹⁷ According to Rizzi (1997), the CP-domain (not depicted in (8)) consists of a number of layers including, a.o., ForceP, FocP, TopP, FinP. The assumption that CP-complements of *willen* ‘want’ lack ForceP does not imply that the other layers in the CP-domain are lacking. On the contrary, some of them must be present, e.g. a C-related head that can host the complementizer *dat* ‘that’ in its specifier position.

I have it honestly/unfortunately/probably/perhaps not heard

'I honestly/unfortunately/probably/perhaps did not hear it.'

- b. *Ik heb het niet eerlijk gezegd/helaas/waarschijnlijk/misschien gehoord.

I have it not honestly/unfortunately/probably/perhaps heard

- (42) a. Ik heb niet prettig/langzaam/hard gewerkt.¹⁸

I have not nicely/slowly/hard worked

'I have not worked nicely/slowly/hard.'

- b. *Ik heb prettig/langzaam/hard niet gewerkt.

I have nicely/slowly/hard not worked

The position relative to sentence negation correlates with the possibility of extraposition.

Sentence adverbs can follow the clause final verb position, predicate adverbs cannot (cf. De Haan 1976, Barbiers 2001).

- | | | | |
|------|----|-------------------------------|------------------|
| (43) | a. | Elsa heeft hard gewerkt. | predicate adverb |
| | | Elsa has hard worked | |
| | b. | *Elsa heeft gewerkt hard. | predicate adverb |
| | | Elsa has worked hard | |
| | c. | Elsa heeft misschien gewerkt. | sentence adverb |
| | | Elsa has perhaps worked | |
| | d. | Elsa heeft gewerkt misschien. | sentence adverb |
| | | Elsa has worked perhaps. | |

Adverbs that can both precede and follow negation, i.e. can both function as sentence adverbs and as predicate adverbs confirm this correlation. If such adverbs get extraposed, only the sentence adverb interpretation is possible. This is illustrated for the frequency adverb *vaak* 'often'.

- (44) a. Jan kan vaak niet werken. sentence adverb

¹⁸ These predicate adverbs are part of the vP domain in (8).

Jan can often not work

'It is often the case that Jan cannot work.'

- b. Jan kan niet vaak werken. predicate adverb

Jan can not often work

'It is not the case that Jan can work often'

- c. Jan kan niet werken, vaak.

Jan can not work often

I. 'It is often the case that Jan cannot work.' sentence adverb

II. # 'It is not the case that Jan can work often' *predicate adverb

A common objection that I get after presentations of this work is that the comma intonation in cases such as (44c) shows that the adverb is not integrated into the clausal structure. However, such an analysis does not explain why even with comma intonation extraposition of a predicate adverb is impossible.

Thus, predicate adverbs follow negation and cannot be extraposed, sentence adverbs precede negation and can be extraposed. Broekhuis and Corver (2016) provide some additional tests for distinguishing predicate adverbs from sentence adverbs.

(45) **I. *en doet dat* ADV 'and does that' test**

- a. Jan schrijft langzaam. predicate adverb

Jan writes slowly

Jan schrijft en doet dat langzaam

'Jan is writing and does that slowly.'

- b. Jan schrijft misschien. sentence adverb

Jan writes perhaps

*Jan schrijft en doet dat misschien.

II. Entailment

- c. Jan schrijft langzaam ==> Jan schrijft predicate adverb

- d. *Jan schrijft misschien !=> Jan schrijft sentence adverb

III. *Het is ADV zo dat ...* 'It is ADV the case that ...'

- e. *Het is langzaam zo dat Jan schrijft. predicate adverb

it is slowly so that Jan writes

- f. Het is misschien zo dat Jan schrijft. sentence adverb
it is perhaps the case that Jan is writing
- IV. Relative order sentence adverb > predicate adverb**
- g. Jan zal misschien langzaam schrijven.
Jan will perhaps slowly write
- h. *Jan zal langzaam misschien schrijven.
Jan will slowly perhaps write

The table in (46) summarizes these properties.

	sentence adverb	predicate adverb
... and does this ADV	-	+
Entailment	-	+
It is ADV the case that	+	-
Precedes Negation	+	-
Extraposition	+	-

A final property that needs to be mentioned in this description is the repair mechanism that is available for predicate adverbs that are used as sentence adverbs. The examples in (47b,e,h) show that predicate adverbs normally cannot be used as sentence adverbs. In many cases, the predicate adverb can be turned into a sentence adverb by adding *genoeg* 'enough'

(47c; cf. Barbiers 2001). As we have seen above, another way of rescuing an adverb is to add a participle (47f,i).

- | | | | |
|------|----|--|------------------|
| (47) | a. | Elsa heeft niet prettig gewerkt.
Elsa has not nicely worked | predicate adverb |
| | b. | *Elsa heeft prettig niet gewerkt.
Elsa has nicely not worked | |
| | c. | Elsa heeft prettig genoeg niet gewerkt.
Elsa has nicely enough not worked
'Nicely enough, Elsa did not work.' | |
| | d. | Elsa heeft gisteren eerlijk gesproken.
Elsa has yesterday honestly spoken | predicate adverb |
| | e. | *Elsa heeft eerlijk gisteren gesproken.
Elsa has honestly yesterday spoken | |
| | f. | Elsa heeft eerlijk gezegd gisteren gesproken.
Elsa has honestly said yesterday spoken
'Honestly, Elsa spoke yesterday.' | |
| | g. | Elsa heeft niet menselijk gehandeld.
Elsa has not humanly acted | predicate adverb |
| | h. | *Elsa heeft menselijk niet gehandeld.
Elsa has humanly not acted | |
| | i. | Elsa heeft menselijk gezien/gesproken niet gehandeld.
Elsa has humanly seen/spoken not acted
'Humanly spoken, Elsa has not acted.' | |

No such repair mechanism exists for sentence adverbs that are used as predicate adverbs. This invariably leads to ungrammaticality.

4.2 Analysis

The complementary distribution of sentence adverbs and predicate adverbs raises the following questions:

- (i) Why do sentence adverbs have to precede predicate adverbs?
- (ii) Why do sentence adverbs have to precede sentence negation while predicate adverbs have to follow it?
- (iii) Why can only sentence adverbs be extraposed?
- (iv) What are the syntactic properties of the repair construction in which *genoeg* 'enough' or a participle is added to a predicate adverb to make it function as a sentence adverb?

My answers to these questions are based on the analysis first provided in Barbiers (2001). The crucial idea is that predicate adverbs are adverbs that need an unsaturated complement, i.e. an (extended) projection of the verb with at least one open argument position, a predicate. This corresponds syntactically to a level of the clause at which not all of the arguments of the verb have been introduced in the derivation yet. Sentence adverbs on the other hand require a saturated complement, an argument. This corresponds to an (extended) projection of the verb at which all arguments of the verb have been introduced into the derivation and licensed. A possible candidate is T(Anterior). Semantically such a projection denotes a proposition, not a predicate. Following Ernst (2002), we assume that adverbs are lexically specified for the type of complement that they need: saturated (argument, i.e. proposition), unsaturated (predicate, i.e. event) or both.

The example in (48) illustrates the consequences of this analysis. The adverb *vreemd* 'strange' is a predicate adverb and it is merged with the verb *kijken* 'look' before it is saturated, i.e. before the external argument of *kijken* 'look' is merged. This explains the contrast in (48). The crucial step violating the selectional restrictions of *vreemd* 'strange' is the last step in (48b), where *vreemd* 'strange' is merged with a projection of the verb that has already been merged with the external argument and is hence saturated.

- (48) a. Er heeft iemand vreemd gekeken.
 there has someone strangely looked
 'Someone looked strangely.'
 (gekeken) ==> (vreemd (gekeken)) ==> (iemand (vreemd (gekeken)))
- b. *Er heeft vreemd iemand gekeken.
 there has strangely someone looked
 (gekeken) ==> (iemand (gekeken)) !=> (vreemd (iemand (gekeken)))

Sentence adverbs on the other hand can only be merged with a saturated (extended) projection of the verb, i.e. after the arguments of the verb have been introduced. This is very clear if we use an indefinite argument that cannot be scrambled, such as *wat* ‘something’ in (49). The first step in the derivation of (49a) violates the selection restriction imposed by *vermoedelijk* ‘presumably’ because the verbal predicate has not been saturated at that point. No such problem arises in (49b).

- (49) a. * Er is wat vermoedelijk gevallen.
 there is something presumably fallen
 (gevallen) $\neq \Rightarrow$ (vermoedelijk (gevallen)) \Rightarrow (wat (vermoedelijk (gevallen)))
- b. Er is vermoedelijk wat gevallen.¹⁹
 there is presumably something fallen
 (gevallen) \Rightarrow (wat (gevallen)) \Rightarrow (vermoedelijk (wat (gevallen)))

It follows immediately from this analysis that sentence adverbs in the middle field of the clause always precede predicate adverbs.

The position relative to sentence negation (and affirmation) requires a bit more discussion. Since sentence negation modifies a proposition it has to be merged at a level at which the verbal predicate has already been saturated. Sentence negation therefore always precedes predicate adverbs. As we have seen in (41), all sentence adverbs must precede sentence negation. This shows that sentence negation has a fixed position in the clause. If sentence negation was just another type of sentence adverb and the order of merge of different types of sentence adverbs such as MoodSpeechAct, MoodEvaluative and MoodEpistemic adverbs (cf. (8)) was free, we would expect negation to be able to precede such sentence adverbs. Thus, the relative order of sentence adverbs and sentence negation

¹⁹ The sentence in (i) is not a counterexample to these claims. It looks at first sight as if in this sentence the adverb is attached to VP before the argument [Jan] is attached. However, this is an unaccusative construction. The standard analysis of unaccusative constructions in generative grammar is that the subject originates as a complement of V inside the VP and below the adverb (as in *dat er vermoedelijk iemand is gevallen*. lit. that there presumably someone is fallen), and it is moved to a higher position for case reasons.

(i) Jan is vermoedelijk gevallen.
 Jan is presumably fallen
 ‘Presumably Jan has fallen.’

supports the idea that negation has its own fixed position in the clause below sentence adverbs. The observation discussed above that sentence negation cannot be extraposed also supports the idea that sentence negation is not a sentence adverb.²⁰

This analysis also answers the question why sentence adverbs can be extraposed while predicate adverbs cannot, if it is combined with an analysis of adverb extraposition as intraposition of TP, as proposed in Barbiers (1995) and illustrated in (50).

(50) [...[[AdvP [TP]]] ==> [... [[TP] [AdvP [~~TP~~]]]

Rightward movement, right adjunction and ellipsis analyses of extraposition cannot explain this asymmetry between sentence adverbs and predicate adverbs. In an intraposition analysis the adverb is analyzed as a predicate of (a projection of) the verb and the latter as an argument of the adverb, following Parsons (1990). If we assume that only saturated projections of the verb, e.g. TP, can be arguments and intrapose then the extraposition asymmetry follows.²¹

Independent evidence for this analysis comes from a similar asymmetry in the distribution of adverbs inside DPs. Attributive adjuncts that attach to N or NP cannot be extraposed inside the DP, adjuncts that merge with full DPs can. This is strongly parallel to the clausal level, since N/NP is arguably unsaturated while DP is saturated (by the presence of D). This asymmetry is illustrated in (51) and (52).

- (51) a. [DP de vreemde [NP burgemeester]]
the strange mayor
b. *de burgemeester vreemd(e)
c. *vreemd de burgemeester

- (52) a. [Vermoedelijk [ook [DP de burgemeester]]] komt naar het feest.²²
presumably also the mayor comes to the party

²⁰ More precisely, extraposition of a sentence adverb does not have an effect on the interpretation of the sentence, extraposition of *niet* 'not' turns the sentence into a tag question. I have no explanation for this fact.

²¹ According to this analysis sentence adverbs in the middle field precede subjects in SpecTP. This is correct for indefinite subjects. Definite subjects precede sentence adverbs, however. I assume that this is because they move to the Spec of a high functional projection (e.g. TopP) above MoodSpeechActP.

²² The two sentences in (52) are less acceptable when *ook* 'also' is absent, for reasons that I do not understand. It is also unclear why *ook* itself cannot be extraposed when attached to DP.

- b. [[Ook [DP de burgemeester]] vermoedelijk] komt naar het feest.
 also the mayor presumably comes to the party

The final question is about the syntactic analysis of adverb repair with *genoeg* ‘enough’ or a participle. We know that predicate adverbs cannot be used as sentence adverbs because predicate adverbs require an unsaturated complement while sentence adverbs require a saturated complement. The effect of adding *genoeg* ‘enough’ or a participle should then be that the adverb+*genoeg* and adverb+participle combinations select a saturated complement. It is clear that both *genoeg* and participles such as *gezegd* ‘said’ and *gezien* ‘seen’ can be predicates of a proposition, a saturated constituent, independently. This is illustrated in (53) for clausal arguments.

- (53) a. [Dat zij dit weet] is genoeg.
 that she this knows is enough
 ‘It is enough that she knows this.’
 b. [Dat zij dit weet] is gezegd/gezien.
 that she knows this is said/seen
 ‘It has been said/seen that she knows this.’

I take this to mean that *genoeg* and the participle are the real sentence “adverbs” and that they are merged somewhere in the domain between C and Negation, *gezegd* possibly in SpecMoodSpeechAct and *genoeg* possibly in SpecMoodEvaluative. Both *genoeg* ‘enough’ and *gezegd* ‘said’ directly modify a part of the clause that denotes a proposition, possibly TP. The predicate adverbs themselves are not attached at the clausal level, but to *genoeg* and the participle respectively.²³ They are part of the projection of *genoeg* or the participle.²⁴ This is

²³ Cf. the analysis of *eerlijk gezegd* ‘honestly’ in section 2.2.

²⁴ Barbiers (2001) provides arguments for an analysis in which the adverb starts out as a complement of *genoeg* ‘enough’ and then undergoes head movement, left-adjoining to the head *genoeg* ‘enough’, such that *genoeg* functions as a suffix in this construction. This explains why the adverb and *genoeg* have to be strictly adjacent while this is not the case when *genoeg* modifies a noun (cf. *boeken over schaatsen genoeg* lit. books on skating enough ‘enough books on skating’ and why *genoeg* ‘enough’ cannot have its normal for-PP argument.

- (i) a. Dit is genoeg voor Jan
 this is enough for Jan
 b. Ze heeft gek genoeg (*voor Jan) niet gebeld.

exactly what is needed, as predicate adverbs cannot modify a proposition directly but they can modify *genoeg* or a participle. Since adverb+*genoeg* and adverb+participle modify a proposition we expect it to be possible to extrapose them by intraposing the TP that denotes a proposition, and this turns out to be correct.

- (54) a. Ik had het niet gedacht eerlijk gezegd.
 I had it not though honestly
 ‘Honestly I had not though that.’
 b. Zij heeft niet gebeld gek genoeg.
 she has not called strangely enough
 ‘Strangely enough she did not call.’

5. Conclusion

The following picture of Dutch adverbial syntax arises on the basis of the discussion in this paper. As Broekhuis and Corver (2016) have shown, the relative order of adverb types in Dutch largely obeys the supposedly universal hierarchy of adverb types proposed in Cinque (1999). According to the strongest version of Cinque’s hypothesis, the various adverb positions and corresponding heads are present in the clausal structure even when not filled with lexical material. Evidence for this comes from adverb raising in Dutch, which is only possible for adverb types that only have to skip the highest adverb position in the clause.

Which adverb position this is depends on the matrix verb. The clausal complement of *denken* ‘think’ is complete and raising adverbs must skip the position for speech act adverbs, SpecMoodSpeechActP. The clausal complement of *willen* ‘want’ is missing all layers above ModVolition, hence adverb types that only need to skip SpecModVolitionP can raise into the matrix clause. In both cases, skipping the highest adverb position in the clause is made possible by prior movement of the “matrix” verb from a functional head position in the embedded clause to the v position of the matrix clause. This functional head position is MoodSpeechAct in the case of *denken* ‘think’ and ModVolition in the case of *willen* ‘want’.

Movement of these verbs from their base positions crosses SpecMoodSpeechActP and SpecModVolitionP. When these positions contain an adverb, the base positions of the

she has strangely enough (for Jan) not called.
 ‘Strangely enough she has not called.’

“matrix” verbs are lower than the crossed adverbs. Since the scope of these verbs is arguably computed in their base positions, this gives rise to a construction in which embedded adverbs have matrix scope obligatorily. Again, this is only possible for adverb types that are the highest in the complement clause, as other adverb types are lower than the base positions of the “matrix” verbs and will therefore never be crossed.

While adverb raising and embedded adverbs with a matrix interpretation provide supporting evidence for the Cinque hierarchy, it is clear that the Cinque hierarchy is not sufficient to explain the full syntactic distribution of adverbs in Dutch. In particular, this hierarchy has nothing to say about the complementary distribution of sentence adverbs and predicate adverbs, more specifically the fact that only sentence adverbs can be extraposed and that predicate adverbs need an additional predicate to be able to occur as sentence adverbs.

To explain this we have to assume that there is a level in the Cinque hierarchy at which the main verb of the clause has been saturated and denotes a proposition, e.g. TP. Sentence adverbs occur in positions higher than this level, while predicate adverbs occur lower than this level. This explains why sentence adverbs precede predicate adverbs. It also explains why sentence negation precedes predicate adverbs. The fact that sentence negation always follows sentence adverbs shows that sentence negation has a designated position between sentence adverbs and predicate adverbs.

Under the assumption that adverb extraposition involves intraposition of a saturated extended projection of V, the extraposition asymmetry between sentence adverbs and predicate adverbs follows immediately. The impossibility for predicate adverbs to be used as sentence adverbs also follows, as predicate adverbs are lexically specified as requiring an unsaturated complement. Predicate adverbs can be used as sentence adverbs indirectly, i.e. if they are attached to predicates such as *genoeg* ‘enough’ or *gezegd* ‘said’ that are able to modify propositions themselves. This is what I have called adverb repair here.

Other important results of this paper are the identification of a positive counterpart of Neg-raising, and another defectivity of clausal complements of *willen* ‘want’. Not only do they lack the layers above ModVolition, they also lack a ForceP layer. This explains why such complements do not allow (partial) Wh-doubling and Neg-raising.

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