

On the Adverbial Movement in Danish

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1. Introduction

It has long been considered that the immediately higher projection than VP is IP within the generative literature. Pollock (1989) notices, however, that the distribution of the verb in relation with the sentential negation and the adverb is different among languages and claims that there is a functional projection between IP and VP. The crucial assumption in his analysis is that the positions of the negation and the adverbs are fixed. Cinque (1999) develops his idea and proposes that the adverbs occupy the specifiers of distinct functional projections. His proposal is challenged by some researchers, including Bobaljik (1999), Wilson and Saygin (2001), and among many others, because there are some cases that do not fall under the hierarchical structure he proposes. If the adverbs can undergo movement, Pollock's and Cinque's analyses might need to be reconsidered.

Observing the placement of adverbs in Danish is particularly interesting in this context. The adverb can appear in the sentence-initial position instead of the subject, as shown below:¹

- (1) a. Børnene har set denne film. b. Måske havde Peter set denne film.
the-children have seen this film *maybe had Peter seen this film*
'The children have seen this film.' 'Maybe Peter had seen this film.'

It also precedes the subject instead of the finite verb in *yes-no* questions, as illustrated below:²

- (2) a. Er Peter mon nu også gået b. Mon nu også Peter er gået
is Peter perhaps now also gone *perhaps now also Peter is gone*
'Has Peter (perhaps) now also gone?'

The same can be observed in embedded clauses in some cases. This paper investigates these phenomena and provides counterevidence to the argument that adverbs are generated in Spec of the distinct projections. Then, I will show that adverbs can undergo movement as a unit.

This paper is organized as follows. Section 2 introduces the peculiarity in the placement of the finite verb in Danish. It reveals then, that the adverb in the case such as (1b) undergoes phrasal movement to Spec CP. Section 3 examines how the adverb appears in the sentence-initial position in the pattern exemplified in (2b). The basic insight from the observation in this section is that the adverb can appear in C. Section 4 illustrates more detailed analysis of this case and shows that the adverbs undergo head movement. Section 5 concludes the paper.

¹ The example in (1a) is cited from Johnson (2004: 121) and the one in (1b) is adopted from Vikner (2010: 6).

² The examples whose references are not mentioned in the following discussion are all provided by Lisa Travis in the lecture of Syntax II in fall 2006 at McGill University.

2. Verb Second and Adverbial Movement to Spec CP

Danish and German are well-known as the instances of “Verb Second” languages. The position of the finite verb in German, for instance, depends on whether the clause is embedded or not. The finite verb in the embedded clause comes at the end of the sentence, as shown in (3).

- (3) Er sagt, daß die Kinder diesen Film gesehen haben.

He says that the children this film seen have

‘He says that the children have seen this film.’

(Vikner 1995: 66)

This fact indicates that VPs and TPs are head-final in German. The inflected verb in independent clauses, on the other hand, immediately follows the subject, as shown in (4a). The verb in embedded clauses shows the same behavior iff a complementizer is missing, as exemplified in (4b).

- (4) a. Die Kinder haben diesen Film gesehen.

(ibid.: 41)

The children have this film seen

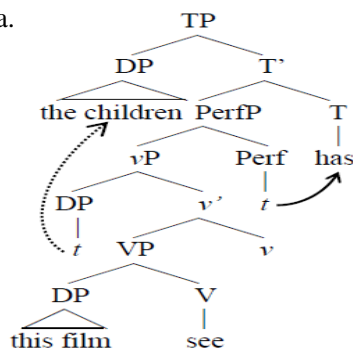
‘The children have seen this film.’

- b. Er sagt, die Kinder haben diesen Film gesehen.

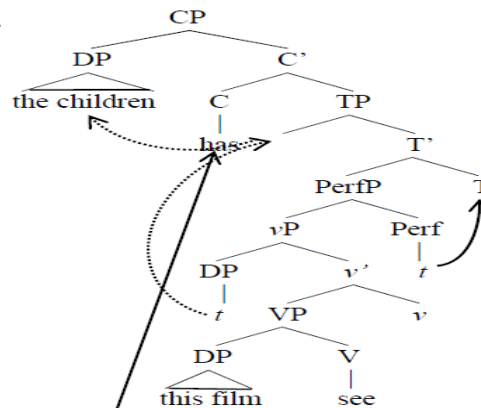
(ibid.: 66)

In these cases, the inflected verb appears in the second position in the clause and hence called “Verb Second” (hereafter, V2). Considering the fact that an overt complementizer blocks V2, it is reasonable to conclude that the verb moves to C and the subject raises to Spec CP when C is not preoccupied. The structures of (3) and (4) are given below, for illustration:

- (5) a.



- b.



The element which undergoes movement to Spec CP is not limited to the subject. In (6a), the object appears in the sentence-initial position and the subject follows the verb.

- (6) Diesen Film haben die Kinder gesehen.

this film have the children seen

‘The children have seen this film.’

(ibid.: 42)

In this case, the subject cannot precede the verb. This fact indicates that the object moves to Spec CP over the verb in C instead of the subject.

Let us then observe the verb placement in Danish. As the contrast in (7) shows, Danish is like German in allowing the object to precede the finite verb in independent clauses.

- (7) a. Børnene har set denne film. b. Denne film har børnene set.
the-children have seen this film this film have the-children seen
 ‘The children have seen this film.’ (Johnson 2004: 121)

But, as (8) shows, these traits are not shared by dependent clauses, where, instead, the subject must precede the finite verb.

- (8) a. Jeg ved ikke om børnene har set denne film.
I know not if the-children have seen this film (Vikner 1995: 50)
 b. *Jeg ved ikke om denne film har børnene set.
I know not if this film have the-children seen
 ‘I don’t know if the children have seen this film.’

In short, the same sensitivity to embedding is found in the placement of the finite verb in Danish. This fact indicates that Danish shares the same property with German in the sense that the finite verb moves to C in independent clauses while it does not in dependent clauses. The structure of (7a) is roughly depicted as follows:

- (9) [_{CP} the children have [_{TP} ~~the children~~ not have seen this film]]

However, there is a difference between these two languages. Recall that in German, the verb moves to C in embedded clauses only in those contexts where a complementizer does not fill that C. But in Danish, V2 is possible even if a complementizer stays in this position, as shown below:³

- (10) a. Vi ved at Bo har læst denne bog. b. Vi ved at denne bog har Bo læst.
we know that Bo has read this book we know that this book has Bo read
 ‘We know that Bo has read this book.’ (ibid.: 67)

To explain this fact, Vikner (1995) proposes that a CP shell can be embedded within a regular CP in Danish and argues that it provides the C into which the verb moves in embedded clauses.

- (11) ... [_{CP} that [_{CP} this book has [_{TP} Bo ~~has~~ read ~~this book~~]]]

It is important to note that embedded V2 is not allowed when *at* ‘that’ is missing. Considering this fact together with ungrammaticality of (8b), C filled by *at* is only able to have a CP shell.

Based on this background, let us now consider the case in (1b), repeated here as (12a), where an adverb comes to the sentence-initial position. The other example is given in (12b).⁴

- (12) a. Måske havde Peter set denne film. b. I går så børnene denne film.
maybe had Peter seen this film yesterday saw the-children this film

In both examples, the finite verb appears in the second position and the subject follows it. This arrangement is the same as the one observed in the case where the object moves to Spec CP instead

³ Negation *ikke* ‘not’ is omitted in these examples for simplicity.

⁴ This example is cited from Vikner (1995: 42). The word which means ‘yesterday’ is treated as an adverb in some languages, including English. However, *i går* might be PP because *i* corresponds to *in* in English. This does not affect the analysis presented here and just shows that any phrase, including AdvP and PP, can be the target of movement to Spec CP in Danish.

of the subject. Therefore, it is plausible to consider that the landing site of adverbial movement in these cases is the same as the one of the movement of DP, namely Spec CP. This analysis is supported by the contrast between (13) and (14).

- (13) a. De spurgte om Peter måske havde set filmen
they asked if Peter maybe had seen the-film
 b. *De spurgte om måske havde Peter set filmen
they asked if maybe had Peter seen the-film
 ‘They asked if Peter maybe had seen the film.’
- (14) a. Jeg er bange for at Peter måske har set den film
I am afraid for that Peter maybe has seen that film
 b. Jeg er bange for at måske har Peter set den film
I am afraid for that maybe has Peter seen this film
 ‘I am afraid that Peter maybe has seen that film.’

Specifically, an adverb can precede the verb in *that*-clauses, where CP recursion is allowed, but not in *if*-clauses. Notice that the verb does not necessarily come to the second in *that*-clauses. This fact indicates that CP recursion is optional.⁵ If CP recursion does not occur, then the verb does not raise to T, resulting in (15a). If CP recursion is executed and *måske* moves to Spec CP, then the verb moves to C via T, yielding (15b).

- (15) a. [_{CP} that [_{TP} Peter T [_{AdvP} maybe [_{VP} Peter has seen that film]]]]
 b. [_{CP} that [_{CP} maybe has [_{TP} Peter has [_{AdvP} maybe [_{VP} Peter has seen that film]]]]]

In sum, the adverb moves to Spec CP only in the context where V2 occurs. Cinque’s argument still might be maintained if we assume that the adverb can undergo phrasal movement from Spec of its functional projection to Spec CP. The following section observes more problematic case where the adverb seems to undergo head movement.

3. Questions and Adverbial Movement to C

We have seen that the adverb cannot come to the initial position in *if*-clauses because CP recursion is prohibited. Surprisingly, in the case where V2 does not occur, an adverb can come to the initial position in *if*-clauses whereas it cannot in *that*-clauses, as shown in (16).

⁵ It further suggests that V does not move to T independently though it may stop by T on its way of movement to C. The contrast between (i) and (ii) suggests the same point.

- i) a. Hun sadge at vi skulle ikke købe denne bog.
She said that we should not buy this book
 b. Hun sadge at vi ikke skulle købe denne bog.
She said that we not should buy this book. (Vikner 1995: 85)
- ii) a. *Jeg spurgte hvorfor Peter havde ikke læst den.
I asked why Peter had not read it
 b. Jeg spurgte hvorfor Peter ikke havde læst den.
I asked why Peter not had read it (ibid.: 145)

- (16) a. Maria spurgte om måske Peter også var gået
Maria asked if maybe Peter also had left
 b. *Jeg er bange for at måske Peter har se den film
I am afraid for that maybe Peter has seen that film

The immediate explanation for this contrast is to assume that the subject in *that*-clauses is required to move to the higher position than the adverb, namely, Spec TP, whereas this requirement does not hold of the one in *if*-clauses.

- (17) a. [CP if [TP T [AdvP maybe [vP Peter also had left]]]]
 b. [CP that [TP Peter T [AdvP maybe [vP ~~Peter~~ also had left]]]]

To verify this assumption, let us observe the positional relation between the subject and negative elements. The subject in *if*-clauses can either precede or follow *ikke* ‘not’ but the one in *that*-clauses is not allowed to come after it.

- (18) a. Maria spurgte om Peter nu ikke også vaar gået
Maria asked if Peter now not also was gone
 b. Maria spurgte om nu ikke også Peter vaar gået
Maria asked if now not also Peter was gone
 ‘Maria asked if Peter now hadn’t also gone.’
 (19) a. Maria beklagede sig over at Peter nu ikke også var gået
Maria complained REFL over that Peter now not also was gone
 b. *Maria beklagede sig over at nu ikke også Peter var gået
Maria complained REFL over that now not also Peter was gone
 ‘Mary complained that Peter now hadn’t also gone.’

Given Pollock’s (1989) analysis of negation, this contrast seems to suggest that movement of the subject to Spec TP is optional in *if*-clause while it is obligatory in *that*-clause.⁶ Looking at the pattern of *aldrig* ‘never’, we notice, however, that the current analysis cannot be maintained. As shown in (20b), this element cannot precede the subject even in *if*-clauses.

- (20) a. Maria spurgte om Peter aldrig havde set den film før
Maria asked if Peter never had seen that film before
 b. *Maria spurgte om aldrig Peter havde set den film før
Maria asked if never Peter had seen that film before
 ‘Maria asked if Peter had never seen that film before.’

This fact indicates that the subject in *if*-clause is required to move to the higher position than NegP, namely Spec TP. Therefore, we need to look elsewhere to explain why the adverb can precede the subject and come to the initial position in *if*-clauses.

⁶ He proposes that negation projects a phrase, NegP, between TP and AgrP. Since AgrP is abandoned in the current framework, I assume that NegP is generated between TP and vP.

Let us now turn to the placement of the adverb in dependent clauses. As we have seen in (1b), repeated here as (21a), the verb comes to the second in the case where the adverb appears in the sentence-initial position. In contrast, it is the subject that immediately follows the adverb in (21b) but the sentence is still grammatical.⁷

- (21) a. Måske havde Peter set denne film. b. Mon Peter så Mette?
maybe had Peter seen this film *perhaps Peter saw Mette*
 ‘Maybe Peter had seen this film.’ ‘Did Peter perhaps see Mette?’

A difference between these examples is that (21a) is declarative while (21b) is interpreted as an *yes-no* question. It is important to notice that the arrangement of the adverb, the subject, and the verb in (21b) is the same as the one in *if*-clauses observed above. For this reason, let us now study *yes-no* questions in this language.

The *yes-no* question in Danish is, in general, generated by moving the finite verb to C to check the +Q-feature on C. In this case, the subject does not move to Spec CP but stays in Spec TP. The relevant examples and their structures are given below.⁸

- (22) a. Peter drikker urete. b. Drikker Peter urete?
Peter drinks herbal tea *Drinks Peter herbal tea*
 ‘Peter drinks herbal tea.’ ‘Does Peter drink herbal tea?’

- (23) a. [_{CP} Peter drikker [_{TP} Peter T [_{VP} Peter drikker urete]]]
 b. [_{CP} drikker [_{TP} Peter T [_{VP} Peter drikker urete]]]

There is another way to make *yes-no* questions in Danish. When the sentence includes the adverb *mon* ‘perhaps,’ either the verb or *mon* can come to the initial position, as illustrated below:⁹

- (24) a. Kommer Peter mon? b. Mon Peter kommer?
comes Peter perhaps *perhaps Peter comes*
 ‘Is Peter coming (do you think)?’

Given the parallelism between (24a) and (24b) in interpretation, *mon* in (24b) moves to C to check +Q-feature as well. That is, +Q-feature on C can drive adverbial movement to C in Danish. Inevitably, -Q-feature on C does not drive this movement. Consequently, the contrast between *if*-clauses and *that*-clauses in (16a-b) can be reduced to the difference in value of the Q-feature on C. Specifically, the +Q-feature on C in *if*-clause can drive movement of the adverb whereas the -Q-feature on C in *that*-clause cannot, as schematized in (25).¹⁰

⁷ The example in (21b) is taken from Erteschik-Shir (2009: 13).

⁸ These examples are adopted from Vikner (2010: 5) but *aldrig* ‘never’ is omitted for simplicity.

⁹ The example in (24a) is taken from Erteschik-Shir (2009: 3) and the one in (24b) is cited from her (*ibid.*: 19).

¹⁰ Additionally, the adverb *måske* can follow the verb in *that*-clauses, as shown below:

- i) Hun siger at Peter kommer måske snart hjem.
She says that Peter comes maybe soon home
 ‘She says that Peter maybe comes home soon.’

- (25) a. [CP if[+Q] maybe [TP Peter T maybe also had left]]
 b. [CP that[-Q] [TP Peter T maybe also had left]]

Under the current analysis, all the adverbs *nu*, *ikke*, and *også* move to C in (26b).

- (26) a. Maria spurgte om Peter nu ikke også vaar gået
Maria asked if Peter now not also was gone
 b. Maria spurgte om nu ikke også Peter vaar gået
Maria asked if now not also Peter was gone

It is still unclear whether these adverbs move collectively or independently. The following examples appear to show that not all the adverbs need to move to C and illustrate that the number of raised elements is not limited.

- (27) a. Er Peter mon nu også gået b. Mon Peter nu også er gået
is Peter perhaps now also gone *perhaps Peter now also is gone*
 c. Mon nu Peter også er gået d. Mon nu også Peter er gået
perhaps now Peter also is gone *perhaps now also Peter is gone*
 ‘Has Peter perhaps really also left?’

It seems, however, that movement of *mon* to C blocks V-to-C movement, as ungrammaticality of the following examples show:

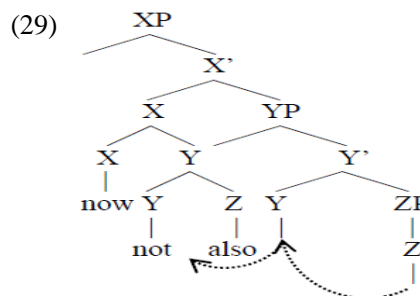
- (28) a. *Kommer mon Peter?
comes perhaps Peter
 b. *Mon kommer Peter?
perhaps comes Peter

(Erteschik-Shir 2009: 20)

In other words, it is the only one element that can undergo movement to C. Accordingly, the adverbs which precede the subject in the examples seen above are considered to constitute one element. Based on this observation, I argue that adverbs can come together and move collectively as a unit. The following section provides more detailed analysis on the issue how the adverbs undergo movement in a group.

4. Movement and Optionality in Labeling

As we have seen in the previous section, the landing site for adverbial movement in *yes-no* questions is C. This fact indicates that the adverbs undergo head movement. The fact that the directionality of the arrangement of the adverbs are kept after movement indicates that head movement in this language is executed in the manner of



This arrangement results from the combination of movement of the subject in Spec CP and V-to-C movement into the CP shell, as illustrated below:

- ii) [CP that [CP Peter comes [TP Peter T maybe comes soon home]]]

right-adjunction, as exemplified in (29). The examples in (27c) and (27d), repeated here as (30a) and (30b), show that this head movement is optional.

- (30) a. Mon nu Peter også er gået b. Mon nu også Peter er gået
perhaps now Peter also is gone *perhaps now also Peter is gone*

If Z and Y undergo movement to X in (29), all the adverbs, namely *nu*, *ikke*, and *også* in this case, move to C. If Z does not move to Y but Y moves to Z, only *nu* and *ikke* raise to C. Given some version of the Head Movement Constraint, it is predicted that Z cannot move to X directly. The contrast in (31) demonstrates that this prediction is born out.

- (31) a. Mon nu Peter også er gået b. *Mon også Peter nu er gået
perhaps now Peter also is gone *perhaps also Peter now is gone*
 ‘Has Peter perhaps really also left?’

Let us now return to the contrast between *ikke* ‘not’ and *aldrig* ‘never’ that we have seen in the previous section. Other simpler examples are given below:¹¹

- (32) a. Mon han ikke kommer? b. Mon ikke det er for sent?
Perhaps he not comes? *Perhaps not it is too late*
 ‘Will he not come to the party?’ ‘Isn’t it perhaps too late?’
- (33) a. Mon Peter aldrig spiser østers? b. *Mon aldrig Peter spiser østers?
perhaps Peter never eats oysters *perhaps never Peter eats oysters*
 ‘Does Peter never eat oysters?’

Specifically, *ikke* can undergo head movement while *aldrig* cannot. On the other hand, *ikke* cannot move to Spec CP whereas *aldrig* can, as the contrast below shows:

- (34) a. *Ikke har jeg læst den dumme bog. b. Aldrig har jeg læst noget så dumt.
Not have I read this stupid book *Never have I read that stupid book*

(Christensen 2003: 2)

Suppose that *aldrig* is generated in the Spec of some projection, Spec XP in (29), for instance. Then, the contrast between *ikke* and *aldrig* is attributed to the difference in whether the relevant element is in the head or in the specifier. Cinque’s argument that all the adverbs lie in some distinct functional projections is, on the other hand, hard to explain the contrast between these. Even if he assumes that *ikke* is exceptionally counted as a head, he still might face a problem in explaining the fact that some adverbs can move as a unit. Furthermore, he would have difficulty in explaining why adverbs can move to a head. In contrast, the analysis presented here overcomes these problems, hence is more plausible.

However, we still need to consider why adverbs cannot move to C at the same time with the verb, as we have seen in (28). The relevant examples are repeated below:

¹¹ The example in (32a) is cited from Bredsdorf (1984: 166) and the one in (32b) is taken from Ørsnes (2009: 258).

Instead, it has revealed that some adverbs are dominated by the same projections and therefore, they can undergo head movement as a unit. It has also become clear that Pollock's assumption that the position of the adverb is fixed cannot be maintained. Accordingly, the crosslinguistic difference in the placement of the verb addressed by him might not come from the difference in whether V-to-T movement occurs or not in the relevant languages, but it might result from the other parametric variation. We have not examined this issue due to the lack of space, but it has proved that we need to be cautious when we seek the position of some element in relation with the placement of the adverb.

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