

Relative *der* and other C⁰ elements in Danish

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1. Introduction

The Danish word *der* has many different uses. Probably the three main ones are the ones exemplified below: place adverbial in (1a), expletive subject in (1b), and what I shall call ‘relative *der*’ in (1c):¹

- (1a) Jeg har ofte købt bøger der
I have often bought books there
- (1b) I år er der blevet solgt mange bøger
This year is there been sold many books
- (1c) Vi kender de lingvister, der vil købe denne bog
We know the linguists there(= who) will buy this book

A partially similar situation is found in some related languages, where one element appears both as a place adverbial, (1a), and as an expletive subject, (1b): English *there*, Dutch *er*, and *der* in some Norwegian dialects (on the South Coast and on the West Coast). However, to my knowledge, there is no expletive subject (or place adverbial) in any other Germanic language which also occurs in (non-expletive) relative clauses, (1c).

It is therefore an open question whether *der* in (1a,b) and *der* in (1c) are one and the same *der*, or two different elements. In this paper, I shall try to

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¹ Ertshik-Shir (1985: 131) lists five different types of constructions that allow *der* in Danish (and she is not including the possibility of *der* as a place adverbial): ‘existentials’, ‘situatives’, ‘relatives’, ‘clefts’, and ‘embedded questions’. I consider the first two to be subcases of *der* as an expletive subject, and the three others to be subcases of what is under discussion here: relative *der*.

settle the question by examining the structural position of *der* in the two uses, as is general custom in the literature on this subject.

In spite of the high number of discussions of this, there is not complete agreement on the status of *der* in relative clauses. This is very different from the expletive constructions, (1b), where everybody seems to agree that *der* is in subject position (IP-spec).²

Most treatments assume that *der* in relative constructions is in the subject position, exactly like *der* in expletive constructions. Such treatments include Diderichsen (1962: 190, 209), Hansen (1974), Erteschik-Shir (1985), Heltoft (1986: 115, 119), Hjartardóttir and Theilgaard (1989), and Taraldsen (this volume).

There are, however, some treatments which argue that *der* in relative constructions is not in subject position, but in C⁰. These analyses include Jacobsen and Jensen (1982) and Taraldsen (1986).³

As will appear from sections 2.1–2.5 below, I shall join the latter group, i.e. I will argue that *der* is an XP in expletive constructions (where it occurs in IP-spec), and an X⁰ in (non-expletive) relative ones (where it occurs in C⁰).

In sections 3.1–3.7, I shall try to integrate relative *der* into a general analysis of C⁰ elements in Danish, discussing the restrictions operating on the following four possibilities: *som*, *der*, *at*, or nothing at all.

2. Relative ‘*der*’: IP-spec or C⁰?

Before going into the analysis of *der* and *som* in section 3, I will review the arguments for assuming relative *der* to be in the subject position (IP-spec) or in the position otherwise occupied by the finite verb in main clauses and by the subordinate conjunction in subordinate clauses (C⁰). I shall begin with Erteschik-Shir’s (1985) central argument against having relative *der* in C⁰.

2.1. Genitive relative clauses

Erteschik-Shir (1985: 139) argues, with reference to Engdahl (1984: 5), that *der* cannot occur in C⁰. Her argumentation is based on the difference in

² I have discussed expletive *der* at some length in Vikner (1990: chapter 3).

³ Taraldsen’s (1986) analysis is based on the binding theory, and therefore very different from other generative analyses, including Jacobsen and Jensen (1982), Erteschik-Shir (1985), and the one I shall advocate below, which are all based on the Empty Category Principle (ECP). Reasons of space therefore prevent me from commenting at length on Taraldsen (1986) here, but cf. Vikner (1989: 85–87) and Vikner (1990: section 3.3.3).

grammaticality between *der* and *som* ('which'/'who') in genitive relative clauses like (2) and indirect questions like (3). *Hvis hund* ('whose dog') is taken to occur in *C⁰*, as CP-spec supposedly does not exist in embedded clauses (cf. Engdahl 1984). If *C⁰* is filled, only the subject position (IP-spec) is available for any other preverbal material. This subject position may be filled with a trace, (2a)/(3a), or with *der*, (2c)/(3c), but not with *som*, (2d)/(3d). As *som* is possible in relative clauses with an overt subject NP, (4d), as opposed to *der*, (4c), *som* is taken to occur in *C⁰*. This in turn explains why *som* and *der* are different in (2) and (3): *som* is in *C⁰*, *der* in subject position.⁴

- (2a) Jeg kender en pige hvis hund t spiser æbler
 (2b) *Jeg kender en pige hvis hund at t spiser æbler
 (2c) ?Jeg kender en pige hvis hund der t spiser æbler
 (2d) *Jeg kender en pige hvis hund som t spiser æbler
I know a girl whose dog ---- eats apples

- (3a) Jeg ved hvis hund t spiser æbler
 (3b) *Jeg ved hvis hund at t spiser æbler
 (3c) Jeg ved hvis hund der t spiser æbler
 (3d) ??Jeg ved hvis hund som t spiser æbler
I know whose dog --- eats apples

- (4a) Jeg kender en bog denne lingvist har skrevet t
 (4b) *Jeg kender en bog at denne lingvist har skrevet t
 (4c) *Jeg kender en bog der denne lingvist har skrevet t
 (4d) Jeg kender en bog som denne lingvist har skrevet t
I know a book --- this linguist has written

I agree with the basic judgments, viz. that *der* is significantly better than *som* in (2) and (3), though the judgments seem to me to be rather relative: *der* may be better than *som*, but it is not as good as nothing at all, (2a)/(3a).

Though I agree with the judgments, I disagree with the proposed analysis of them. It does not seem feasible that *hvis hund* ('whose dog') is in *C⁰*, as only heads (*X⁰*-elements) may occur in *C⁰*, (cf. Chomsky 1986: 4–5, 68–69), and *hvis hund* clearly is an NP (an *XP*-element). Therefore *hvis hund* must be in CP-spec, and the whole set of examples only show that *der* may occur

⁴ I will not gloss *at*, *der* and *som* below, mainly for reasons of space, but also because a gloss presupposes the kind of decision I am trying to reach in this section. Suffice it to say that I think that *at* corresponds to its English counterpart *that*, that *som* seems to be a particular relative *C⁰*, and that *der* is a relative *C⁰* only possible in subject extractions.

anywhere between CP-spec and I⁰, i.e. either in C⁰ or in the subject position (IP-spec).

Erteshik-Shir's argumentation also rests on the assumption that there is only one X⁰-position available above IP-spec in an embedded clause. However, this seems to be too restrictive a view, as shown by the *som at der* cases in (5) (see further section 3.7 below).

- (5) ?Vi kender mange lingvister som at der vil læse denne bog
We know many linguists --- -- --- will read this book

In most analyses both *som* and *at* would have to be X⁰s, and in my analysis *der* is an X⁰ as well.⁵

I take *at* to be a head, as it is the standard complementiser in embedded clauses. Notice that it is more restricted in relative clauses than its English counterpart *that*.

I take *som* to be an X⁰, as it does not participate in pied piping.⁶ In relative clauses without pied piping, (6), *som* is much better than *hvem* ('who'), which at best is very formal. In pied piping structures like (7), however, there is no doubt that *hvem* is better than *som*:

- (6a) Manden [som jeg gav bogen til t]
 (6b) ??Manden [hvem jeg gav bogen til t]
Man-the ---/whom I gave book-the to
 (7a) *Manden [til som jeg gav bogen t]
 (7b) Manden [til hvem jeg gav bogen t]
Man-the to ---/whom I gave book-the

If we take *hvem* to be an XP and *som* to be an X⁰, these facts may be accounted for, as only XPs may be complements of prepositions, i.e. in (7b) CP-spec contains the PP [*til hvem*].⁷

⁵ In fact, because they take relative *der* to be in C⁰, Jacobsen and Jensen (1982: 8) have to make a rather unattractive assumption, viz. that *at der* is 'a two-word complementizer with no internal structure', i.e. that *at der* is an X⁰-element.

⁶ The kind of pied piping discussed here is the case where all of the PP containing the relative pronoun has moved to the beginning of the sentence. The image is one of the children of Hameln in Lower Saxony, who followed the pied piper out of town (cf. the German term 'die Rattenfängerkonstruktion'). The relative pronoun is the piper, and the rest of the PP follows, just like the children.

⁷ There are also other uses of *som*, where it clearly is an X⁰, e.g. the 'comparative conjunction'

Other explanations for the contrasts in (2)–(4) therefore have to be found, and some will be suggested in section 3 below.

2.2. Relative 'der' as a resumptive pronoun

One of the advantages of the *der* in IP-spec account (Erteschik-Shir 1985) is that the ungrammaticality of (8c) (repeated from (4) above) receives a straightforward account:

- (8a) Jegkender en bog denne lingvist har skrevet t
 (8b) *Jegkender en bog at denne lingvist har skrevet t
 (8c) *Jegkender en bog der denne lingvist har skrevet t
 (8d) Jegkender en bog som denne lingvist har skrevet t
 I know a book --- this linguist has written

In the IP-spec account, (8c) is ruled out because there is not enough room in IP-spec for both *der* and *denne lingvist*. Consider, however, (9):

- (9) *Hvilken tyv_i ved du hvad_j der t_i har stjålet t_j?
 Which thief know you what --- has stolen
 (10) ?Hvilken bog_j ved du hvem_i der t_i har stjålet t_j?
 Which book know you who --- has stolen

This contrast is not accounted for under the *der* in IP-spec account: As opposed to (8c), (9) is not a case of two overt NPs which both have to occur in IP-spec, and therefore nothing stops *der* from occurring in IP-spec. Furthermore, the existence of (10) means that (9) cannot be ruled out by a ban on multiple questions.

In fact, there is even a particular reason why we might expect examples like (9) to be grammatical under the *der* in IP-spec account: as noted by Jacobsen and Jensen (1982: 17), this account basically amounts to saying that *der* is a resumptive (subject) pronoun, and resumptive pronouns may (maybe margin-

in (i). This is not a valid argument, however, as the same argumentation would force me to say that *der* is an XP, given that it is an XP in other uses (i.e. as an expletive subject (cf. 3.1 and 3.2), and as a place adverbial).

(i) Han æder som en tærsker
 He eats like a thresher

(from Diderichsen 1962: 72)

ally) be possible in (9); cf. *han* in the following Swedish cleft question which is roughly parallel to (9):

- (11) ?Vilken tjuv_i är det du inte vet vad_j han_i har stulit t_j?
Which thief is it you not know what he has stolen
 (Elisabet Engdahl p.c.)

but given the ungrammaticality of (9), it does not seem that relative *der* can be a resumptive pronoun.

Resumptive pronouns seem to be much less acceptable in Danish than in Swedish, at least in my judgment, cf. the ungrammatical Danish version of (11):

- (12) *Hvilken tyv_i er det du ikke ved hvad_j han_i har stjålet t_j?
Which thief is it you not know what he has stolen

Some Danes, however, find resumptive pronouns acceptable. The following two examples from Hansen (1974: 397) are such a case. These examples make it even more clear that *der* is not a resumptive pronoun, as it is impossible in a context where a resumptive pronoun (*han* in (13a)) is acceptable:⁸

- (13a) Vi traf en socialdemokrat
 som vi ikke forstod hvorfor han var inviteret
We met a social-democrat
 who we not understood why he was invited
 (13b) *Vi traf en socialdemokrat
 som vi ikke forstod hvorfor der var inviteret
We met a social-democrat
 who we not understood why --- was invited

2.3. Is case assigned to relative 'der'?

Relative *der* differs from expletive *der* with regard to transitive constructions. Relative *der* is grammatical in a transitive context, (14), whereas expletive *der* is impossible, (15):

⁸ These judgments are Hansen's (1974: 397). I would give (13a) at least '??', though I agree that it is better than (13b).

- (14a) Vi kender de lingvister der vil læse denne bog
 (14b) Vi kender de lingvister som der vil læse denne bog
We know the linguists --- --- will read this book
- (14c) Vi ved ikke hvilke lingvister der vil læse denne bog
We know not which linguists there will read this book
- (15) *... at der vil mange lingvister læse denne bog
... that there will many linguists read this book

I have argued elsewhere (Vikner 1990: section 3.1.2.2, where I discuss expletive active transitives) that the ungrammaticality of (15) arises because the NP *mange lingvister* ('many linguists') is not assigned a case (which in turn is due to the lack of inflectional morphology in I⁰ in Danish, cf. that (15) would be possible in Icelandic). This explanation presupposes that expletive *der* in IP-spec is assigned nominative case.

What are the case properties of relative *der*? Under the IP-spec analysis (Erteschik-Shir 1985), relative *der* is the same *der* as expletive *der*, and both should thus be assigned nominative, as both occur in IP-spec. If *der* in (14) is assigned nominative case, however, it would have to 'share' this case with the element in CP-spec ((14a,b): \emptyset , (14c): *hvilke lingvister*), and if it was possible for *der* to share its case with another NP, then we would have no reason for (15) to be ungrammatical.

If relative *der* is in C⁰, it is an X⁰-element, and then it needs no case. This is compatible with the nominative case being assigned to a trace in IP-spec, which shares it with its antecedent (as traces always do), the constituent in CP-spec ((14a,b): \emptyset , (14c): *hvilke lingvister*).

If relative *der* is in C⁰, we can also account for why it is possible for the 'logical subject' NP to be definite in constructions with relative *der* ((14a,b): \emptyset , (14c): *hvilke lingvister*), but not in constructions with an expletive *der* (cf. section 3.1 and also the discussion of (23) below):

- (16a) ... at der vil komme mange lingvister
... that --- will come many linguists
- (16b) *... at der vil komme alle lingvisterne
... that --- will come all linguists-the

The difference is that in (14) nominative is assigned to the trace of the element in CP-spec. This element ((14a,b): \emptyset , (14c): *hvilke lingvister*) thus receives nominative case, and may be definite. In (16) on the other hand, nominative

is assigned to *der*, and *mange lingvister/alle lingvisterne* is assigned partitive case, which is only compatible with indefinite NPs.⁹

The difference between the two analyses is even clearer if we compare indirect questions (with relative *der*) to direct questions (with expletive *der*, cf. (1b)):

- (17) Jeg ved hvis hund der har spist æblet
I know whose dog --- has eaten apple-the

	CP-spec	C ⁰	IP-spec	
IP-spec analysis:	...	<i>hvis hund</i>	<u><i>der</i></u>	<i>har spist æblet</i>
C ⁰ analysis:	...	<i>hvis hund</i>	<u><i>der</i></u> <i>t</i>	<i>har spist æblet</i>
		└──────────┘		

- CP-spec C⁰ IP-spec
- (18) *Hvis hund har der spist æblet?
Whose dog has there eaten apple-the

If *der* in (17) is in subject position (IP-spec), there should be no difference between (17) and (18): in both *der* would be assigned a nominative case and share it with *hvis hund* in CP-spec. This process might either be possible, then (17) and (18) both should be grammatical, or impossible (as argued above), and then both should be ungrammatical. Clearly, however, (17) is grammatical, and (18) is not.

If *der* on the other hand is in C⁰ in (17), nominative case is assigned to the trace of *hvis hund* in IP-spec. In (18) *der* cannot be in IP-spec, as *hvis hund* would get no case, and it cannot be in C⁰, which is already occupied by *har* (the finite verb). We would thus expect (17) to be grammatical, and (18) to be ungrammatical, exactly the right predictions.

In order to support the above argumentation, let me argue in more detail for the position of *hvis hund* ('whose dog'). As in section 2.1, I take it to be in CP-spec, and not in C⁰, as it clearly is an XP and not an X⁰-element.

Hvis hund cannot be outside the embedded CP either, as shown by the examples below. The two matrix verbs differ in that *vide* ('know' in the sense of Fr. *savoir*/Ge. *wissen*) takes a CP as a complement, (19)/(20), but not an NP, whereas *kende* ('know' in the sense of Fr. *connaître*/Ge. *kennen*) takes an NP as a complement, (21)/(22), but not a CP. The construction with *hvis hund*

⁹ Cf. Belletti (1988) and Vikner (1990: section 3.1).

as in (17) is only possible with the CP-selecting verb, and thus it must be inside the CP:

- (19a) Jeg ved [_{CP} hvis hund der har spist æblet]
 (19b) *Jeg kender [_{CP} hvis hund der har spist æblet]
I know whose dog --- has eaten apple-the
- (20a) Jeg ved [_{CP} at hunden har spist æblet]
 (20b) *Jeg kender [_{CP} at hunden har spist æblet]
I know that dog-the has eaten apple-the
- (21a) *Jeg ved [_{NP} ham [_{CP} der har spist æblet]]
 (21b) Jeg kender [_{NP} ham [_{CP} der har spist æblet]]
I know him --- has eaten apple-the
- (22a) *Jeg ved [_{NP} mange lingvister]
 (22b) Jeg kender [_{NP} mange lingvister]
I know many linguists

To sum up this section, 2.3, *der* is possible in relative clauses irrespective of whether they are transitive or not, cf. (14) and (17). *Der* in IP-spec, on the other hand, is not possible in transitive clauses which are not relative, cf. the embedded expletive clause in (15) or the direct question in (18). Under the IP-spec analysis, this difference is unexpected: in all cases *der* should be possible as a kind of resumptive pronoun or 'subject filler' (Erteschik-Shir 1985: 138), as in all cases IP-spec is empty.

Let me finish this section by pointing out that it is not impossible to have a *der* in subject position in a direct question, but the direct question then has the characteristics of other expletive constructions in Danish (cf. section 3.1): it cannot be transitive, and the argument NP which otherwise would have received nominative, will now have partitive case assigned/licensed. The partitive case can be seen from the fact that in (23) the indefinite *hvor mange firmaer* ('how many firms') is much better than the definite *hvilke firmaer* ('which firms').¹⁰

- CP-spec C⁰ IP-spec
- (23a) Hvor mange firmaer er der gået t fallit?
- How many firms are there gone bankrupt?
-

¹⁰ This argument is adopted from Taraldsen (1986: 180).

- (23b) ??Hvilke firmaer er der gået t fallit?
 Which firms are there gone bankrupt?
- (24) Hvilke firmaer er t gået t fallit?
 Which firms are gone bankrupt?

The grammaticality of (24) as compared to (23b) further supports that *der* in IP-spec cannot share its case with a constituent in CP-spec.

It thus seems that with respect to the variation *der* in relatives vs. *der* in non-relatives, i.e. (14) vs. (15) and (17) vs. (18), the analysis that relative *der* is in C⁰ is preferable to the one that assumes it to be in IP-spec.

2.4. Relative 'der' in questions with 'mon'

Given the ungrammaticality of (18), repeated here:

- (25) *Hvis hund har der spist æblet?
 Whose dog has there eaten apple-the

it is rather surprising that the following are perfectly acceptable:

- (26a) Hvem mon der lige har spist kagen?
 (26b) Hvem monstro der lige har spist kagen?
 Who MON --- just has eaten cake-the?
 (= I wonder who just ate the cake)

which would be explained if *der* were in IP-spec. This analysis would also account for (27), though we still would have no account for (25).

- (27a) *Hvem mon somlige har spist kagen?
 (27b) *Hvem monstro somlige har spist kagen?
 Who MON --- just has eaten cake-the?

This would be ruled out because *mon* and *som* cannot both be in C⁰.

There is an alternative analysis, however, which requires some historical background. *Mon* and *monstro* are both developed from the Old Norse modal *munu*, which was used for future tense (cf. Ic. *munu*, 'shall, will'). *Mon* is

simply a relic of the verb itself, whereas *monstro* derives from Old Norse ... *mun svá trúa* ... ('... shall (I) so believe ...', Mikkelsen (1911: 19)). This is also why questions with *mon* had the main verb in the infinitive in earlier stages of Danish:

- (28) Monne han icke vere Christus?
Shall he not be(infinitive) Christ?
 (= *Might he not be Christ?*)
 (Christiern Pedersen's transl. of the New Testament,
 printed 1529, cited in Falk and Torp 1900: 290)

Mikkelsen (1911: 582) suggests that constructions with *mon/monstro* really are constructions with embedded clauses, so that (26a,b) should be interpreted as

- (29a) Hvem mon (det være) der lige har spist kagen?
Who might it be --- just has eaten cake-the?
 (29b) Hvem mon (jeg)s(å) tro der lige har spist kagen?
Who might I thus believe --- just has eaten cake-the?

This analysis would account not only for the difference between (25) and (26), but also for the ungrammaticality of (27). (27) is ruled out like any other occurrence of *som* which is not in the highest clause of the extraction, cf. section 3.2 below:

- (30a) Jeg ved ikke hvem du tror der har gjort det
 (30b) *Jeg ved ikke hvem du tror som har gjort det
I know not who you believe --- has done it

2.5. Conclusion: Relative 'der' is in C⁰

In sections 2.1–2.4, it was argued that the *der* that occurs in relative clauses occurs in C⁰. This was partly done by showing that alternative analyses could be given for two phenomena that seemed to argue against *der* being in C⁰, viz. genitive relative clauses in 2.1, and questions with *mon* in 2.4. The other arguments against relative *der* being in IP-spec had to do with arguments against *der* being a resumptive pronoun (2.2), and with case assignment (*der* and the extracted subject would have to share case, section 2.3).

In this section, I have also made a number of promises, which I hope to be able to keep in the next section. These include providing answers to the

following questions: Why is *der* only possible when the extraction is from IP-spec, cf. (4b)? Why is *som* not possible in genitive relative clauses, cf. (2), nor in indirect questions, cf. (3)? Why is *som* not possible in a clause embedded inside a relative clause, but only in the relative clause itself, cf. (30)? Why is *at* possible at all in a relative clause? Why is no relative at all possible in all genitive relative clauses, cf. (2), in all indirect questions, cf. (3), but in normal relative clauses only if the extracted element is not the subject? and finally, why is the only possible order *som at der* when all three occur in the same relative clause?

3. *C⁰ elements in Danish relative (and other) clauses*

3.1. *The hypotheses*

I will argue that the following restrictions determine which elements may occur in *C⁰*: *som*, *der*, *at*, or nothing at all. Notice that they are all related to the concept of proper (head) government. This is because IP-spec must be properly (head) governed when it contains a trace, which again is a consequence of the Empty Category Principle, ECP, (cf. e.g. Rizzi 1990a or Lasnik and Saito 1984, also discussed in Schwartz and Vikner 1989: 36, fn 7).

- (31) A. *som* requires an empty operator in its spec. (cf. section 3.2)
- B. *som* and *der* may properly govern the spec of their complement iff this spec is coindexed with their own spec. (cf. 3.3)
- C. An empty *C⁰* may properly govern the spec of its complement only if this spec is coindexed with its own spec and its own spec does not contain an empty operator. (cf. 3.4)
- D. *at* never properly governs the spec of its complement. (cf. 3.5)
- E. *der* may only occur if the spec of its complement is coindexed with its own spec, whereas none of *som*, *at*, and the empty *C⁰* are subject to any such restriction. (cf. 3.6)

In Rizzi (1990a: 67), a set of features are suggested which characterise the four possible feature specifications of a *C⁰* (and its CP-spec, with which it must agree) in embedded clauses. The two features are [$\pm wh$] and [$\pm \text{pred(ication)}$]. [$+ wh$] is found on *wh*-phrases, on *I⁰* in matrix questions, and on *C⁰* in embedded questions (cf. Rizzi 1990b: 378–380). [$\pm \text{pred(ication)}$] is the ‘distinctive property of relatives’, i.e. relatives are [$+ \text{pred}$], other embedded clauses [$- \text{pred}$]. The four resulting combinations are given as:

(32) [$\pm wh$] [$\pm pred$]

			CP _{sp}	C ⁰	
(a)	+	–	I wonder	what \emptyset	you saw t
(b)	+	+	The thing	which \emptyset	you saw t
(c)	–	+	The thing	OP	that you saw t
(d)	–	–	I know	\emptyset	that you saw it

(32a) is typically an indirect question, (32b) a relative clause with a *wh*-element, (32c) a relative clause without a *wh*-element, and (32d) a normal embedded declarative clause.

The use of these features allows an account for some of the phenomena that are often referred to as the ‘Doubly filled Comp effect’, a name deriving from the analysis in Chomsky and Lasnik (1977), where the ungrammaticality of constructions like (33) was explained by *that* and the *wh*-element competing for the same positions, viz. C⁰:

(33a) **What that* Peter saw t yesterday?(33b) *The man *who that* Peter saw t yesterday ...


This can now be explained as a feature incompatibility, *what/who* has the feature [$+\text{wh}$], *that* has the feature [$-\text{wh}$].

3.2. ‘Som’ and empty operators

The assumption in (31A) was that *som* requires an empty operator in its specifier. What is an empty operator?


To answer this question we need to make the assumption that in a relative clause something moves from a position inside IP into (the highest) CP-spec. That something may in some cases be an overt element, but it may also be an empty element. This can be seen in examples like the genitive relative clause, (19) = (34), and a normal relative clause, (21) = (35):

(34a) Jeg ved [_{CP} hvis hund der t har spist æblet](34b) *Jeg kender [_{CP} hvis hund der t har spist æblet]



I know whose dog --- has eaten apple-the

(35a) *Jeg ved [_{NP} ham [_{CP} OP der t har spist æblet]](35b) Jeg kender [_{NP} ham [_{CP} OP der t har spist æblet]]



I know him --- has eaten apple-the

In (36c) and (37c), there is an overt *wh*-element in the spec of *som*. This means that this spec is not an empty operator, and so the sentence is ungrammatical. In (38c) the element in the spec of *som* is not overt (it is a trace of *hvem* ('who') in the higher CP-spec), but then it is not an operator either, as the operator is *hvem* in the CP-spec of the higher clause itself. As traces of operators are not themselves operators, (38c) is ruled out.

3.3. Proper government of IP-spec by 'som' or 'der'

Let us now move on to (31B,C,D), which say that *som* and *der* properly govern the spec of their complement iff this spec is coindexed with their own spec, and that an empty *C⁰* may also properly govern the spec of its complement provided that this spec is coindexed with its own spec **and** that its own spec does not contain an empty operator. In order to see how these assumptions work, we will have to consider proper government of IP-spec once again.

As discussed in 3.1 above (following Rizzi 1990a among others), a trace in IP-spec must be properly head governed. This is a potential problem, as the position from which IP-spec could be properly head governed, *C⁰*, does not always contain something which may carry out this government. Rizzi (1990a: 51–60) suggests that the difference between *qui* and *que* in French and *die* and *da* in West Flemish can be analysed along these lines.

Both of these languages have a particular *C⁰* element which is capable of properly governing IP-spec (provided IP-spec and CP-spec agree) and which only occurs when there is agreement between these two specifier positions. Thus French *qui* and West Flemish *die* are exactly like relative *der* in Danish, as further discussed in 3.6. below.

(39) French

- (a) Le linguiste [_{CP} OP que tu crois [_{CP} t qui]] t a lu ce livre
 The linguist that you think that(+agr) has read this book
- (b) *Le livre [_{CP} OP que tu crois [_{CP} t qui]] Paul a lu t
 The book that you think that(+agr) Paul has read

(40) West Flemish

- (a) Den vent [_{CP} OP da Pol peinst [_{CP} t die]] t gekomen ist
 The man that Pol thinks that(+agr) come is

- (b) *Den vent [_{CP} OP da Pol peinst [_{CP} t die Marie t getrokken heet
 The man that Pol thinks that(+agr) Marie photographed has
 (from Bennis and Haegeman 1983:35)

The 'normal' complementiser, i.e. the C⁰ element which does not require agreement between IP-spec and CP-spec, is *que* in French and *da* in West Flemish. French *que* is parallel to the Danish 'normal' C⁰ *at* in that it never properly governs IP-spec:

- (41) French
 (a) *Le linguiste [_{CP} OP que tu crois [_{CP} t que t a lu ce livre
 The linguist that you think that(-agr) has read this book
 (b) Le livre [_{CP} OP que tu crois [_{CP} t que Paul a lu t
 The book that you think that(-agr) Paul has read

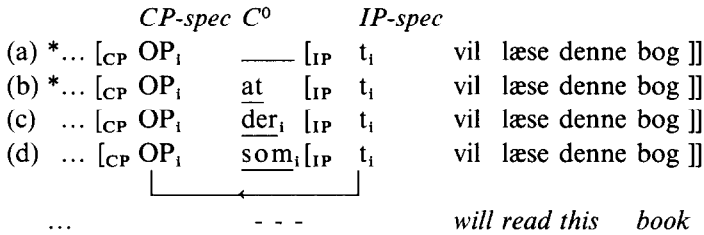
In West Flemish on the other hand, the 'normal' complementiser *da* in (42a) is just as capable of governing IP-spec as *die* was in (40a):

- (42) West Flemish
 (a) Den vent [_{CP} OP da Pol peinst [_{CP} t da t gekomen ist
 The man that Pol thinks that(-agr) come is
 (b) Den vent [_{CP} OP da Pol peinst [_{CP} t da Marie t getrokken heet
 The man that Pol thinks that(-agr) Marie photographed has
 (from Bennis and Haegeman 1983:35)

The idea is that the C⁰ elements only count as proper governors of IP-spec if they are coindexed with IP-spec. As C⁰ is always coindexed with CP-spec (heads are always coindexed with their specifiers, Chomsky 1986:24), C⁰ and IP-spec are only coindexed if CP-spec and IP-spec are.

I suggest that *som* and *der* in Danish have the same ability to properly govern as just seen for *qui* in French and *die/da* in West Flemish. I will also show that this sets *som* and *der* apart from cases with *at* or with no complementiser at all:

- (43) Vi kender de lingvister_i, ...
We know the linguists ...



It may be somewhat problematic that the empty C⁰ in (43a) or *at* in (43b) does not agree with the trace (of the empty operator) in IP-spec: surely \emptyset /*at* agree with their own specs, due to spec-X⁰ agreement, and surely also CP-spec and IP-spec are coindexed, as something was moved from one to the other. So why can the empty C⁰ in (43a) or *at* in (43b) not properly govern IP-spec? In sections 3.4 and 3.5 below, I shall try to answer this question.

But first I shall take a moment to argue in favour of the necessity of coindexation between CP-spec and IP-spec for proper government by *som* and *der*. This coindexation requirement is the cause of the following contrast between (9) and (10), discussed in section 2.2 above, and repeated here:

- (44)
- | | CPsp | C ⁰ | IPsp |
|--|----------|--|------------------------------|
| *Hvilken tyv _i | ved du | hvad _j <u>der</u> _j t _i | har stjålet t _j ? |
| <div style="border-top: 1px solid black; width: 400px; margin: 5px auto;"></div> | | | |
| Which thief | know you | what --- | has stolen |
- (45)
- | | CPsp | C ⁰ | IPsp |
|--|----------|--|------------------------------|
| ?Hvilken bog _j | ved du | hvem _i <u>der</u> _i t _i | har stjålet t _j ? |
| <div style="border-top: 1px solid black; width: 400px; margin: 5px auto;"></div> | | | |
| Which book | know you | who --- | has stolen |

In (44), CP-spec has a different index from IP-spec, and IP-spec can therefore not be properly governed by C⁰. In (45), on the other hand, there is agreement between CP-spec and IP-spec, which is why it is much more acceptable than (44).¹¹

¹¹ (45) is not completely well-formed, as the subadjacency condition is violated, (i.e. the extraction

3.4. Proper government of IP-spec by an empty C⁰

Let us now discuss the empty C⁰ and the ungrammaticality of (43a). I will argue that only a particularly 'weak' kind of spec-X⁰ agreement obtains in (43a), which does not allow the empty C⁰ to properly govern IP-spec, in spite of the fact that they are coindexed.

In Rizzi (1990a: 69), two possible reasons are suggested for the inability of the combination empty operator + empty C⁰ to properly govern IP-spec: One is that empty operators are intrinsically incompatible with agreement processes (cf. also Rizzi 1989), and the other is that an empty CP-spec is deleted when it is identical to the head N⁰ of the relative (the correlate), and then the deleted CP-spec no longer licenses agreement in C⁰.

I will argue in favour of the former, that an empty operator provides such 'weak' coindexation that unless C⁰ is filled by something 'strong', i.e. lexical material such as *som* or *der*, proper government may not take place. This is supported by the fact that when its spec is not filled by an empty operator, the empty C⁰ may actually properly govern IP-spec. Consider the cases discussed in the previous sections which were impossible contexts for *som*, because the relevant CP-spec did not contain an empty operator. It turns out that exactly these cases allow the empty C⁰ to properly govern IP-spec: (46a), (47a), (48a), and (49a):

- (46)
- | | CP-spec | C ⁰ | IP-spec | |
|-----|--|-----------------|---------|---------------|
| (a) | Jeg kender en pige [_{CP} hvis | hund ____ | t | spiser æbler] |
| (b) | *Jeg kender en pige [_{CP} hvis | hund <u>at</u> | t | spiser æbler] |
| (c) | ?Jeg kender en pige [_{CP} hvis | hund <u>der</u> | t | spiser æbler] |
| (d) | *Jeg kender en pige [_{CP} hvis | hund <u>som</u> | t | spiser æbler] |
-
- I know a girl whose dog --- eats apples*

- (47)
- | | CP-spec | C ⁰ | IP-spec | |
|-----|-------------------------------|-----------------|---------|---------------|
| (a) | Jeg ved [_{CP} hvis | hund ____ | t | spiser æbler] |
| (b) | *Jeg ved [_{CP} hvis | hund <u>at</u> | t | spiser æbler] |
| (c) | Jeg ved [_{CP} hvis | hund <u>der</u> | t | spiser æbler] |
| (d) | *Jeg ved [_{CP} hvis | hund <u>som</u> | t | spiser æbler] |
-
- I know whose dog --- eats apples*

of the object goes too far: from the embedded object position to the matrix CP-spec without intermediate traces. Cf. also Rizzi (1990a: 73) and Vikner (1990: section 2.3.7)). In (44), on the other hand, both the subadjacency condition and the ECP are violated.

(48) Jeg ved ikke [_{CP} hvem du tror ...

I know not who you believe ...

CP-spec C⁰ IP-spec

(a) ... [_{CP} t _____ t har gjort det]]

(b) *... [_{CP} t at t har gjort det]]

(c) ... [_{CP} t der t har gjort det]]

(d) *... [_{CP} t som t har gjort det]]

← | ← |
... --- has done it

(49) Jeg kender ikke ham [_{CP} OP du tror ...

I know not him you believe ...

CP-spec C⁰ IP-spec

(a) ... [_{CP} t _____ t har gjort det]]

(b) *... [_{CP} t at t har gjort det]]

(c) ... [_{CP} t der t har gjort det]]

(d) *... [_{CP} t som t har gjort det]]

← | ← |
... --- has done it

3.5. Proper government of IP-spec by 'at'

Let us now address the second part of the question asked at the end of section 3.3: Why can *at* in (43b) not properly govern IP-spec? I suggest that *at* may never qualify as a proper governor in Da. This may be because it is lexically specified as incapable of carrying an index.¹² This approach seems

¹² This is different from Norwegian, where it seems that *at* may be a proper governor of IP-spec under certain conditions. Examples are

Norwegian

(i) Disse konstruksjonar trur eg at t er meir naturlege uttrykksmåtar

These constructions think I that are more natural expressions

(from Engdahl 1984: 12)

(iia) Jeg vet ikke hvem du tror at t har gjort det

(= (48))

I know not who you believe that has done it

(iib) Jeg kjenner ikke ham du tror at t har gjort det

(= (49))

I know not him you believe that has done it

(These and following examples due to Arild Hestvik p.c.)

more promising to me than saying that *at* is incompatible either with extractions in general, cf. (50) below, or with relative clauses, cf. (51) below.

As opposed to (Northern Standard) German, where extraction is impossible across *daß* ('that'), extraction is perfectly possible across *at* in Da.: all of (46b), (47b), (48b), and (49b) would be acceptable if the lowest trace in the extraction chain had been properly governed.¹³ This would have been the case if the trace had been in IP-spec and governed by a *der* in C⁰, (50a), or if the trace had been in object position, (50b), or if the trace had been the complement of a preposition, (50c):

- (50) Jeg kender ikke ham [_{CP} OP du tror ...
 I know not him you believe ...
 (a) CP-spec C⁰ CP-spec C⁰ IP-spec
 ... [_{CP}t at t der t har gjort det]]
 ←-----|-----|-----|
 ... -- --- has done it
 (b) CP-spec C⁰ IP-spec
 ... [_{CP}t at hun bedst kan lide t]]
 ←-----|-----|
 ... -- she best can like
 (= I don't know the man you think she likes best)

In (i) and (ii), the specifier of *at* (i.e. CP-spec) is a trace of the operator, which itself is in a higher CP-spec: *desse konstruksjonar* in (i), *hvem* in (iia) and an empty operator in (iib). However, if the specifier of *at* is the empty operator itself, as in (iii), or an overt *wh*-element, as in (iv), *at* cannot be a proper governor:

Norwegian

- (iii) *Vi kjenner de lingvister at t vil lese denne boken (= (43))
 We know the linguists that t will read this book

- (iva) *Jeg kjenner en jente hvis hund at t spiser epler (= (46))
 I know a girl whose dog that t eats apples

- (ivb) *Jeg vet hvis hund at t spiser epler (= (47))
 I know whose dog that t eats apples

¹³ As for the possibility of having a *wh*-phrase in CP-spec and *at* in C⁰, see Vikner (1990: section 2.3.9.2), as well as the examples in Reinholtz (1989: 111).

- at* is not incompatible with relative clauses: The combination empty operator + *at* may occur (at least in some dialects) in cases where proper government is not necessary (e.g. because the gap is in object position, as above):

- Admittedly these cases are less acceptable than (50) above, though they seem far from unacceptable to me.

Summing up sections 3.3–3.5, we have seen that *som* and *der* may properly govern IP-spec only if their own spec agrees with IP-spec, (31B). An empty C⁰ may properly govern IP-spec only if its own spec agrees with IP-spec and if its own spec is not an empty operator, (31C). As for *at*, it seems that it is never possible as a proper governor, (31D).

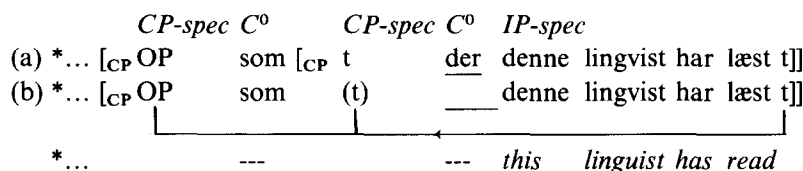
(31E) stated that *der* only occurs when there is agreement between the spec of its complement (IP-spec) and its own spec (CP-spec), whereas *som* does not have such a restriction.

(52)

	<i>CP-spec</i>	<i>C°</i>	<i>IP-spec</i>	
(a) *Vi kender en bog [_{CP}		OP	<u>der</u> denne lingvist har læst t]	
(b) Vi kender en bog [_{CP}		OP	_____ denne lingvist har læst t]	
<i>We know a book</i>			← <i>--- this linguist has read</i>	

The judgments are parallel when *som* also occurs:

- (53) Vi kender en bog ...
 We know a book ...



If relative *der* is in IP-spec, these facts are accounted for in a very straightforward manner: IP-spec cannot both contain *der* and the subject.

If relative *der* is in C⁰, these judgments might seem problematic, as *der* in C⁰ and *denne lingvist* in IP-spec are in different positions, and should thus be able to occur in the same sentence. However, there might be another requirement that rules out this possibility, viz. the one suggested above, that it is a lexical property of *der* that its own specifier and the specifier of its complement agree (cf. that a similar requirement rules out (39b) in French and (40b) in West Flemish).¹⁴

In other words, the reason why the Danish (52a) and (53a) are ungrammatical is that there is no agreement between the two specifiers on either side of *der*:

- (54a) *... [CP OP_i som_i [CP t_i der_i [IP denne lingvist_j har læst t_i]]]
 (54b) *... [CP OP_i der_i [IP denne lingvist_j har læst t_i]]
 |———xxx———|
 --- this linguist has read

In grammatical examples of the type (1)/(14b), this agreement on the other hand obtains (regardless of whether *som* is present or not):

- (55a) ... [CP OP_i som_i [CP t_i der_i [IP t_i vil læse denne bog]]]
 (55b) ... [CP OP_i der_i [IP t_i vil læse denne bog]]
 |———|
 --- will read this book

¹⁴ The agreement required for these particular complementisers, Da. *der*, Fr. *qui*, and WF. *die*, is of the same kind as the agreement required for the auxiliary *be* in the analysis of Vikner and Sprouse (1988), i.e. the X⁰ in question must agree not only with its own specifier but also with the specifier of its complement.

Finally, if there is no *der*, as in (52b) and (53b), the structures are also grammatical, as no restrictions are violated:

- (56a) ... [_{CP} OP_i som [_{IP} denne lingvist_j har læst t_i]]
 (56b) ... [_{CP} OP_i ____ [_{IP} denne lingvist_j har læst t_i]]
 ... --- *this linguist has read*

Before I move on to the combinations involving *at*, I should like to mention one more distributional fact about *der*, but this time one that cannot be accounted for in any analysis that I know of. This fact is that *der* never occurs in the second of two conjoined relative clauses (as noted e.g. in Jacobsen and Jensen 1982: 18). The judgments are very clear:

- (57) Jeg kender mange lingvister ...
 I know many linguists ...
- (a) ... der vil læse denne bog og som måske vil synes om den
 (b) *... der vil læse denne bog og der måske vil synes om den
 (c) ... som vil læse denne bog og som måske vil synes om den
 (d) *... som vil læse denne bog og der måske vil synes om den
 ... --- *will read this book and --- maybe will like it*

and they are basically the same if a *som* is added to each *der*:

- (58) Jeg kender mange lingvister ...
 I know many linguists ...
- (a) ... som der vil læse denne bog og som måske vil synes om den
 (b) *... som der vil læse denne bog og som der måske vil synes om den
 (c) ... som vil læse denne bog og som måske vil synes om den
 (d) *... som vil læse denne bog og som der måske vil synes om den
 ... --- --- *will read this book and --- --- maybe will like it*

3.7. Combinations with 'at'

Following (31D), *at* is never able to properly govern the specifier of its complement. The consequence is that *at* is never possible in a C⁰ which selects an IP where IP-spec contains a trace. As discussed in section 3.5, this does not mean that *at* is always excluded in connection with a subject extraction (it is possible as long as something else properly governs IP-spec, cf. (50a)), or that *at* is always excluded when it governs an IP from which

something is extracted (this is possible if the extraction is not from IP-spec, cf. (50b,c)).

In this section I want to discuss the possible combinations of *som* and/or *der* with *at*. As mentioned in connection with (5) above (and as often noted, e.g. in Mikkelsen 1911:298, Diderichsen 1962:72, Jacobsen and Jensen 1982:10, Hansen 1983:73, and Heltoft 1986:119), it is possible to combine all three C⁰s in one clause, but only in one particular order:¹⁵

(59) Vi kender de lingvister ...

We know the linguists ...

	CPsp	C ⁰	CPsp	C ⁰	CPsp	C ⁰	IPsp				
(a) ?...	[OP	<u>som</u>	[t	<u>at</u>	[t	<u>der</u>	t	vil	læse	denne	bog]]
(b) *...	[OP	<u>som</u>	[t	<u>der</u>	[t	<u>at</u>	t	vil	læse	denne	bog]]
(c) *...	[OP	<u>at</u>	[t	<u>som</u>	[t	<u>der</u>	t	vil	læse	denne	bog]]
(d) *...	[OP	<u>at</u>	[t	<u>der</u>	[t	<u>som</u>	t	vil	læse	denne	bog]]
(e) *...	[OP	<u>der</u>	[t	<u>som</u>	[t	<u>at</u>	t	vil	læse	denne	bog]]
(f) *...	[OP	<u>der</u>	[t	<u>at</u>	[t	<u>som</u>	t	vil	læse	denne	bog]]
		←		←		←					
...		---		---		---					
										will read this	book

What rules out (59b,c,d,e,f)?

If *som* has to have an empty operator in its specifier, as argued in (31A) and in 3.2 above, then this requirement rules out the combinations where *som* is not the leftmost of the three C⁰ elements, i.e. (59c,d,e,f).

If *at* cannot properly govern anything, as argued in (31D) and in 3.5 above, then this explains the ungrammaticality of the combinations where *at* is the rightmost of the three C⁰ elements, i.e. (59b,e).

¹⁵ Though it may seem that (59a) should be improved if *der* is an expletive subject, this is actually not the case:

- (i) ?Vi kender en lingvist som at der bliver nævnt i denne bog
We know a linguist --- -- --- is mentioned in this book

There still seems to be a weak restriction with regard to the cooccurrence of *som* and *at* which is violated. This restriction may be prescriptive, cf. the following comment on this kind of structures: 'The relative pronoun *som* can never be followed by the conjunction *at*', made by Nissen (1982:135), which is a rather prescriptive volume ('Some [of my] rules may seem quibbling, and they are often neglected in the spoken language', Nissen 1982: 7).

Below, I will demonstrate that these two conditions (all but) suffice to rule out any other possible combination involving *at*.

Consider first variations over (59a):

- (60a) ?Vi kender en lingvist som at der vil læse denne bog
 (60b) *Vi kender en lingvist som at vil læse denne bog
 (60c) ??Vi kender en lingvist at der vil læse denne bog
 (60d) *Vi kender en lingvist der at vil læse denne bog
We know a linguist ----- will read this book

(60a) is the same as (59a). In (60b,d) the trace in IP-spec is not properly governed, as the only *C⁰* which might perform this task (i.e. the closest c-commanding *C⁰*) contains *at*, which cannot be a proper governor. As for (60c), I would have to say that it has the same status as the dialectal (51) in 3.5, i.e. its unacceptability is mainly a result of prescription.

Let us move on to other paradigms of combinations with *at*:

- (61a) *Vi ved hvem som at der vil læse dennebog
 (60b) *Vi ved hvem som at vil læse dennebog
 (60c) *Vi ved hvem at der vil læse dennebog
 (60d) *Vi ved hvem der at vil læse dennebog
We know who ----- will read this book

(61a,b) are ruled out as *som* has an overt *wh*-element in its spec, violating (31A). As above, the trace in IP-spec in (61b,d) is not properly governed, because the lowest *C⁰* contains *at*. (61c) could be ruled out because *at* is [*-wh*] and its spec, *hvem*, is [*+wh*], cf. section 3.1. Another possibility is that *at* is not necessarily [*-wh*] (it could be unmarked for [*±wh*]), and that, as above, the unacceptability of (61c) is mainly a result of prescription.

- (62a) *Vi kender en pige hvis far som at der vil læse denne bog
 (62b) *Vi kender en pige hvis far som at vil læse denne bog
 (62c) *Vi kender en pige hvis far at der vil læse denne bog
 (62d) *Vi kender en pige hvis far der at vil læse denne bog
We know a girl whose father ----- will read this book

(62a,b) are ruled out as *som* has an overt *wh*-element in its spec, violating (31A). The trace in IP-spec in (62b,d) is not properly governed, because the lowest *C⁰* contains *at*. As above, (62c) is either ruled out because *at* and its spec do not agree w.r.t. [*±wh*], or for purely prescriptive reasons.

- (63a) *Vi kender en bog som at der denne lingvist vil læse
 (63b) ?Vi kender en bog som at denne lingvist vil læse
 (63c) *Vi kender en bog at der denne lingvist vil læse
 (63d) *Vi kender en bog der at denne lingvist vil læse
We know a book ----- this linguist will read

(63a,c) are ungrammatical as *der* does not agree with the specifier of its complement (IP-spec), violating (31E). As IP-spec is not empty here, it is possible for the lowest C⁰ to contain *at*, as in (63b,d). (63b) therefore violates nothing but the prescriptive ban on the combination of *som* and *at*. (63d) is a different story altogether. Nothing we have said so far can account for its ungrammaticality: *at* should be possible as IP-spec does not need to be properly governed, and *der* should be possible as there is agreement between its own spec and the spec of its complement. The ungrammaticality of (63d) must therefore be caused by something else. I suggest that *der*, as opposed to *som* and *at* (cf. also Vikner 1990: section 2.3.3), must select an IP, and cannot select a CP. This condition will rule out the following examples above: (59b,d,e,f), (60d), (61d), and (62d), which were all ruled out independently by the inability of *at* to properly govern an IP-spec.

- (64a) *Jeg ved ikke hvem du tror som at der vil læse denne bog
 (64b) *Jeg ved ikke hvem du tror som at vil læse denne bog
 (64c) Jeg ved ikke hvem du tror at der vil læse denne bog
 (64d) *Jeg ved ikke hvem du tror der at vil læse denne bog
I know not who you believe ----- will read this book

(64a,b) are ungrammatical as *som* does not have an empty operator in its spec (but a trace of the overt operator, *hvem*). (64b,d) are ungrammatical as the trace in IP-spec is not properly governed, the relevant C⁰ being occupied by *at*. In (64c) neither of these violations take place. Notice that, as opposed to the cases above, (64c) is not ruled out prescriptively here, as *at* would not be taken to occur in a relative clause (as the relative clause is the highest embedded CP, the one beginning with *hvem*).

Summing up, it would seem that with the added restriction on *der* that it must select an IP, the hypotheses set up in section 3.1 above have turned out to account for the data.

4. Conclusion

In this article, I have tried to do two things. In section 2, I argued that relative *der* was a different kind of element from the expletive subject *der*. Relative *der* is a head, which occurs in C⁰, whereas expletive subject *der* is a subject, i.e. an XP which occurs in IP-spec.

In section 3, a more comprehensive analysis of C⁰ elements in Danish was suggested. The varying distributions of these four elements (*som*, *der*, *at*, and an empty C⁰) were shown to depend on the conditions for proper government of IP-spec from C⁰. Following Rizzi (1990a), I suggested that this requires that CP-spec and IP-spec be coindexed, as C⁰ has to have the same index as IP-spec (section 3.3). It was furthermore argued that each of the four C⁰ elements had special properties: *at* can never be a proper governor (3.5 and 3.7), and the empty C⁰ cannot be a proper governor if there is an empty operator in CP-spec (3.4). Furthermore, *som* requires the presence of an empty operator in CP-spec (3.2), and *der* requires both that its complement is an IP (3.7) and that CP-spec agrees with IP-spec (3.5).

I hope to have shown that it is possible to give an analysis of the rather complex situation concerning C⁰ (and concerning the word *der*) which is compatible with the facts of other languages. It is then a matter for further research just how compatible this analysis is with the facts of the other Scandinavian languages.

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