Expletive subjects in subject relative clauses*

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Comparative Germanic Syntax Workshop 15

May 27, 2000

In this paper I propose an analysis of subject relative clauses in Danish, which accounts for the distributional facts, while making restrictive assumptions about clause structure, and no appeal to lexical specification and descriptive technology like government, co-indexing, and adjacency. In addition the analysis opens up the possibility of a unified analysis of relative clauses and impersonal constructions.

1 Introduction

Data

(1) Vi kender de lingvister **som at der** vil læse denne bog.
We know the linguists who that there will read this book.
'We know the linguists who will read this book'

Question What is the syntactic category of *som*, *at*, and *der*?

Previous analyses

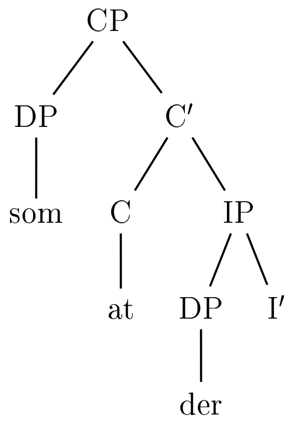
Jacobsen and Jensen (1982)	*som* = *wh*-word *at der* = two-word C^0
Erteschik-Shir (1984)	*som* = C^0 *at* = C^0 *der* = expletive
Vikner (1991)	*som* = C^0 *at* = C^0 *der* = C^0

*Thanks to Jim McCloskey for continued discussion of the ideas presented here and to Geoff Pullum and Sten Vikner for comments on earlier versions of this paper.

All of these need further stipulations: requirements on operator adjacency, co-indexing, co-superscripting, proper government, lexical ambiguity of *der* ...

Proposal

(2)



- *som* = invariant operator
- *at* = complementizer
- *der* = expletive

- EPP: [Spec, IP] must be filled
- operator movement to [Spec, CP]
- single specifier of CP
- no CP recursion in relative clauses

Advantages

- Empirical: accounts for distribution of *som*, *at*, *der* in relative clauses
- Methodological:
  - no lexical ambiguity
  - no appeal to government, co-indexing, operator adjacency ...
  - restrictive assumptions about phrase-structure
- Theoretical: unifies analysis of relative clauses and impersonal constructions

2 Distributional facts

1. *der* occurs only in subject relative clauses
2. *som* occurs in subject and non-subject relative clauses
3. *som* does not participate in pied-piping
4. when *som at der* are all present they must appear in that order
5. *som* or *der* must be present in a subject relative clause

2.1 *der* occurs only in subject relative clauses

(3) Vi kender de lingvister ...
We know the linguists ...

a. der vil læse denne bog [subject relative]
there will read this book

b. *der han vil besøge [object relative]
there he will visit

c. *der han spurgte efter [PP relative, no pied-piping]
there he asked after

d. *efter der han spurgte [PP relative, pied piping]
after there he asked

Non-subject relative clauses: the thematic subject occupies [Spec, IP], ruling out *der*:

(4) *... de lingvister$_i$ [$_{CP}$ OP$_i$ [$_{IP}$ **der han** [$_{VP}$ vil besøge t$_i$]]]
... the linguists there he will visit

Subject relative clauses: the thematic subject (= the operator) moves directly to [Spec, CP], and *der* is inserted in [Spec, IP] to satisfy the EPP:

(5) ... de lingvister$_i$ [$_{CP}$ OP$_i$ [$_{IP}$ der [$_{VP}$ t$_i$ vil læse denne bog]]]
... the linguists there will read this book

2.2 *som* occurs in subject and non-subject relative clauses

(6) Vi kender de lingvister ...
We know the linguists ...

a. som vil læse denne bog [subject relative]
who will read this book

b. som han vil besøge [object relative]
who he will visit

c. som han spurgte efter [PP relative]
who he asked after

Parallelism with null operator: Danish also has a null invariant operator OP, which also occurs in both subject and non-subject relative clauses:

(7) Vi kender de lingvister$_i$ ...
We know the linguists

a. OP$_i$ der t$_i$ vil købe denne bog [subject relative]
there will buy this book

b. $\textsc{op}_i$ han vil besøge t_i [object relative]
he will visit

c. $\textsc{op}_i$ han spurgte efter t_i [PP relative]
he asked after

2.3 *som* does not participate in pied-piping

Parallelism: OP does not participate in pied-piping:

(8) Jeg kender de lingvister$_i$
I know the linguists

a. $\textsc{op}_i$ han spurgte efter t_i [no pied-piping]
he asked after

b. *[efter $\textsc{op}_i]_j$ han spurgte t_j [pied-piping]
after he asked

If *som* is an invariant operator — the overt counterpart of OP – it is expected that *som* does not participate in pied-piping:

(9) Jeg kender de lingvister$_i$
I know the linguists

a. som$_i$ han spurgte efter t_i [no pied-piping]
he asked after

b. *[efter som$_i]_j$ han spurgte t_j [pied-piping]
after he asked

Pied-piping occurs only with non-invariant *wh*-operators:

(10) ... [efter hvem]$_j$ han spurgte t_j
... after who he asked

This generalization also holds for English:

(11) This is the book$_i$

a. $\textsc{op}_i$ I read it in t_i

b. *[in $\textsc{op}_i]_j$ I read it t_j

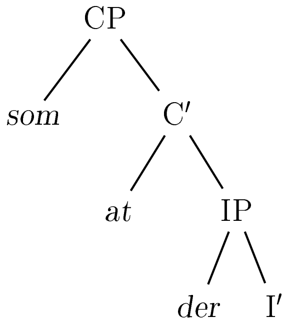
c. [in which$_i]_j$ I read it t_j

2.4 Unique ordering

When *som at der* are all present they must appear in that order: follows from the categorical status of *som*, *at*, *der* and standard X-bar theory:

(12)
- a. som at der
- b. *som der at ...
- c. *at der som ...
- d. *at som der ...
- e. *der som at ...
- f. *der at som ...

(13)



2.5 Either *som* or *der* must be present in a subject relative clause

(14) Vi kender de lingvister

- a. som at der ...[1]
- b. ??som at ...
- c. som ...
- d. som der ...
- e. at der ...
- f. der ...
- g. *at ...
- h. * ...

Descriptive generalization: either *som* or *der* must appear in a subject relative clause.

Analysis: this generalization reflects the EPP requirement

Assumptions

- only overt elements can satisfy the EPP (Danish is not pro-drop)
- operator movement to [Spec, CP] can be direct or or via [Spec, IP]
- optional deletion of *at* (similar to *that*-deletion)

(15) Vi kender de lingvister

- a. [$_{\text{CP}}$ som$_i$ at [$_{\text{IP}}$ der [$_{\text{VP}}$ t$_i$ ...
- b. ??[$_{\text{CP}}$ som$_i$ at [$_{\text{IP}}$ t$_i$ [$_{\text{VP}}$ t$_i$ ...
- c. [$_{\text{CP}}$ som$_i$ [$_{\text{IP}}$ t$_i$ [$_{\text{VP}}$ t$_i$...
- d. [$_{\text{CP}}$ som$_i$ [$_{\text{IP}}$ der [$_{\text{VP}}$ t$_i$ ...
- e. [$_{\text{CP}}$ OP$_i$ at [$_{\text{IP}}$ der [$_{\text{VP}}$ t$_i$ ...
- f. [$_{\text{CP}}$ OP$_i$ [$_{\text{IP}}$ der [$_{\text{VP}}$ t$_i$ ...
- g. *[$_{\text{CP}}$ OP$_i$ at [$_{\text{IP}}$ t$_i$ [$_{\text{VP}}$ t$_i$ ...
- h. *[$_{\text{CP}}$ OP$_i$ [$_{\text{IP}}$ t$_i$ [$_{\text{VP}}$ t$_i$...

[1]Jacobsen and Jensen (1982, 10) give (15a), (15d) and (15e) a question mark, based on the fact that they are discouraged or banned in normative grammars. I ignore this issue here.

Direct operator movement: (15a,d,e,f)

- *som* or OP moves directly from [Spec, VP] to [Spec, CP]
- *der* is inserted in [Spec,IP] to satisfy the EPP

Indirect operator movement (15b,c,g,h)

- *som* or OP moves to [Spec,CP] via [Spec,IP]
- If the operator is overt (= *som*) it satisfies the EPP in the intermediate position (15b,c)
- If the operator is null (= OP) it cannot satisfy the EPP, and the result is ungrammatical (15g,h)

Question Why is (16b) worse than (16a) and (16c)?

(16) a. som$_i$ at [$_{IP}$ der ... t$_i$ ...

b. ??som$_i$ **at** [$_{IP}$ **t**$_i$ ... t$_i$ ...

c. som$_i$ [$_{IP}$ t$_i$ ... t$_i$ ...

Answer *(th)at*-trace effect

(17) a. Hvem$_i$ tror du **at** **hun** har inviteret t$_i$ til festen?
Who think you that she has invited t to party.DEF
'Who do you think that she has invited to the party'

b. ??Hvem$_i$ tror du **at** **t**$_i$ har inviteret hende til festen?
Who think you that t has invited her to party

Prediction: no requirement that *som* must be present in a non-subject relative clause:

(18) Vi kender de lingvister ...

a. ... [$_{CP}$ OP$_i$ [$_{IP}$ han [$_{VP}$ vil besøge t$_i$]]] [object relative clause]
... he will visit

b. ... [$_{CP}$ OP$_i$ [$_{IP}$ han [$_{VP}$ spurgte [$_{PP}$ efter t$_i$]]]] [PP relative clause]
... he asked for

Thematic subject (*han*) satisfies the EPP, OP moves directly to [Spec, CP]

3 Further evidence: co-occurence with *wh*-operators

Non-invariant *wh*-operators in Danish: *hvad* 'what', *hvem* 'who', *hvis* 'whose'

Categorical status and positions

- all operators occur in [Spec, CP], including
  - *wh*-operators (*hvad*, *hvem*, *hvis* ...)
  - invariant operators (*som*, OP)
- expletives occus in [Spec, IP]
- unique [Spec, CP]

Predictions

- *der* can co-occur with *wh*-operators
- *som* cannot

Verification:

1. Genetive subject relative clauses (example from Vikner (1991, 126))

(19) Jeg kender en pige$_j$ [**hvis**$_j$ **hund**]$_i$ **der** / ***som** t$_j$ spiser æbler
I know a girl whose dog there / who eats apples
'I know a girl whose dog eats apples'

2. Embedded subject relatives (example from Vikner (1991, 119))

(20) Jeg ved ikke **hvem** du tror **der**/ ***som** har gjort det
I know not who you think there / who has done it
'I don't know who you think has done it

3. Appositive subject relatives with clausal antecedent (ex. from Weekendavisen 03/17/00)

(21) ... vores eget fly var gået definitivt i stykker
... our own plane was gone definitively in pieces
'... our own plane had definitively broken down'

a. **hvad der** / ***som** udløste voldsomme protester ...
what there / who caused strong protests ...
which caused strong protests ...

4 A unified analysis of expletive and relative *der*

The analysis of *der* as an expletive in subject relative clauses opens up the possibility of a unified analysis of relative clauses and impersonal constructions:

Subject relative clause

(22) Vi kender de lingvister [CP OP [IP **der** vil læse denne bog]]
We know the linguists there will read this book.
'We know the linguists that will read this book'

Impersonal construction

(23) Vi ved [CP at [IP **der** vil blive læst mange bøger]]
We know that there will be read many books
'We know that many books will be read'

Unified analysis: *der* is an expletive, and occupies [Spec, IP]

Two challenges

- **definiteness**: impersonal constructions display a definiteness restriction on the postverbal argument, subject relative clauses do not:

  (24) *Vi ved at **der** vil komme [**de lingvister**]
  We know that there will come the linguists

  (25) Vi kender [**de lingvister**] **der** vil komme t
  We know the linguists there will come.

- **transitivity**: impersonal constructions display a transitivity restriction, subject relative clauses do not:

  (26) *Vi ved at **der** vil læse [**mange lingvister**] [**denne bog**]
  We know that there will read many linguists this book

  (27) Vi kender [**mange lingvister**] **der** vil læse [**denne bog**]
  We know many linguists there will read this book.

4.1 Challenge I: no definiteness restriction in relative clauses

Observation "Gaps in relative clauses appear to be indefinite even when the relative heads are definite" Browning (1987, 130):

(28) a. *There were the men in the garden (= Browning's (164a))

b. The men that there were in the garden were all diplomats (= Browning's (165a))

Suggestion The contrast in (29) is parallel to the one in (28):

(29) a. *Der kommer **de** lingvister til festen
there comes these linguists to party.DEF

b. **De** lingvister der kommer til festen er alle fra Sverige
the linguisist there comes to party are all from Sweden

For analyses of this and related facts see Browning (1987, 127-131) and Bianchi (1999, 41-49).

4.2 Challenge II: no transitivity restriction in relative clauses

Question Why should there be this difference between impersonal constructions and relative clauses?

Suggestion A-bar movement weakens Case requirements

- Transitive Expletive Constructions (TEC) are not possible in Danish because the thematic subject argument cannot get Case (Vikner, 1995)
- Case requirements are weakened in constructions involving A-bar movement Kayne (1980, 79-80), Rizzi (1990, 60), see also Postal (1993).

  (30) a. Who$_i$ can you assure me t$_i$ to be competent?

  b. *I assure you them to be competent

  (31) a. Jean, que Marie croit être intelligent, ... (= Kayne's (35))
  John, who Mary believes to.be intelligent ...

  b. *Marie croit John être intelligent. (= Kayne's (36))

- subject relative clauses involve A-bar movement of the thematic subject, and thus Case requirements are weakened for the operator, allowing transitive subject relative clauses with an expletive in [Spec, IP].

5 Conclusion

In this paper I have proposed an analysis of subject relative clauses that accounts for

- the distribution of *som at der* in relative clauses, and
- the ability of *der*, but not *som* to co-occur with *wh*-operators

while making restrictive assumptions about clause structure and minimal appeal to descriptive technology.

I have shown how this proposal makes it possible to unify the analysis of relative clauses and impersonal constructions, and further how such a unification raises broader issues to do with definiteness restrictions, case assignment, and transitivity, which needs to be addressed by further research.

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