

Relative clauses are not always strong islands*

Filippa Lindahl

University of Gothenburg

Abstract

Scandinavian relative clause extraction seems to violate purportedly universal locality conditions (i.e. the Complex NP Constraint (Ross 1967), Subjacency (Chomsky 1973) and the Phase Impenetrability Condition (Chomsky 2001)). Recent analyses of the construction rely on the assumption that it involves only subject relative clauses (Kush, Omaki & Hornstein 2013), or that extraction from subject relative clauses should be analyzed differently than extraction from non-subject relative clauses (Platzack 2014). However, Swedish provides evidence that relative clause extraction involves non-subject relative clauses as well. Crossover phenomena, parasitic gap licensing, island effects and connectivity effects show that non-subject relative clause extraction involves two \bar{A} -movement dependencies, which means that relative clauses are not strong islands in all languages. If the Phase Impenetrability Conditions holds, and \bar{A} -movement is successive cyclic through Spec-CP, Swedish relative C must tolerate multiple specifiers. These facts raise questions for a phase-based account of island phenomena.

As non-subject relative clause extraction is very rare, I suggest that speakers must be able to deduce the possibility of extracting from non-subject relatives from the possibility of extracting from subject relatives, and that consequently, we need a unified analysis of subject and non-subject relatives.

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1 Introduction

Swedish exhibits long-distance dependencies in which an antecedent outside of a relative clause is associated with a gap inside the relative clause, as in (1).

- (1) [Det språket]_i finns det många islänningar [som talar _{-i}].
 the language exist EXPL many Icelanders REL speak
 ‘There are many Icelanders who speak that language.’

The phenomenon is commonly called *relative clause extraction*, and examples like (1) have been discussed in the international syntax community at least since Erteschik-Shir (1973). From a theoretical perspective the possibility of creating such long-distance dependencies is of interest, since it seems to violate purportedly universal locality conditions (i.e. the Complex NP Constraint (Ross 1967), Subjacency (Chomsky 1973) and the Phase Impenetrability Condition (Chomsky 2001)) that have been proposed to account for the ungrammaticality of corresponding sentences in languages other than the mainland Scandinavian.

Beginning with Ross (1967), relative clauses have been identified as syntactic islands: constituents that are opaque to movement relations. A common distinction is that between strong and weak islands (see e.g. Szabolcsi (2006) for an overview). Strong islands are constituents into which movement dependencies cannot reach at all, whereas weak islands allow certain dependencies, but not others. Relative clauses have been taken as the prototypical example of strong islands.

Some recent analyses of Scandinavian relative clause extraction rely on the assumption that these dependencies involve only subject relative clauses (Kush, Omaki & Hornstein 2013), or that extraction from subject relative clauses should be analyzed differently than extraction from non-subject relative clauses (Platzack 2014). These two approaches share the idea that in examples like (1) the relation between the head *islänningar* and the empty position inside the embedded clause is not mediated by an \bar{A} -dependency.

In this paper, I investigate extraction from non-subject relative clauses, as in (2).

- (2) [Den där halloweenmasken]_i vill Edith hitta någon_k som hon kan skrämna _{-k} med _{-i}
 the there Halloween mask-DEF want Edith find someone REL she can scare with
 ‘Edith wants to find someone that she can scare with that Halloween mask.’

Similar examples have been noted previously (e.g. Koch-Christensen 1982; Engdahl 1997; Heinat & Wiklund submitted; Platzack 2014), but here I argue that they should be analyzed as involving two \bar{A} -bar dependencies. Based on evidence from crossover phenomena, parasitic gaps and connectivity effects, I furthermore show that these \bar{A} -dependencies have several characteristics commonly associated with movement, and that an analysis in terms of silent pronouns is not viable.

From this I conclude that relative clauses are not strong islands in Swedish, but rather some species of weak island. In effect, this means that it must be possible for speakers to learn that relative clauses are not strong islands in a specific language. Since extraction from non-subject relative clauses seems to be very rare in spontaneous speech and writing, a plausible hypothesis is that speakers can deduce the possibility of extracting from non-subject relative clauses from

the possibility of extracting from subject relative clauses, which occur more often. I take this as an argument for a unified analysis of subject and non-subject relative clauses.

The paper is structured as follows. In the following section, I present the previous proposals by Kush et al. (2013) and Platzack (2014). In section 3, I show that extraction from non-subject relative clauses involves two \bar{A} -bar dependencies. In section 4, I argue for a unified analysis of subject and non-subject relative clauses. Section 5 is a discussion of how the facts from Swedish narrow down the hypothesis space for a feature-driven account of relative clause extraction given the Phase Impenetrability Condition, and of the challenge this analysis poses for this type of account of island phenomena. Section 6 concludes.

2 Background: Two recent proposals

There are several proposals for why the mainland Scandinavian languages allow sentences like (1).¹ Here I will discuss only two of these. Each of them try to explain the exceptionality of the mainland Scandinavian languages in terms of the structure of the embedded clause, and the new data that I present in sections 3 and 4 are hard to square with them. In section 2.1, I will discuss the Small Clause Hypothesis put forth by Kush et al. (2013) and in section 2.2, I turn to a proposal by Platzack (2014).

2.1 The Small Clause Hypothesis

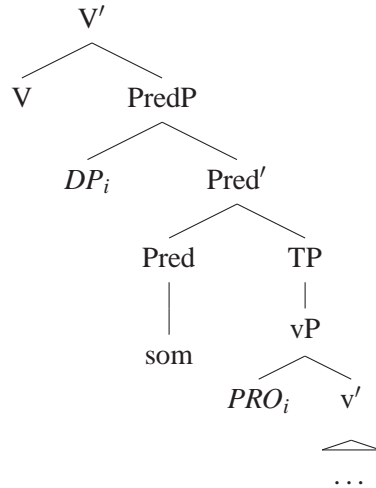
So far I have been assuming that the embedded clause introduced by *som* in (1), here reproduced as (3), is a relative clause, headed by the relative complementizer *som*.

- (3) [Det språket]_i finns det många islänningar som talar _{-i} .
 the language exist EXPL many Icelanders REL speak
 ‘There are many Icelanders who speak that language.’

Kush et al. (2013), building in part on Kush (2011), try a different tack. They argue that what looks like a relative clause in these examples is actually a small clause. Kush (2011) proposes that this small clause has the structure in (4).

¹Some of these include Allwood (1982), Andersson (1982), Erteschik-Shir (1973), Erteschik-Shir & Lappin (1979), and Engdahl (1982, 1997). For an overview of different approaches, see Heinat & Wiklund (submitted).

(4)



The account is based on the fact that the relative complementizer *som* in the mainland Scandinavian languages is homophonous with predicational *som*, which has been argued to head small clauses (Eide & Åfarli 1999). According to Kush et al. (2013) then, examples like (3) only *appear* to involve extraction from a relative clause, and are only perceived as acceptable to the extent that the apparent relative clause could be analyzed as a small clause.

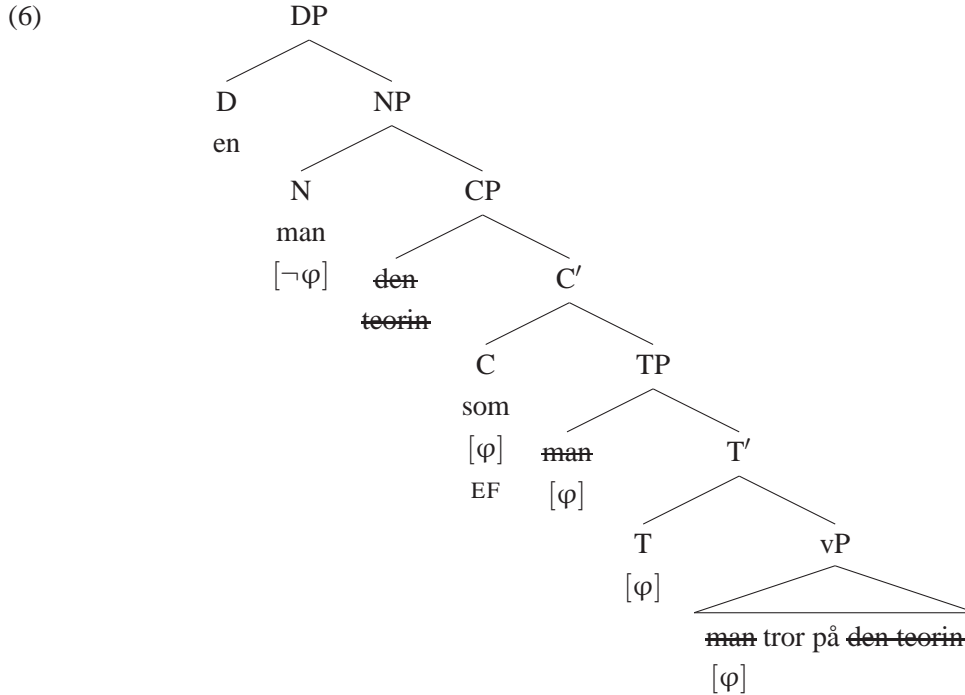
The clause is small in the sense that it lacks a CP-layer, which would explain why there is no problem for phrases to move to higher positions outside of the clause without stopping off in intermediate landing sites. However, since the verb in these examples is tensed, we have to assume that the small clause contains a TP, as in Kush's structure above.

2.2 Platzack's proposal

Contrary to Kush et al. (2013), Platzack (2014) takes examples like (1) and (2) to be true instances of extraction from relative clauses. Specifically, he argues that there is a way to derive subject relative clauses in the mainland Scandinavian languages without moving an element to Spec-CP, thereby leaving an escape hatch in these constructions.

The structure he proposes for extraction out of Swedish restrictive relative clauses is the one in (6), which shows the intermediate step in the derivation of (5) where the extracted phrase *den teorin* is in Spec-CP of the relative clause, i.e. the escape hatch. Crossing out marks unpronounced phrases, and \neg means that a feature is unvalued and functions as a probe. EF stands for *edge feature*.

- (5) [Den teorin]_i känner jag en man som tror på _i.
 this theory know I a man who believes in
 'I know a man who believes in this theory.'



In Platzack's account, there is a relation between the relative head and a phrase in the left periphery of restrictive relative clauses, and Agree-relation. The relative head N has unvalued φ -features, and agrees with a relative pronoun or unpronounced phrase in Spec-CP, in German or English, for example. In Swedish on the other hand, φ -features from the subject in a relative clause can become accessible to the relative head without establishing an \bar{A} -chain. Platzack assumes the following: the relative complementizer *som* is merged as T, and when the subject agrees with T *som* gets the subject's φ -features.² T is then moved to C to value C's unvalued finiteness feature. Spec-CP and C are equidistant from N, so when N probes for φ -features, it finds the φ -features in C and agrees with them. The extracted phrase *den teorin* is moved to Spec-CP by the edge feature on C.

The crux of this proposal is that no \bar{A} -chain is needed to establish the relation between the head of the relative clause and the relative marker. The preconditions are that the language in question has movement from T to C, and that the relative marker is a complementizer. This leaves Spec-CP unused, hence available as an escape hatch.

3 Multiple \bar{A} -dependencies

A crucial point in both of the proposals presented in section 2 is that examples like (1), with extraction from a subject relative clause, involve only one \bar{A} -dependency. In this section, I show that in examples like (2) with extraction from a non-subject relative clause, there are two \bar{A} -dependencies, both derived by movement.

\bar{A} -movement is commonly characterized by (at least) the properties in (7).

²This is not represented in (6), which shows a later step in the derivation.

(7) \bar{A} -movement

- leaves a gap
- is apparently unbounded
- licenses parasitic gaps
- exhibits crossover effects
- exhibits connectivity effects
- respects islands

The characteristic that \bar{A} -movement respects islands deserves qualification. If it is the case that the Scandinavian languages provide counter-evidence to the universality of the Complex NP Constraint, of course we do not expect that constraint to be respected. Instead, to see whether a relation is a movement relation, we need to look at constraints that these languages usually do respect, such as the Coordinate Structure Constraint or the Sentential Subject Constraint.

The judgements reported here were collected in elicitation with one consultant in the spring of 2014. They are shared by several colleagues who have heard me present this paper.

3.1 \bar{A} -movement out of the relative clause

We have already seen that the fronted phrase in relative clause extraction is related to an empty position inside the relative clause. Example (8) shows that this relation appears to be unbounded: the phrase *en halloweenmask* is related to a gap inside a relative clause, which is embedded inside two *att*-clauses.

(8) *Apparent unboundedness*

[En halloweenmask]_i sa Olle [_{CP} att Zelda sa [_{CP} att hon känner någon_k [_{CP} som hon a Halloween mask said Olle that Zelda said that she knows someone REL she kan ge _{-k} _{-i}]]].
can give

‘Olle said that Zelda said that she knows someone who she could give a Halloween mask to.’

The relation between the fronted phrase and the gap can license a parasitic gap (9).³

(9) *Parasitic gap licensing*

Ett av problemen_i kommer jag verkligen inte på något_k jag kan göra _{-k} åt _{-i} rg [
one of problems-DEF come I really not on something I can do for
utan att förvärra _{-i} pg].
without to make worse

‘One of the problems, I cannot think of anything to do about without making it worse.’

The next diagnostic for \bar{A} -movement on the list in (7) is strong crossover, and (10) shows that the relation we are dealing with seems to induce strong crossover effects: (10b), where the phrase *Zelda* has crossed over the coreferential pronoun *hon*, is impossible.

³In the example, the parasitic gap is marked pg, and the real, licensing gap, rg.

(10) *Strong crossover effects*

- a. Zelda_i kan inget språk_k som vi kan tala _{-k} med henne_i.
 Zelda knows no language REL we can speak with her
 ‘Zelda knows no language that we can speak to her in.’
- b. *Zelda_i kan hon_i inget språk_k som vi kan tala _{-k} med _{-i}.
 Zelda knows she no language REL we can speak with

Lastly, connectivity effects of different kinds are often taken as evidence that a dependency relation is created by \bar{A} -movement. For example, if a phrase bears the case it would have been assigned as a complement of a verb in a subordinate clause, this could be taken as evidence that it has moved from that position. In (11), we see that a pronoun in the relevant structural configuration must have the case form it would have if it were inside the verb phrase.

(11) *Case connectivity*

- a. Dig_i vet jag inget språk_k de kan tala _{-k} med _{-i}.
 you-ACC know I no language they can speak with
 ‘I know of no language they can speak to you in.’
- b. *Du_i vet jag inget språk_k de kan tala _{-k} med _{-i}.
 you-NOM know I no language they can speak with

Crucially, as (11b) shows, the pronoun cannot be nominative. If the relation between the fronted phrase and the position inside the relative clause were not one of movement but involved an \bar{A} -bound pronominal – an idea that will be explored in the next section – the case connectivity would be hard to explain, as the default case in Swedish is nominative. This is shown by the case of pronouns in specificational copular clauses. Swedish differs from Danish in this regard (Mikkelsen 2005):

- (12) a. Hej, det är {jag / *mig}. [Swedish]
 hi it is I / me
 ‘Hi, it’s me.’
- b. Hej, det er {*jeg / mig}. [Danish]
 hi it is I / me
 ‘Hi, it’s me.’

(Mikkelsen 2005, p 174, example 9.24)

3.2 Silent pronouns?

Cinque (1990) proposes that some relations that appear to involve \bar{A} -movement should instead be analyzed as involving an empty pronoun (*pro*) that is \bar{A} -bound by an operator. One of the cases he treats this way is apparent island-violating movement. In this section I will show that this type of analysis is not tenable for Swedish relative clause extraction.

Invoking a particular notion of ‘referentiality’, Cinque argues that only what he calls referential DPs can participate in these apparently island-violating dependencies. ‘Non-referential’ DPs like *how many weeks* cannot. It is not entirely clear whether the phrases that are non-referential in Cinque’s sense constitute a natural semantic class, but what ties the cases together is the fact that the ‘non-referential’ DPs cannot bind a pronoun (at least not) in Italian.

An idea, then, if we wanted to try to salvage the claim that relative clauses are universally strong islands, would be to try to argue that the instances of island-violating movement that we have seen above are actually not movement at all, but involve a silent pronoun in the apparent gap site. This approach quickly runs into trouble when applied to Swedish, however.

First, several types of phrases other than DPs can be extracted both from subject and object relative clauses. Examples (13)–(17) show extraction of an AP, a PP, and different types of adverbial phrases introduced by *så*.⁴

- (13) *Illgrönt*_i har jag nog ingenting_k som jag vill måla _{-k -i} .
 piercing green have I PRT nothing REL I want paint
 ‘I probably don’t have anything that I want to paint piercing green.’

- (14) [*Till henne*]_i vet jag ingenting jag kan ge _{-k -i} .
 to her know I nothing I can give
 ‘I don’t know of anything I can give to her.’

- (15) [*Så fint*]_i känner jag ingen_k som _{-k} kan sjunga _{-i} .
 that nice know I no one REL can sing
 ‘I don’t know anyone who can sing that well.’

- (16) [*Så många veckor*]_i vet jag nog ingen_k som jag skulle vilja åka på semester med _{-k -i} .
 that many weeks know I PRT no one REL I should want go on vacation with
 ‘I don’t know of anyone I would like to go on a vacation with for that many weeks.’

- (17) [*Så sent*]_i vet jag ingen_k som jag kan ringa till _{-k -i} .
 that late know I no one REL I can call to
 ‘I don’t know of anyone that I can call that late.’

If we were to maintain that there is a silent \bar{A} -bound *pro* inside the relative clauses here, we would have to enrich the grammar with silent *pro*-forms of all these categories.

⁴At the Grammar seminar in Lund, Gunlög Josefsson pointed out that (13) also has a reading where *illgrönt* originates as the head N following *ingenting*.

Recalling Cinque's connection between island-violating movement and ability to bind a pronoun, data from left dislocation are relevant. In Swedish left dislocation, a pronoun is bound by a hanging topic preceding Spec-CP, as (18) illustrates.

- (18) [[Min kusin Hanna]_i, [CP jag gillar verkligen henne_i.]]
 my cousin Hanna I like really her
 'My cousin Hanna, I really like her.'

If an account in the spirit of Cinque were right, we might expect the extracted phrases in (14)–(17) to be able to function as hanging topics in left dislocation constructions. Swedish does have some pro-forms that languages like English and Italian lack (Engdahl 2001), but there are no overt simple pro-forms for phrases like *så sent*, *så fint*, and *så många veckor*. There is a pro-form, *det*, which can be used both for entities and predicates of various types, which could be used in left dislocation with phrases like *illgrönt* in (13). With the extracted phrases in (14) and (15)–(17), this is not possible. Resuming the adverbial phrases with other pronouns, like temporal *då* or manner *så* is not possible either.⁵

- (19) ? Illgrönt_i, jag har nog ingenting_k som jag vill måla _k det_i .
 piercing green I have PRT nothing REL I want paint that
 'I probably don't have anything that I want to paint piercing green.'
- (20) * [Till henne]_i, jag vet ingenting_k jag kan ge _k dit_i.
 to her I know nothing I can give there
- (21) * [Så fint]_i, jag känner ingen_k som _k kan sjunga det_i/så_i;
 that nice I know no one REL can sing that/like that
- (22) * [Så många veckor]_i, jag vet nog ingen_k som jag skulle vilja åka på semester med _k
 that many weeks I know PRT no one REL I should want go on vacation with
 det_i/då_i .
 that/then
- (23) * [Så sent]_i, jag vet ingen_k som jag kan ringa till _k det_i/då_i .
 that late I know no one REL I can call to that/then

This type of left dislocation, although not ungrammatical, is not that common in Swedish. Instead the co-referent pronoun tends to be fronted, as shown in (24).⁶

- (24) Lisa_i, henne_i vet jag ingenting_k jag kan ge _k till _i.
 Lisa her know I nothing I can give to
 'I don't know anything I can give to her.'

This type is quite common; see Engdahl & Lindahl (2014) for examples from the Nordic Dialect Corpus.

⁵*dit* in (20) is a directional pro-form.

⁶See Andersson (1982), who calls this 'topic movement'.

Fronting the pronoun makes (19) better, as in (25), but it does not improve the other examples (26)–(29).⁷

- (25) Illgrönt_i, det_i har jag nog ingenting_k som jag vill måla _{-k -i} .
 piercing green that have I PRT nothing REL I want paint
 ‘I probably don’t have anything that I want to paint piercing green.’
- (26) * [Till henne]_i, dit_i vet jag ingenting_k jag kan ge _{-k -i} .
 to her that know I nothing I can give
- (27) * [Så fint]_i, det_i/så_i känner jag ingen_k som _{-k} kan sjunga
 that nice that know I no one REL can sing
- (28) * [Så många veckor]_i, det_i/då_i vet jag nog ingen_k som jag skulle vilja åka på
 that many weeks that know I probably no one REL I should want go on
 semester med _{-k} .
 vacation with
- (29) * [Så sent]_i, det_i/då_i vet jag ingen_k som jag kan ringa till _{-k -i} .
 that late that/then know I no one REL I can call to

Clearly there is not a perfect correlation between the phrases that can be extracted from relative clauses and the phrases that can occur in a left dislocation construction in Swedish. These examples also reveal something else. As we saw above, when the pronoun is not fronted in hanging topic left dislocation, the subject moves to Spec-CP. This provides an additional argument that extraction from relative clauses involves \bar{A} -movement of the phrase that is extracted to Spec-CP. We see this in (30) and (31). When the extracted phrase is in Spec-CP, as in (30), there has to be a gap in the relative clause, and a resumptive pronoun is ungrammatical. The subject stays in Spec-TP. When the extracted phrase is a hanging topic and the subject moves to Spec-CP, as in (31), a gap is ungrammatical.

- (30) a. [Den sortens halloweenmask]_i känner jag ingen_k som _{-k} har _{-i} (*den_i).
 that kind-DEF-GEN Halloween mask-DEF know I no one REL has it
 ‘I don’t know anyone who has that kind of Halloween mask.’
- b. [Den sortens halloweenmask]_i känner jag ingen_k som jag kan ge _{-k -i} (*den_i).
 that kind-DEF-GEN Halloween mask know I no one REL I can give it
 ‘I don’t know anyone who I can give that kind of Halloween mask to.’
- (31) a. * [Den sortens halloweenmask]_i jag känner ingen_k som _{-k} har _{-i}.
 that kind-DEF-GEN Halloween mask-DEF I know no one REL has
- b. * [Den sortens halloweenmask]_i jag känner ingen_k som jag kan ge _{-k -i}.
 that kind-DEF-GEN Halloween mask I know no one REL I can give

⁷There is some variation regarding the acceptability of the examples in (25)–(29). Some people do not like (25) at all, even with the bound pronoun fronted, and some people have a grammatical version of the strings in (27)–(29). When they are grammatical, these strings probably involve an expletive *det* rather than the anaphor. There is also an interpretation of (29) where *så sent* introduces a point in time, which makes it slightly better.

Another type of evidence against a silent pronoun analysis of extraction from relative clauses is provided by sentences that we might analyze as *pro*-drop. It could be argued that Swedish has a silent *pro* in examples like (32a).⁸ In these cases it is always possible to replace the silent *pro* with an overt pronoun (32b). The example is from Platzack (2011, p. 59–60) but with my glosses.

- (32) a. [_{CP} *pro* funderade [_{TP} jag faktiskt [_{VP} aldrig [_{VP} jag funderade på *pro*]]]]
 pondered I actually never on
 ‘I never thought about that, actually.’
- b. Det funderade jag faktiskt aldrig på.
 that/it pondered I actually never on
 ‘I never thought about that, actually.’
- c. *Jag funderade faktiskt aldrig på.
 I pondered actually never on
- d. *Funderade jag faktiskt aldrig.
 pondered I actually never
- e. På det funderade jag faktiskt aldrig.
 on that/it pondered I actually never
 ‘I never thought about that actually.’

Notably, it is not possible to drop a DP that is not in clause initial position (32c), and it is not possible to drop a preposition along with a DP (32d), even though the whole PP can be fronted (32e). But extraction of a PP out of a relative clause is possible, as we saw in example (14) above.

All in all, an analysis in terms of silent resumptive pronouns is untenable. To maintain it, we would have to adopt several types of silent *pro*-forms for which there is no independent evidence, and which for some unexplained reason would not be possible to use in examples like (32d), where there is no island involved. These *pro*-forms would also pattern differently than the *pro* that we *do* see some evidence for, in that they cannot alternate with an overt pronoun or phrase. In effect, we would have to stipulate this type of object in our grammar only for these instances where it would serve the purpose to save a purportedly universal island constraint.

3.3 \bar{A} -movement inside the relative clause

We have now established that the relation between the extracted phrase and the position inside the relative clause is an \bar{A} -movement relation. But this is actually not disputed by either Kush et al. (2013) or Platzack (2014). The two accounts are put forward with extraction from subject relative clauses in mind and aim to explain why movement out of such structures does not violate universal constraints. But here I am looking at non-subject relative clauses. However,

⁸The phenomenon is usually called topic drop (see Mörnjö 2002 for examples from spoken Swedish).

the more general idea that extraction from relative clauses only involves one \bar{A} -movement dependency should be investigated. Is there any evidence that there is in fact \bar{A} -movement inside non-subject relative clauses in extraction constructions?

Evidence for movement inside a relative clause can plausibly be found in facts about parasitic gap licensing, weak crossover phenomena and in seeing whether relativization respects island constraints that are normally obeyed in the language.

3.3.1 Parasitic gap licensing

Relativization in Swedish licenses parasitic gaps, as we can see in (33), a sign that relative clauses indeed involve an \bar{A} -dependency.

- (33) Vi köpte bönor på konservburk, du vet sådana_i som man kan äta _{-i} rg utan att koka
 we bought beans on can you know such REL one can eat without to cook
_{-i} pg.

‘We bought canned beans, you know the kind you can eat without cooking.’

The real gap after *äta* in (33), licenses a parasitic gap after *koka* in the adjunct. Consider (34):

- (34) Jag vill hitta någon_i som jag kan skrämma _{-i} rg med den där halloweenmasken
 I want find someone REL I can scare with the there Halloween mask-DEF
 utan att ge _{-i} pg en alltför stor chock.
 without INF give a too big shock
 ‘I want to find someone who I can scare with that Halloween mask without giving them too big of a shock.’

This is a sentence with a non-subject relative clause, quite like the ones I have been discussing in this article, but with no extraction from the relative clause. The relative clause dependency licenses a parasitic gap, as expected. In (35) we see that crucially, a parasitic gap is licensed by the relative clause dependency even with extraction of another phrase out of the relative clause.

- (35) [Den där halloweenmasken]_i vill jag hitta någon_k som jag kan skrämma _{-k} rg med _{-i}
 the there Halloween mask-DEF I want find someone REL I can scare with
 utan att ge _{-k} pg en alltför stor chock.
 without INF give a too big shock
 ‘I want to find someone who I can scare with that Halloween mask without giving them too big of a shock.’

This last piece of evidence is especially interesting, since it shows that the relative clauses in the examples we are investigating here – i.e. relative clauses from which a phrase has been extracted – are plausibly formed in the same way as regular *som*-relative clauses. There is nothing about extraction of a phrase from the relative clause that excludes parasitic gap licensing or about parasitic gap licensing that makes extraction of another phrase from the relative clause impossible.

Ideally, we would like to be able to use the parasitic gap test to investigate whether Platzack’s proposal – that there is no \bar{A} -movement inside the subject relative clause – is correct. Unfortunately, this is not possible since in a subject relative clause, the real gap would

c-command the parasitic gap, which is ruled out in general (Engdahl 1983, p. 22). In (36) we see an instance of this. The real gap created by the relativization of a subject c-commands the parasitic gap in the adjunct, and the example is ungrammatical.

- (36) * Det finns många som _{rg} talar det språket utan att någon har undervisat
 EXPL exist many REL speak the language-DEF without that someone have taught
 -pg

Intended meaning: ‘There are many people who speak that language without anyone having taught it to them.’

3.3.2 Weak crossover

In Swedish, relativization induces weak crossover effects. The examples below are from Engdahl (1985) who shows that relativization patterns with question formation in this respect, unlike in English, where question formation but not relativization results in weak crossover.

- (37) a. * mannen_i som_i hans_i mor tyckte bäst om t_i
 the-man that his mother liked best
 ‘the man who his mother liked best’
 b. * Vem_i tyckte hans_i mor bäst om t_i
 who liked his mother best
 ‘Who did his mother like best?’ (Engdahl 1985, p. 9, example 13)

Again, the construction we are concerned with patterns with other relative clauses, even when another phrase is extracted (38)–(39).

- (38) * Jag känner en tjej_i som hennes_i syster skrämde $_i$ med den där halloweenmasken.
 I know a guy REL her sister scared with the there Halloween mask-DEF
 (39) * [Den där halloweenmasken]_i känner jag en tjej_k som hennes_k syster skrämde $_k$ med $_i$.
 the there Halloween mask-DEF know I a girl REL her sister scared with

Just like the parasitic gap test in the previous section, weak crossover effects indicate that relative clauses are formed by \bar{A} -movement, even when phrases are extracted from them.

3.3.3 Island effects

Sentential subjects and coordinate structures are syntactic islands in Swedish, and relativization of a position inside of these structures results in ungrammaticality as well, as demonstrated by (40)–(42).

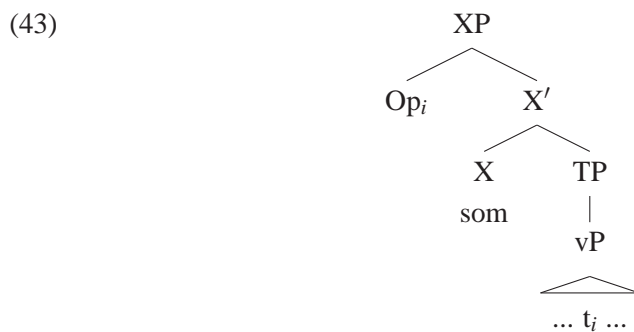
- (40) * Den bil_i som [_{CP} att Maja köpte $_i$] var oväntat hade inte dragkrok.
 the car REL that Maja bought was unexpected had NEG towing hook
 (41) * Jag fick ett tält_i som Maja hade köpt [_{DP} en röd cykel och $_i$].
 I got a tent REL Maja had bought a red bike and

- (42) * Jag fick det tält_i som [_{DP} den röda cykeln och __i] hade varit mina föräldrars tidigare.
 I got the tent REL the red bike-DEF and had been my parent's earlier

To sum up, all of the diagnostics for movement inside of the relative clause point towards there being an \bar{A} -movement relation. Sections 3.1 and 3.2 established that the relation between the extracted phrase and the position inside the relative clause is also created via \bar{A} -movement. In the next section, I will discuss the consequences of this new data for the proposals put forth by Kush et al. (2013) and Platzack (2014).

3.4 Consequences for the previous proposals

A precondition for the account provided by Kush et al. (2013) is that only subject relative clauses allow extraction, as small clauses are ‘subject oriented’. We have seen in section 3.1 that this precondition is not met. In fact, it is hard to see how to extend the small clause analysis to non-subject relative clauses without ending up with a structure that is indistinguishable from that of a non-subject relative clause. Recall that the proposed small clause structure needs to involve a TP, since it is tensed. In section 3.3 we saw that forming the relative clause in cases of extraction from non-subject relatives involves \bar{A} -movement. But if we have a clause containing a TP, with \bar{A} -movement of a silent element (presumably to the specifier of *som*), this looks remarkably like a relative clause, as we see in (43).⁹



Platzack, on the other hand, acknowledges that it is possible to extract from non-subject relative clauses. Since this is not predicted by his account of extraction from subject relative clauses, he proposes that extraction from non-subject relative clauses is made possible by the Principle of Minimal Compliance (see Richards 1998). In deriving a sentence like (44), the indirect object *Lisa* moves to Spec-CP. This movement is licit, and the PMC then allows the direct object to move to the C-domain as well.

- (44) Lisa_i vet jag tre saker som han vill ge t_i
 Lisa know I three things that he wants give (Platzack 2014, example 25)

⁹There are other reasons not to adopt the Small Clause Hypothesis, for example the possibility of extracting from relative clauses inside DPs embedded under non-small clause selecting verbs like *träffa* ‘meet’. The restriction to small clause selecting verbs that Kush et al. 2013 argue for does not actually hold when one takes a wider range of verbs into account (see Müller submitted).

Importantly, Platzack derives extraction from non-subject relatives in a way that has no relation to his account of extraction from subject relatives. In the following section, I will argue that this has certain disadvantages.

4 An argument from learnability

Section 3 shows that extraction from non-subject relative clauses is possible in Swedish, and that the element undergoing extraction may belong to any of several categories. I have furthermore argued that it involves two \bar{A} -movement dependencies: one for relativization itself, and one for extraction from the resulting structure. This means that Swedish relative clauses are not strong islands, a fact which has repercussions for theories of islandhood. If relative clauses are not strong islands in all languages, it needs to be possible for a speaker of a specific language to find out whether a relative clause constitutes an island in that language. Further research is needed to determine how this is possible. But the mere fact that speakers are able to arrive at the conclusion that extraction from non-subject relative clauses is possible can give us a clue about the structure of restrictive relative clauses that these speakers must have available.

Extraction from relative clauses is rather uncommon in spontaneous speech and writing. I have gathered examples I have come across for around three years, and have a collection of a few hundred by now. Among these, only one involves extraction from a non-subject relative clause (45). The example is from a discussion in a web forum about bags for cameras. The commenter is describing a specific bag that he has experience with. I have translated the immediately preceding context to English.

(45) *It fits well, but it's not very well ventilated. I easily get a bit sweaty on my back.*

Fast det_i har jag inte hittat någon ryggsäck_k [jag inte blir _{-i} av _{-k}].
 but that have I not found some backpack I not become of

'But I haven't found any backpack that I don't get sweaty from.'¹⁰

The collection of these examples has not been controlled, meaning that it is not possible to make reliable estimations about how often extraction from non-subject relative clauses occur compared to extraction from subject relative clauses. However, I hear or read examples with extraction from subject relative clauses at least a few times a week, whereas extraction from non-subject relatives is clearly much more rare.

This raises two questions. First, why is extraction from non-subject relative clauses so rare, if it is grammatical? Second, how can speakers learn that extraction from non-subject relative clauses is possible at all, if it is not in the input?

The first question most likely has more than one answer. Research on processing of relative clauses and questions shows that it is easier to process subject dependencies than object dependencies, at least in Germanic languages such as English and Dutch (see Kluender 2004 and references therein). Since filler-gap dependencies are taxing for processing in general, it is not surprising that the combination should be uncommon. Furthermore, since Swedish exhibits

¹⁰<http://www.sweclockers.com/forum/103-foto-och-video/776107-kameravaska/> (2008)

that-trace effects, extracting the subject from a non-subject relative clause results in ungrammaticality. This means that for extraction from a non-subject relative clause to be possible, there need to be at least two other phrases in the clause, besides the subject, both of which need to be extractable. This greatly reduces the number of non-subject relative clauses where extraction is even possible. Adding to this the requirements on the information states of the participants for the extraction strategy to be used, it is to be expected that such sentences are rare.

But if there are almost no instances of extraction from non-subject relative clauses in the input, and some speakers still seem to deduce that it is possible, what do they deduce this from? I suggest that that the possibility of extraction from subject relatives is precisely what is at play here. Speakers encounter these examples, and from this they can conclude that extraction from other kinds of relative clauses is possible too. This must mean that these speakers derive subject relative clauses in a way parallel to non-subject relative clauses. If what makes extraction possible were connected to something unique to subject relatives, speakers would not be able to generalize the pattern to non-subject relatives.

If this argument is correct, then both Kush et al. (2013) and Platzack (2014) fall short. Since both of the accounts are designed to allow for extraction from (apparent) subject relatives but not from non-subject relatives, they have no way of accounting for the fact that speakers can deduce from these cases that extraction from non-subject relative clauses is possible.

5 Towards a unified analysis

In this section I discuss some options for a unified analysis of extraction from subject and non-subject relative clauses. Since one of the goals of this analysis is to relate the facts about Scandinavian extraction to current assumptions about locality, I will frame the discussion in terms of feature-driven movement obeying the Phase Impenetrability Condition (PIC) (46).

- (46) **Phase Impenetrability Condition** The domain of H is not accessible to operations outside HP; only H and its *edge* are accessible to such operations (Chomsky 2001, p. 13).

I do not mean to argue that that the Phase Impenetrability Condition is necessarily the right way to condition locality. My aim is to show what kind of variation grammars have to allow for, given the data I have presented here, and to make clear what the consequences for a PIC-based account are.

I will end up essentially adopting the account in Platzack (2000, 2014) for the attachment site and structure of the relative complex, adding to the analysis a new structure for the relative CP.

5.1 The structure of the relative complex

Platzack (2014) assumes restrictive relative clauses to be complements of N, and the relation between the head and the relative marker to be mediated by an Agree-relation. A theory-internal motivation for the complement-of-N analysis is given in Platzack (2000): aside from Kayne's

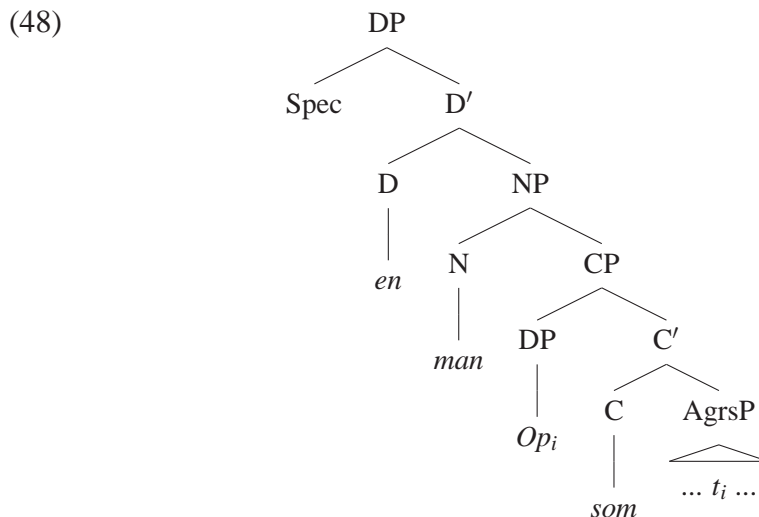
complement-of-D analysis it is the only structure for relative clauses that Kayne's (1994) anti-symmetric phrase structure permits.

A more traditional view is that relative clauses are adjuncts (either to NP or DP). Against this background, a complement-of-N analysis of relative clauses in the Scandinavian languages is also interesting in relation to proposals about island constraints in the tradition of Huang's (1982) Condition on Extraction Domain (CED), where adjuncts and subjects are islands. Unfortunately for this general approach, grammatical extraction from adjuncts is possible in certain cases in Swedish. The *Swedish Academy Grammar* (SAG) gives (47) as an example that some speakers accept in informal speech (the glosses and translation are mine).¹¹

- (47) *Den här duken* blir jag arg om du spiller på [-].
 the here tablecloth become I angry if you spill on
 'I'll get angry if you spill on this tablecloth.' (SAG, vol. 4. p. 424)

This means that the CED fails to capture the Swedish extraction facts, which in turn means we cannot use it as an argument for relative clauses being complements rather than adjuncts.

Semantically, restrictive relative clauses are abstract predicates, and function as intersective modifiers to the nominal head. This in itself does not commit us to any particular analysis of their syntax, but since the data I have collected for this article does not bear on the question of the attachment of the relative clause, I will simply adopt Platzack's proposal that CP is a complement of N. Now, if DP is a phase, we need to explain how a phrase moving out of the relative clause can escape it. This is explained on Platzack's account (2000, p. 275). Restrictive relative clauses have the structure in (48).



Notably, there is nothing occupying Spec-DP, which means that it is available as an escape hatch. The question now is how phrases get to be accessible to move to Spec-DP.

¹¹[-] marks the gap in the notation in the *Swedish Academy Grammar*.

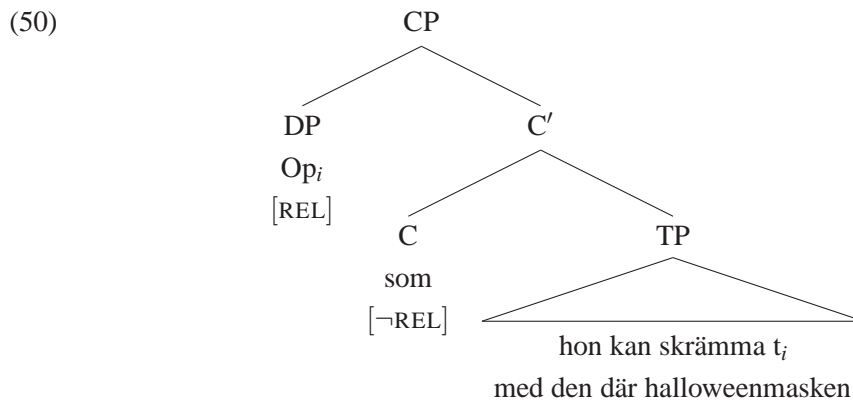
5.2 The structure of the relative CP

The facts from section 3 narrow down the hypothesis space for the structure of the relative CP. There is a relation inside the relative clause which licenses parasitic gaps and induces weak crossover, and it respects the Coordinate Structure Constraint and the Sentential Subject constraint. If CP is a phase, and the Phase Impenetrability Condition holds, then only C and the edge of CP should be accessible outside of CP. Say that we want to derive (49).

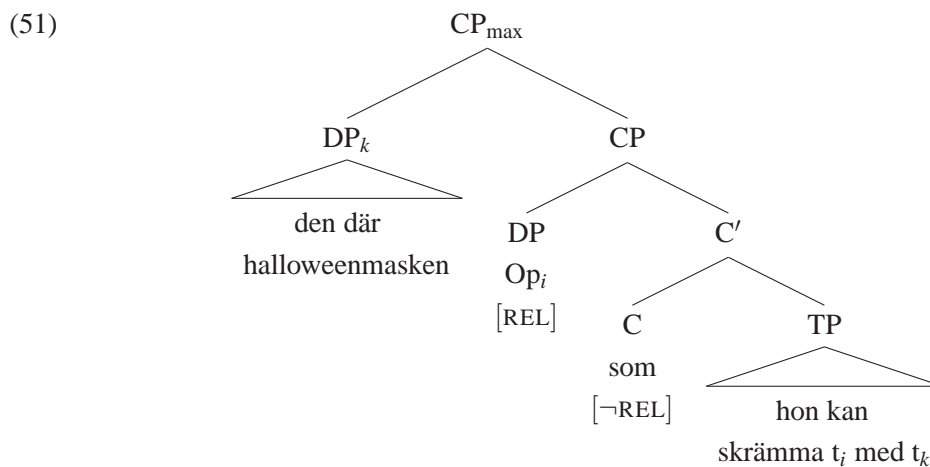
- (49) [Den där halloweenmasken]_i vill Edith hitta någon_k som hon kan skrämna _{-k} med
 the there Halloween mask-DEF wants Edith find someone REL she can scare with
 -i.

‘Edith wants to find someone that she can scare with that Halloween mask.’

After building the TP, C is merged.¹² C has an unvalued relative feature with an EPP. This attracts the relative operator to Spec-CP. We have the structure in (50).



Now we need the DP *den där halloweenmasken* to be accessible from outside of CP, and this means that it too must move to the phase edge, resulting in the structure in (51).



¹²Whether *som* is merged as T or C is not important for the purposes of the paper, but I will assume it is merged as a C here, for ease of exposition. I will also disregard the phasehood of vP. If vP is a phase, it must be possible to move both of the phrases involved in extraction out of vP.

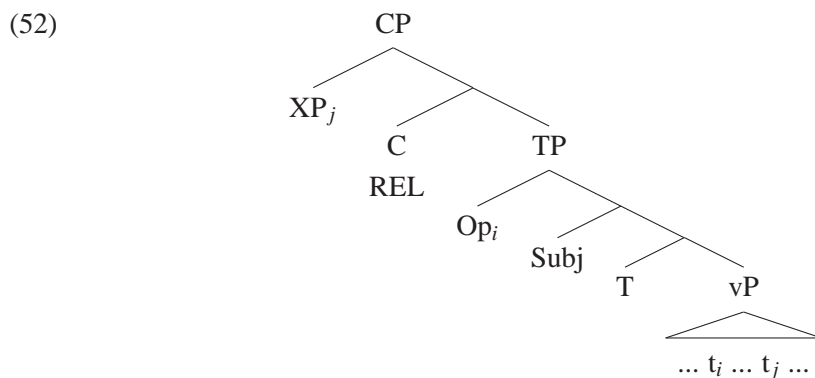
In (51), the phrase has moved to an outer specifier of CP, above the relative operator. The core of restrictive relative clauses in Swedish is just like relative clauses in English. The difference is the option to move an extra phrase to an outer specifier.

If speakers can in fact deduce that extraction from non-subject relative clauses is licit from the possibility to extract from subject relative clauses, as I argued in section 4, this indicates structural parallelism. Deriving a subject relative clause, then, must also involve moving a relative operator to Spec-CP, and extracted phrases moving through an outer specifier of CP. The assumption would be that encountering sentences involving extraction from subject relative clauses, speakers learn that relative C must be able to host more than one specifier. The parallel mode of derivation allows this to be a generalization about relative C in all restrictive relative clauses.

This analysis may seem undesirable. After all, a strong motivation for the two previous accounts is that they try to give a structural explanation for why the mainland Scandinavian languages, but no others, allow relative clause extraction. According to the proposal I present here, we have no clear answer to this question. We seem to be forced to say that in acquiring a mainland Scandinavian language, it is possible to learn that relative clauses can have two specifiers, whereas in acquiring languages like English, this does not happen. Exactly why this is the case is an important question, and the facts from Swedish raise questions about the explanatory value of a purely phase-based account of the islandhood of relative clauses in other languages.

However, as I have shown in previous sections, the proposals put forth by Kush et al. (2013) and Platzack (2014) are not consistent with the data. If we want to maintain the PIC and other standard assumptions, i.e. that CP is a phase and that \bar{A} -movement is successive cyclic, we are forced to assume this structure for non-subject relative clauses. Otherwise, we would have to accept the possibility of non-successive cyclic \bar{A} -movement, or movement of the relative operator to some position other than Spec-CP.

In fact there is another structure that is consistent with the presented data, where relativization involves \bar{A} -movement not to Spec-CP but to an outer specifier of TP (52).



In a non-subject relative clause the relative operator would move across the subject, and this would be what caused the weak crossover effect. The moving operator would cause the Coordinate Structure Constraint violation and the Sentential Subject Constraint violation regardless of

whether it moved here or to Spec-CP, and we would have to simply stipulate that this is a type of \bar{A} -movement and, as such, licenses parasitic gaps. Since we have no independent motivation for the existence of two specifiers of TP in Swedish, I will not pursue this alternative here.

Some further support for the idea that extraction involves extra specifiers comes from embedded questions, which also permit extraction (53).

- (53) [Det där vinet]_k minns jag inte vem_i som _{-i} tog med _{-k} till festen.
 the there wine remember I not who C took with to party-DEF
 ‘I don’t remember who brought that wine to the party.’

See Engdahl (1986) for an account of extraction from embedded questions, and Engdahl (1980) for an argument about the relevance of Subjacency similar in spirit to the one made here about the PIC.

5.3 Which phrases can move?

So far, we have not been concerned with what types of phrases *cannot* be extracted from relative clauses. While Swedish relative clauses are not strong islands, they do not permit extraction of just any phrase. For example, expletive objects cannot be extracted (54).

- (54) a. Jag känner många_i som _{-i} bara tog det lugnt i somras.
 I know many REL only took EXPL.OBJ calm in summer
 ‘I know many people who just took it easy this summer.’
- b. *Det_k känner jag många_i som _{-i} bara tog _{-k} lugnt i somras.
 EXPL.OBJ know I many REL just took calm in summer

Engdahl (1997) and Lindahl (2010) investigate naturally occurring examples of extraction from relative clauses, and conclude that the moved phrase is most often one of a few different types of topics (see Engdahl & Lindahl 2014). The examples in this article have also all involved topics, and were presented to the consultant in a context where the fronted phrase would easily be interpreted in that way. But questioning, clefting and relativization of a position inside a relative clause is also possible.

(55) *Question formation*

[Vilken halloweenmask]_i vill Edith hitta någon_k som hon kan skrämma _{-k} med _{-i}?
 which Halloween mask wants Edith find someone REL she can scare with

‘Which Halloween mask does Edith want to find someone that she can scare with?’

(56) *Cleft formation*

Det är [den där halloweenmasken]_i som Edith vill hitta någon_k som hon kan skrämma
 it is the there Halloween mask-DEF REL Edith wants find someone REL she can scare
_{-k} med _{-i}.
 with

‘Edith wants to find someone that she can scare with that Halloween mask.’

(57) *Relativization*

Jag såg [en halloweenmask]_i som Edith vill hitta någon_k som hon kan skrämman __k med __i?
 I saw a Halloween mask REL Edith wants find someone REL she can scare with

‘I saw a Halloween mask that Edith wants to find someone that she can scare with.’

In questions, there is a further restriction. Out of context, an example like (58) probably sounds strange, but given a context where we are talking about a set of people scaring other people with a set of things, it seems fine.

(58) Vad_i vill Edith hitta någon_k som hon kan skrämman __k med __i?
 what wants Edith find someone REL she can scare with

‘What does Edith want to find someone that she can scare with?’

This is reminiscent of Pesetsky’s notion of D-linking (1987). Extraction of *vilken*-phrases, which are inherently D-linked, is also grammatical (59).

(59) [Vilken halloweenmask]_i vill Edith hitta någon_k som hon kan skrämman __k med __i?
 which halloween mask wants Edith find someone REL she can scare with

‘Which halloween mask does Edith want to find someone that she can scare with?’

Note also the effect of clefting which makes it more plausible that the questioned item is D-linked (60).

(60) Vad_i var det Edith ville hitta någon_k som hon kan skrämman __k med __i?
 What was EXPL Edith wanted find someone REL she can scare with

‘What was it that Edith wanted to find someone that she can scare with?’

Some adjuncts can also be questioned, in a plausible context. If a speaker A asks the question in (61a), a speaker B can reply with (61b), where an adjunct inside the relative clause is questioned.

(61) a. A: Hur sent kan vi gå och handla?
 how late can we go and shop

‘How late can we go to the store?’

b. B: Hm ... [hur sent]_i vet du någonstans_k man kan köpa cigaretter __k __i?
 hm ... how late know you somewhere one can get cigarettes

‘What is the latest time such that you know of a place that sells cigarettes that is open at that time?’

Given this restricted overview, the types of phrases that can be extracted all seem to relate to the semantics/pragmatics of the discourse context. Except for the relative operator, all of the operations that result in extraction from a relative clause could be argued to be driven by a feature related to the discourse: topics have a topic feature and the pivot of a cleft most likely carries a focus feature. The difference between well formed and ill formed questions of positions inside relative clauses is also related to the discourse context, as we have seen. If we could argue that the relative operator bears some discourse related feature, we would have

something that looks like a natural class of phrases that can be extracted. A possibility may be that the operator bears a topic feature. In Lexical Functional Grammar, the relative pronoun is standardly assumed to have a topic function (though see Falk (2010) for a critique of this view). To determine whether this is a viable path, more investigation into the properties of extractable phrases is needed.

Assuming for now that these features do form a natural class of *discourse-related* features, relative C in the mainland Scandinavian languages would have an unvalued DR-feature, attracting any phrase with such a feature to an outer specifier, where it would be available to later steps in the derivation as in (62).

$$(62) \quad [_{CP_1} \text{XP}_i \dots [_{DP} \text{XP}_i \dots [_{CP_2} \text{XP}_i \text{Op}_k [_{C'} \text{som} [_{TP} \dots \text{Op}_k \dots \text{XP}_i \dots]]]]]$$

$\begin{array}{ccccccc}
[DR] & & [DR] & & [DR] & [Rel] & [=Rel, =DR] & & [Rel] & & [DR] \\
\uparrow & & \uparrow & & \uparrow & \uparrow & \uparrow & & \uparrow & & \uparrow \\
\hline
& & & & & & & & & &
\end{array}$

This is an abstract skeleton, covering the data in this article. In forming a relative clause, first, the operator Op_k moves to Spec- CP_2 , creating the core of the relative clause. The extracted phrase XP_i then moves to the outer specifier of CP_2 to satisfy the discourse-related feature on relative C. After moving through the outer Spec- CP_2 , the extracted phrase escapes the DP via Spec- DP , and moves to its final landing site, in Spec- CP_1 .

While evaluating the proposed structure for relative clauses, we should note that it predicts that we should only ever be able to extract one phrase from a relative clause. Engdahl (1980), however, argues based on constructed data that more than one phrase may be extracted. Thus, there is in principle no motivation for limiting the number of available specifiers. This would involve assuming that the unvalued discourse-related feature on relative C is “insatiable”. In that case, Swedish relative C would essentially be what Bošcović (1999) calls an ‘Attract all F element’. Such an analysis actually also solves a problem. If the unvalued DR-feature is satisfied by any phrase bearing a feature belonging to that class, and we are assuming that the relative operator bears some DR-feature, it would seem that the movement of just the relative operator should satisfy both of the unvalued features on C. If the unvalued discourse-related feature is “insatiable”, this is avoided.

Notably, in Swedish, the extra CP-specifiers can only function as escape hatch positions in a derivation. They cannot be pronounced as intermediate specifiers. This holds for both relative clauses and embedded questions. This makes Swedish different from languages like Bulgarian, where it is possible to pronounce multiple Spec-CPs. A way to account for this would be to add a condition on multiple Spec-CPs, active at PF (cf. Rudin 1988).

6 Concluding remarks

In this paper I have argued that extraction from non-subject relative clauses involves two \bar{A} -movement dependencies. These dependencies exhibit several properties characteristic of movement, e.g. strong and weak crossover, the licensing of parasitic gaps, and case connectivity. The data do not lend themselves to an analysis in terms of silent pronouns. This means that relative clauses are not always strong islands.

In addition, considerations of learnability support the assumption that extraction from subject and non-subject relative clauses must be derived by the same mechanism. I have proposed that what is special about the mainland Scandinavian languages is that they permit multiple specifiers of relative complementizers. The proposal is based on some common assumptions about locality and feature-driven movement, namely the Phase Impenetrability Condition, and successive cyclic movement through Spec-CP. If we are to maintain these assumptions, we are forced to assume something like what I suggest here, unless we can identify something else about the syntax of relative clauses in the mainland Scandinavian languages that sets them apart from relative clauses in other languages.

Clearly, more research is needed about which types of phrases can and cannot be extracted from relative clauses. A careful study of the discourse function and semantics of the fronted phrases is necessary in order to find out exactly what restricts extraction. So far, there is very little research about relative clause extraction in spontaneous discourse, and data from such research would be valuable in this investigation.

Since relative clauses are not strong islands in Swedish, an interesting question is to what extent they are similar to constituents that are usually analyzed as weak islands. Some accounts of weak islands (Szabolcsi 2006) propose that they are an entirely semantic phenomenon, and it would be interesting to see to what extent such an account of relative clause extraction is viable. Specifically, Szabolcsi (2006, p. 515) proposes that phrases that can be extracted from weak islands “range over discrete individuals”, while phrases that cannot “denote in a partially ordered domain”.¹³ It would seem that the grammatical Swedish extractions of adverbial phrases in (21)–(23) and (61) go against this proposal, but more detailed investigations are required to determine whether we ultimately need to state the relevant generalizations in the semantics, the syntax, or both, and in what way role the discourse context plays. This type of study would further our understanding of what islandhood really is.

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¹³This is similar in spirit to Cinque’s notion of ‘referentiality’, although more explicit.

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