

ON *SOM* IN SCANDINAVIAN LONG-DISTANCE A-BAR DEPENDENCIES*

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Abstract: *This paper investigates previously undiscussed data regarding the distribution of subordinating elements in the left periphery of (long-distance) argument A-bar dependencies in Scandinavian, specifically the distribution of som in restrictive relative clauses and embedded wh-questions. We show that traditional analyses of som in Mainland Scandinavian – which take it to be an expletive-like element that satisfies the EPP and enables subject extraction – cannot adequately account for the distribution of som in long-distance A-bar dependencies. We sketch the outlines of a new analysis according to which som is a complementizer marking A-bar dependencies, and its distribution is sensitive to the interpretability of the features on the CP phase-head(s).*

Keywords: *Scandinavian, (morpho)syntax, (long-distance) A-bar dependencies, complementizer system, subject/object asymmetries*

1. Introduction

This paper presents a comparative study of the distribution of *som* in the left periphery of (long-distance) argument A-bar dependencies in Mainland Scandinavian¹. On the basis of new empirical data, we show that previous analyses of the distribution of *som* in short A-bar dependencies in Scandinavian, as well as in other comparable language systems, cannot adequately explain the distribution of *som* in long-distance A-bar dependencies. We sketch

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¹ In discussing Mainland Scandinavian, we refer mostly to Norwegian and Swedish (varieties), whereas we address Danish *only for comparative purposes*. The reason for this is the greater complexity of the Danish complementation system, which would require a long excursus. For the same reason we do not discuss Faroese.

the outline of a new account for the distribution of *som* in (long-distance) restrictive relative clauses (RCs) and embedded *wh*-questions (*wh*-Qs)².

The distribution of the subordinating element *som* in Mainland Scandinavian is illustrated below. We take the Swedish examples in (1) and (2) as paradigmatic³: *som* introduces both subject and object RCs, as in (1), and embedded *wh*-Qs, as in (2)⁴.

- (1) a. *Jag känner mannen *(som) kom hit.* [Swedish]
 I know man.the SOM came here
 ‘I know the man who came here.’
 b. *Jag känner mannen (som) Maria ska träffa imorgon.*
 I know man.the SOM Maria will meet tomorrow
 ‘I know the man that Mary will meet tomorrow.’
- (2) a. *Hon undrade vem *(som) kom.* [Swedish]
 she wondered who SOM came
 ‘She wondered who came.’
 b. *Hon undrade vem (som) Johan träffade.*
 she wondered who SOM Johan met
 ‘She wondered who John met.’

Based on a fundamental asymmetry in the distribution of *som* in subject and object A-bar dependencies – i.e. *som* is only obligatorily present with subject extractions – it has been claimed that *som* is an expletive-like element that licenses subject extraction (see e.g. Taraldsen 1986, 2001 for Norwegian). Crucially, such an account does not make any prediction concerning the distribution of *som* in long-distance RCs and *wh*-Qs, unless some additional assumption is made. Under the additional assumption that *som* locally checks the subject features in C (see section 2.3 for details), the prediction is that *som* should always occur in the CP domain of the most deeply embedded clause of long-distance subject A-bar dependencies. However, in this paper we present novel empirical data that show that this prediction is not borne out: in Mainland Scandinavian (i) *som* cannot occur in the left periphery of the most deeply embedded clause of long-distance subject A-bar dependencies, and (ii) the distribution of *som* does not display a subject/object asymmetry in long-distance A-bar dependencies⁵. This is shown in examples (3) and (4)⁶.

² In this paper, we are only concerned with *wh*-Qs and restrictive RCs. Whether or not our tentative analysis can be extended to other types of A-bar dependencies, such as topicalization, cleft and left dislocation structures, can only be determined after collecting a considerable amount of additional data, and thus we leave it for future research.

³ In Norwegian, *som* cannot be present in embedded object *wh*-Qs, in contrast to Swedish. See section 2.1 for details.

⁴ We are primarily concerned with the distribution of *som* in embedded clauses; see Vangsnes (2005), Westergaard and Vangsnes (2005), and Westergaard et al. (2012) for some discussion on *som* in root *wh*-Qs.

⁵ The data presented in this paper are in part taken from the ScanDiaSyn database and in part collected by the authors through fieldwork sessions funded by the ScanDiaSyn project (see <http://uit.no/scandiasyn> for details) and the Yggdrasil Programme of the Research Council of Norway.

- (3) a. *Jeg känner mannen (som) du hoppas (*som) kommer hit.* [Swedish]
 I know man.the SOM you hope SOM comes here
 ‘I know the man you hope will come here.’
 b. *Jeg känner mannen (som) du hoppas (*som) Maria ska träffa imorgon.*
 I know man.the SOM you hope SOM Maria will meet tomorrow
 ‘I know the man you hope Mary will meet tomorrow.’
- (4) a. *Hon undrade vem (som) du hoppas (*som) kommer hit.* [Swedish]
 she asked who SOM you hope SOM come here
 ‘She asked who you said comes here.’
 b. *Hon undrade vem (som) du hoppas (*som) Maria ska träffa imorgon.*
 she asked who SOM you hope SOM Maria will meet tomorrow
 ‘She asked who you hope Mary will meet tomorrow.’

This paper offers an overview of the empirical complexity that the Scandinavian data present, and suggests an alternative route for explaining the distribution of *som* in (long-distance) A-bar dependencies. The paper is organized as follows. Section 2 outlines the relevant data and presents the most prominent account of the distribution of *som* in short A-bar dependencies in Norwegian and Swedish, which we call the *Expletive Hypothesis*. Section 3 presents the novel empirical facts concerning the distribution of *som* in long A-bar dependencies in Norwegian and Swedish, and shows that the Expletive Hypothesis cannot straightforwardly capture these novel facts. Section 4 sketches the outlines of a novel account of the nature, distribution and function of *som* in Norwegian and Swedish. In section 5, we discuss the difference in the distribution of *som* between Norwegian and Swedish. Section 6 summarizes and concludes the paper.

The ScanDiaSyn project was supervised and directed by Peter Svenonius and Øystein Vangnes at CASTL (Center for Advanced Study in Theoretical Linguistics), University of Tromsø, Norway.

⁶ Notice that the distribution of *som* in Swedish (and Norwegian) in the most deeply embedded clause of long-distance A-bar dependencies is different from the distribution of *that* in English, as illustrated in (i)-(ii).

- (i) a. I know the man (that) you hope (*that) will come here
 b. I know the man (that) you hope (that) Mary will meet tomorrow
 (ii) a. She asked who you hope (*that) will come tomorrow
 b. She asked who you hope (that) Mary will meet tomorrow.

Whereas both *som* in Swedish (and Norwegian) and *that* in English cannot be present in the most deeply embedded clause of long-distance subject extractions, only in English can *that* be present in the most deeply embedded clause of long-distance *non-subject* extractions (*that*-trace effect). This fact suggests that Swedish (and Norwegian) is not subject to the same type of restrictions that determine the *that*-trace effect in English. A difference from English is also visible in the distribution of the declarative complementizer *at* in Norwegian. While the distribution of Swedish *att* seems quite similar to that of *that* (i.e. Swedish has an *att*-trace effect), ScanDiaSyn data and additional questionnaire-based surveys (see fn. 5 above) reveal a great variation in the distribution of Norwegian *at* in long-distance A-bar dependencies. Specifically, we identified three varieties of Norwegian (Boef & Franco 2013), one of which displays no *at*-trace effect, and is thus different from English. A discussion of this variation would be out of the scope of this paper. Therefore we leave this issue to future research, but see section 5 on some differences between Swedish and Norwegian.

2. Short A-bar dependencies in Scandinavian

2.1. Data

In this section, we illustrate the distribution of subordinating elements in the left periphery of Scandinavian short A-bar dependencies, specifically restrictive RCs and embedded *wh*-Qs. Scandinavian languages can roughly be divided into two groups: languages that display a subject/object asymmetry and languages that do not. While Norwegian and Swedish belong to the first group, Icelandic belongs to the latter group (Allan et al. 1995, 193; Faarlund et al. 1997, 992; Teleman et al. 1999, 555ff; Thráinsson 2007, 410, 447). Both subject and object RCs in Icelandic are introduced by a specific subordinating form, *sem*, whereas both subject and object embedded *wh*-Qs are merely introduced by a *wh*-element. This is illustrated in (5) and (6) respectively.

- (5) a. *Ég þekki manninn *(sem) kom hingað.* [Icelandic]
 I know man.the SEM came here
 ‘I know the man who came here.’
 b. *Ég hata manninn *(sem) María ætlar að hitta á morgun.*
 I hate man.the SEM María is.going to meet tomorrow
 ‘I hate the man that Mary will meet tomorrow.’
- (6) a. *Hún spurði hver *(sem) hefði komið.* [Icelandic]
 she asked who SEM had come
 ‘She asked who came.’
 b. *Hún spurði hvern *(sem) Jón hefði hitt.*
 she asked who SEM Jón had met
 ‘She asked who John met.’

As just mentioned, Mainland Scandinavian languages belong to the first group: the subordinating element *som* is used in both RCs and embedded *wh*-Qs (unlike *sem* in Icelandic), and its distribution shows an asymmetry between subject and object extractions. As the Norwegian and Swedish cases in (7)-(10) illustrate (see also (1)-(2) above), *som* is obligatory with all subject extractions (see (7a), (8a), (9a), (10a)), but optional (see (7b), (8b), (10b)) or ungrammatical (see (9b)) with object extractions. Specifically, in object RCs *som* is optionally present in both Norwegian and Swedish, but in embedded *wh*-Qs Norwegian and Swedish behave differently: *som* is optional in Swedish but ungrammatical in Norwegian embedded object *wh*-Qs, see (10b) vs. (9b).

- (7) a. *Jeg kjenner mannen *(som) kom hit.* [Norwegian]
 I know man.the SOM came here
 ‘I know the man who came here.’
 b. *Jeg hater mannen (som) María skal møte i morgen.*
 I hate man.the SOM María will meet tomorrow
 ‘I hate the man that Mary will meet tomorrow.’
- (8) a. *Jag känner mannen *(som) kom hit.* [Swedish]
 I know man.the SOM came here
 ‘I know the man who came here.’

- b. *Jag känner mannen (som) Maria ska träffa imorgon.*
 I know man.the SOM Maria will meet tomorrow
 ‘I know the man that Mary will meet tomorrow.’

- (9) a. *Hun spurte hvem *(som) kom.* [Norwegian]
 she asked who SOM came
 ‘She asked who came.’
 b. *Hun spurte hvem (*som) Johan møtte.*
 she asked who SOM Johan met
 ‘She asked who John met.’

- (10) a. *Hon undrade vem *(som) kom.* [Swedish]
 she wondered who SOM came
 ‘She wondered who came.’
 b. *Hon undrade vem (som) Johan träffade.*
 she wondered who SOM Johan met
 ‘She wondered who John met.’

It is clear that the distribution of *sem* differs considerably from the distribution of *som*: *sem* only occurs in RCs and its distribution is symmetric in subject and object clauses; put differently, the obligatoriness of *sem* in RCs is independent from which argument is being extracted⁷. It is exactly for this reason that we do not discuss Icelandic further.

In the main part of this paper, we refer to Norwegian and Swedish as prototypical Mainland Scandinavian languages. While Danish also displays a subject/object asymmetry in the formation of A-bar chains, it differs from Norwegian and Swedish in that it employs the element *der* in addition to the subordinating element *som*.

- (11) a. *Vi kender de lingvister *(der) vil læse denne bog.* [Danish]
 we know the linguists there will read this book
 ‘We know the linguists who will read this book.’
 b. *Vi kender de lingvister (*der) han vil besøge.*
 we know the linguists there he will visit
 ‘We know the linguists who he will visit.’ (Mikkelsen 2002)

As the sentences in (11) show, the distribution of *der* is restricted to subject extraction contexts (see e.g. Vikner 1991, Mikkelsen 2002); *der* (in *wh*-Qs) has therefore been analyzed as an expletive in SpecIP that satisfies the EPP and licenses subject extraction (cf. Taraldsen 2001; Mikkelsen 2002; and see section 2.3). Notice that *som* may also be used to introduce RCs in Danish, but that its distribution is in part conditioned by the occurrence of *der* (e.g. either *som* or *der* (or both) must be present in a subject RC).

⁷ Perhaps the distribution of *sem* in Icelandic is constrained by a requirement that complementizers are spelled-out, see Thráinsson (2007, 443ff).

2.2. *Interim summary*

The following table sums up the distribution of *som* in Norwegian and Swedish, where “+” stands for obligatory, “(+)” stands for optional and “-” stands for ungrammatical (or unrealized, see section 5).

	Norwegian		Swedish	
	subject	object	subject	object
short restrictive RC	+	(+)	+	(+)
short embedded <i>wh</i> -Q	+	-	+	(+)

Table 1: The distribution of *som* in short A-bar dependencies

As was already mentioned before, and as can be clearly seen in table 1, Norwegian and Swedish differ from each other in the sense that embedded object *wh*-Qs generally do not permit insertion of *som* in Norwegian, whereas they do in Swedish. Despite the existence of several proposals explaining the derivation of Scandinavian A-bar dependencies, not many accounts have addressed the variation in the (non-)acceptability of *som* in non-subject embedded *wh*-Qs. An exception is Taraldsen (1986, 163-165), who links the contrast between Norwegian and Swedish to the presence of resumptive pronouns in the latter language. In section 5 we return to this difference between Norwegian and Swedish.

2.3. *The Expletive Hypothesis*

Consider again the subject/object asymmetry in Norwegian embedded *wh*-Qs in (9), here repeated in (12), in which *som* is obligatorily present in case of subject extraction, but obligatorily absent in case of object extraction.

- (12) a. *Hun spurte hvem *(som) kom.* [Norwegian]
 she asked who SOM came
 ‘She asked who came.’
 b. *Hun spurte hvem *(som) Johan møtte.*
 she asked who SOM Johan met
 ‘She asked who John met.’

On the basis of the asymmetric distribution of *som* in (12), it has been argued that *som* in short subject extractions is an expletive-like element that satisfies the EPP and enables subject extraction (on a par with *der* in Danish, see (11) above; cf. Taraldsen 1986, 2001 a.o. for details). In the remainder of this paper, we refer to this hypothesis as the *Expletive Hypothesis*. In (12a), *som* is thus obligatorily present in order to enable extraction of the subject *wh*-phrase, whereas in (12b), *som* – being an expletive – cannot be present because it is in complementary distribution with the subject *Johan*. This is abstractly illustrated in (13).

- (13) a. ... [CP WH [IP *som* ... t_{WH} ...] *subject extraction*
 b. ... [CP WH [IP SUBJECT ... t_{WH} ...] *object extraction*

According to this hypothesis, Scandinavian subject-specific *som* seems to behave like the *-i* morphology (reminiscent of the expletive pronoun *il*) on the complementizer *que* in

French subject-extraction contexts (cf. Taraldsen 2001; Rizzi and Shlonsky 2007)⁸; the *que/qui*-alternation is illustrated in (14).

- (14) a. *l'homme <*que/qui> viendra* [French]
 the man that/who will come
 ‘the man who will come’
 b. *l'homme <que/*qui> j'aime*
 the man that/whom I love
 ‘the man that I love’

The Expletive Hypothesis seems to nicely explain the distribution of exclusively subject-specific elements like French *qui* and Danish *der*, as well as the obligatoriness of *som* in Mainland Scandinavian short A-bar dependencies involving subject extraction⁹. Nonetheless, in the next section we show some new pieces of data concerning Scandinavian long-distance A-bar dependencies that cannot straightforwardly be explained by the Expletive Hypothesis.

3. Long-distance A-bar dependencies in Scandinavian

3.1. Data

In this section, we illustrate the empirical facts concerning the distribution of *som* in long-distance A-bar dependencies in Norwegian and Swedish. The data presented in this section have been obtained through specific questionnaire studies only, since the relevant constructions were not explicitly tested in the ScanDiaSyn project¹⁰. With the term *long-*

⁸ As for the French *que/qui*-alternation, Taraldsen (2001) argues that the *-i* morphology on *qui* is an expletive in SpecIP that satisfies the EPP (i.e. *qui=que+i*). In the terms of Rizzi and Shlonsky (2007), the *-i* morphology on *qui* satisfies the *Subject Criterion* (according to which thematic subjects move to the criterial subject position (SpecSubjP), and are frozen there by *Criterial Freezing*; the Subject Criterion is thus basically a reformulation of the classical EPP and accounts for ECP effects). More specifically, *-i* is merged as the finiteness head (Fin⁰), just above SubjP and just below the projection that hosts *que*. Because of the nominal nature of *-i* (it has phi-features) and its being in a local head-head configuration with Subj⁰, *-i* can satisfy the nominal requirement of Subj⁰ and allow for subject extraction.

⁹ It should be clear that the Expletive Hypothesis only concerns obligatory *som* in subject extractions. Something additional needs to be said about the *optionality* of *som* in short object RCs in Norwegian and Swedish, and in short object *wh*-Qs in Swedish (cf. table 1), as *som* clearly cannot be an expletive-like element in those cases. Taraldsen (1986) proposes that in those cases *som* is an *operator* instead of an *expletive*. As we are not in the first place concerned with the optionality of *som* in this section, we refrain from further discussion at this point, but see section 5.

¹⁰ It is important to point out that in this paper we are generalizing over the data regarding the distribution of *som* in Norwegian and Swedish long-distance A-bar dependencies. Even though the patterns regarding the distribution of *som* that we illustrate in this paper represent the grammaticality judgments of the vast majority of informants, there is some variation among speakers regarding the distribution of *som*. We largely abstract away from this microvariation and focus on what appear to be the predominant patterns. Further systematic empirical research should explore the full range of microvariation regarding the distribution of *som* in Scandinavian.

distance A-bar dependencies we refer to subject and object extractions out of a complement clause of a bridge verb. In (15) (repeating example (3) from above) and (16), the extracted element is the subject (a-sentences) or the direct object (b-sentences) of the most deeply embedded clause. Notice that the presence of *som* in the left periphery of the clause that contains the gap of the extracted argument (i.e. the most deeply embedded clause) is ungrammatical (cf. also Vikner 1991, 119), whereas its presence is grammatical, but not obligatory, in the left periphery of the higher clause, i.e. the RC itself.

- (15) a. *Jeg kjenner mannen (som) du sa (*som) kom hit.* [Norwegian]
 I know man.the SOM you said SOM came here
 ‘I know the man you said came here.’
 b. *Jeg kjenner mannen (som) du sa (*som) Maria skal møte i morgen.*
 I know man.the SOM you said SOM Maria will meet tomorrow
 ‘I know the man you said Mary will meet tomorrow.’
- (16) a. *Jeg känner mannen (som) du hoppas (*som) kommer hit.* [Swedish]
 I know man.the SOM you hope SOM comes here
 ‘I know the man you hope will come here.’
 b. *Jeg känner mannen (som) du hoppas (*som) Maria ska träffa imorgon.*
 I know man.the SOM you hope SOM Maria will meet tomorrow
 ‘I know the man you hope Mary will meet tomorrow.’

Crucially, the ungrammaticality of *som* in the most deeply embedded clause is independent of which argument is extracted. Put differently, the subject/object asymmetry in short A-bar dependencies as presented in section 2 disappears in long-distance A-bar dependencies. Similarly, a symmetric distribution of *som* is attested in long-distance embedded *wh*-Qs as well, as illustrated in (17)-(18) below.

- (17) a. *Hun spurte hvem (*som) du sa (*som) kom hit.* [Norwegian]
 she asked who SOM you said SOM came here
 ‘She asked who you said came here.’
 b. *Hun spurte hvem (*som) du sa (*som) Maria skal møte i morgen.*
 she asked who SOM you said SOM Maria will meet tomorrow
 ‘She asked who you said Mary will meet tomorrow.’
- (18) a. *Hon undrade vem (som) du hoppas (*som) kommer hit.* [Swedish]
 she asked who SOM you hope SOM come here
 ‘She asked who you said comes here.’
 b. *Hon undrade vem (som) du hoppas (*som) Maria ska träffa imorgon.*
 she asked who SOM you hope SOM Maria will meet tomorrow
 ‘She asked who you hope Mary will meet tomorrow.’

As can be seen by the pattern in (17), *som* in Norwegian is ungrammatical after the *wh*-element in long-distance embedded *wh*-Qs, unlike short subject *wh*-Qs, cf. (9a). Swedish, instead, optionally allows *som* to linearly follow the *wh*-element in both subject and object long-distance embedded *wh*-Qs. This difference between Norwegian and Swedish neatly reflects the difference attested in short object embedded *wh*-Qs in these two languages, i.e.

the distribution of *som* is more restricted in Norwegian. We come back to this difference in section 5.

3.2. Problems for the Expletive Hypothesis

The Expletive Hypothesis seems to properly account for (a part of) the distribution of *som* in Mainland Scandinavian short A-bar dependencies (see section 2.3). As could be seen in (15)-(18), the distribution of *som* in long-distance A-bar dependencies does not reflect a subject/object asymmetry. Since the Expletive Hypothesis does not explicitly address long-distance A-bar extractions, further assumptions are needed for it to make predictions about the distribution of *som* in these syntactic contexts.

First, let us assume that *som* is an expletive that licenses subject extraction *locally* (Assumption A). With this additional assumption, the Expletive Hypothesis fails to account for the facts: *som* is predicted to occur in the clause from which the subject is extracted, *quod non*. Put differently, *som* is predicted to obligatorily introduce the most deeply embedded clause in long-distance subject extractions, on a par with *qui* in French and *der* in Danish. In the French long-distance RCs in (19), the distribution of *qui* is analogous to its distribution in short RCs (cf. (14)), i.e. *-i* truly behaves as an expletive. The same holds for Danish *der*. The example in (20) shows a long-distance subject RC, in which *der* occurs in the lower clause that is introduced by the declarative complementizer *at*.^{11,12}

- (19) a. *l'homme que tu penses <*que/qui> viendra* [French]
 the man that you think that/who will come
 'the man you think will come'
 b. *l'homme que tu penses <que/*qui> j'aime*
 the man that you think that/whom I love
 'the man you think I love'
- (20) *Vennen (som) han påstod at der havde lånt bogen var forsvundet.* [Danish]
 friend.the SOM he claimed that there had borrowed book.the was disappeared
 'The friend that he claimed had borrowed the book has disappeared.'
 (Engdahl 1985, 21)

If we compare the French examples in (19) with the Scandinavian examples in (15)-(16), it is evident that *som* has a different distribution from French *qui*. The Expletive Hypothesis enriched with Assumption A thus cannot capture the distribution of *som*.

¹¹ Similarly, (i) shows a long-distance subject *wh*-Q, in which *der* occurs in the most deeply embedded clause (while *som* cannot occur there).

- (i) *Jeg ved ikke hvem du tror <der/*som> har gjort det.* [Danish]
 I know not who you think there has done it
 'I do not know who you think has done it.'
 (Vikner 1991, 119)

¹² Interestingly, preliminary data from a pilot study on the distribution of *som* and *der* in Danish suggest that speaker grammaticality judgments show variation with regard to the distribution of *der*. Specifically, a number of speakers do not accept *der* in the most deeply embedded clause of long-distance subject A-bar dependencies. Since these data await further validation through careful empirical research, we leave the issue of variation in the distribution of *der* for future work.

Alternatively, as suggested to us by an anonymous reviewer of a previous version of this paper, one can assume that *som* licenses subject extraction in short A-bar dependencies, whereas in long-distance A-bar dependencies the C head in the most deeply embedded clause has properties such that it permits SpecIP not to be projected (Assumption B). Specifically, if one follows Rizzi and Shlonsky (2007), the subject position does not need to be projected when Fin^0 (i.e. the lowest C head) contains an element that satisfies the Subject Criterion (see footnote 7). Thus, one might say that a clause *embedded inside* a relative or interrogative clause may have a Fin^0 of the required type for the subject position not to be projected, while the Fin^0 of the relative or interrogative clause itself cannot be of the required type (for reasons that are yet unknown). Even though the Expletive Hypothesis enriched with Assumption B would correctly predict that *som* cannot be present in the most deeply embedded clause of long-distance subject A-bar dependencies, we do not believe it to be insightful for the following reasons. First, following Rizzi and Shlonsky (2007), the element in Fin^0 that satisfies the Subject Criterion encodes nominal uninterpretable features. Rizzi and Shlonsky take French as an example, in which the complementizer lexicalizes the nominal uninterpretable features of Fin^0 with the *-i* morphology (see (14) and (19) above). To extend this analysis to Norwegian and Swedish, one would need to assume that in those languages Fin^0 in the most deeply embedded clause encodes nominal uninterpretable features, and that these features lack a phonetic matrix in long-distance A-bar dependencies. Independent motivation for assuming that the subject position is not projected only in the most deeply embedded clause in long-distance A-bar dependencies in Norwegian and Swedish is however missing. Second, and this holds more generally for any version of the Expletive Hypothesis, the mere occurrence of *som* in the left periphery of object A-bar dependencies remains unexplained under the assumption that *som* is an expletive. Put differently, following any version of the Expletive Hypothesis one is forced to say that there are two different instances of *som*: (i) an expletive-like element that obligatorily shows up in short subject extractions and (ii) an instance of *som* (potentially an operator-like element, as proposed by Taraldsen 1986, cf. footnote 8) that optionally shows up in short object A-bar dependencies (and in the higher clause of long-distance subject A-bar dependencies). In sum, the Expletive Hypothesis in combination with either Assumption A or Assumption B cannot adequately account for the distribution of *som* in Norwegian and Swedish.

Table 2 sums up the facts presented so far.

	Norwegian		Swedish	
	subject	object	subject	object
short restrictive RC	+	(+)	+	(+)
long restrictive RC, high clause	(+)	(+)	(+)	(+)
long restrictive RC, low clause	-	-	-	-
short embedded <i>wh</i> -Q	+	-	+	(+)
long embedded <i>wh</i> -Q, high clause	-	-	(+)	(+)
long embedded <i>wh</i> -Q, low clause	-	-	-	-

Table 2: The distribution of *som* in (long-distance) A-bar dependencies

The crucial observation for the alternative account of the distribution of *som* that we sketch in this paper is that in long-distance embedded A-bar dependencies *som* is ungrammatical in the clause from which the argument is extracted, as can be seen in table

2. As mentioned before, this observation basically indicates that *som* cannot be an expletive element licensing subject extraction. Moreover, table 2 shows that *som* is optional in a number of contexts, namely when it introduces a short object A-bar dependency (RCs in both Norwegian and Swedish and embedded *wh*-Qs in Swedish) and when it introduces the higher clause of a long-distance A-bar dependency (RCs in both Norwegian and Swedish and embedded *wh*-Qs in Swedish).

4. Towards an analysis

In this section, we first discuss the nature of *som* in RCs and embedded *wh*-Qs from a comparative and diachronic perspective (section 4.1), and then we discuss the distribution of *som* in (long-distance) A-bar dependencies (section 4.2). In section 4.3, we sketch the outlines of a new analysis according to which *som* is a complementizer marking A-bar dependencies.

4.1. The nature of *som* from a comparative and diachronic perspective

The element *som* that introduces RCs and may occur to the right of a *wh*-expression in *wh*-Qs also functions as a marker for the standard in (generic) equative and similative clauses (in the sense of Haspelmath and Buchholz 1998; Hendery 2012). A ‘standard marker’ is for instance the second *as* in a sentence like *Mary is as pretty as my sister*, where *my sister* is the standard to which what is technically called ‘the parameter’ (i.e. the predicate, *pretty* in the example above) refers. In (21) we give some examples of this use of *som* in Scandinavian.

- (21) a. *Min søster er like pen som dig.* [Norwegian]
 my sister is equally pretty SOM you
 ‘My sister is as pretty as you.’
 b. *Hon skriver som hennes bror talar.* [Swedish]
 she writes SOM her brother talks
 ‘She writes like her brother talks.’
- (Haspelmath and Buchholz 1998, 294, 320)

Brandner and Brauning (2013) argue convincingly that the semantics of the equative particle is well suited for its function in RCs. This fits with their claim that the RC particle *wo* in modern Upper German dialects (and *so* in older stages of German, and most prominently in the Upper German regions) evolved out of the equative particle *so*. Specifically, Brandner and Brauning argue that both equatives and RCs contain a (hidden) conjunction¹³, as illustrated below.

¹³ In a footnote, Faarlund (2004, 264) observes that “Even the word *ok* ‘and’ has been interpreted by some scholars (e.g. Christoffersen 2003) as a relative particle in sentences such as

- (i) *Ðar er garðr hjá ok heitir Haugsgarðr* [Old Norse]
 there is farm.NOM by and is-called Haugsgard.NOM
 ‘There is a farm nearby which is called Haugsgard’ (Laxd 68.20)

There is however no need for such an interpretation, given the rather free deletion of subjects in coordinated sentences (...).” This means that a clause like (i) can alternatively be analyzed as two

- (22) a. *Hans läuft (so) schnell wie der Wind.* [German]
 Hans runs (so) fast as the wind
 ‘Hans runs as fast as the wind.’
 b. Hans’ running has a rapidity (=x) **and** the wind has a rapidity (=y),
 whereby *wie* states that x=y (Brandner and Brauning 2013, 147)
- (23) a. *Des Buech wo ich g’lese ha liit uff em Tisch.* [Alemannic]
 the book PRT I read have lies on the table
 ‘The book that I read lies on the table.’
 b. x is a book **and** I read something (=y), whereby *so/wo* states that x=y
 (Brandner and Brauning 2013, 147-148)

In this perspective, the interpretation of equatives and RCs is rather similar: both contain a conjunction and an equation (either an equation between properties, as in (22), or an equation between the elements for which the properties hold, as in (23)); notice that it is precisely the equation in RCs (23b) that connects the gap inside the RC to the RC head in the matrix clause. Moreover, other scholars have observed a similarity in the pragmatic function of equatives and RCs, in that they both serve to “anchor a referent in discourse by giving additional information about the referent” (Bužarovska 2005, 95). A further fact in support of the correlation between equatives and RCs is that *som* is also used as a role marker, i.e. a marker of the syntactic role to which the subject or object predicative phrases refer (e.g. *I am asking you for this as your mother*). This function seems to be a later development from its function as a generic equative (Haspelmath and Buchholz 1998, 321-323). The similarity between role phrases and RCs can be seen in their function: a role phrase is a type of secondary predicate of a nominal, and a RC is a type of predication that modifies a nominal (see also section 4.2). If the above characterization of equatives and RCs is on the right track, it should come as no surprise that the equative marker can be used to introduce RCs.

Following this line of reasoning – i.e. *som* is not an expletive, but rather a complementizer (cf. Thráinsson 2007, 407ff) (derived from the equative marker¹⁴) – we can

main coordinated clauses, the second of which has a null subject that is deleted under identity with the noun in the first clause. This observation suggests that there is at least an interpretive similarity between coordinated clauses and RCs.

¹⁴ Haspelmath and Buchholz (1988, 288) propose the exact opposite, namely that equative markers derived from RC markers. They propose that correlative equative constructions derive from correlative free relative clauses (FRCs) through elision of redundant material (i.e. everything except the standard marker), as illustrated in (i).

- (i) *Ich bin so alt [wie du <alt bist>]* [German]
 I am so old how you old are
 ‘I am so old as you’

However, Hendery (2012, 93ff.) argues convincingly that such a proposal encounters a problem with respect to clause ordering. Specifically, it predicts that correlative FRCs, as in (ii), show the same clausal ordering of correlative equative constructions, but “in the typical correlative RC, the relative clause precedes the main clause”, see (iii).

- (ii) *Wer das weiss, der bekommt einen Preis.* [German]
 who that knows, he gets a prize
 ‘Whoever knows that will get a prize.’

account for why *som* may be used in equatives/similatives as well as in RCs (see also Vangsnes 2005, 211 on the functions of *som*). The fact that *som* became a RC marker could be explained under the hypothesis that both in equatives/similatives and in RCs *som* introduces a clause that contains a variable (the trace left behind by A-bar movement) that is bound by an operator (OP), i.e. an OP-variable dependency. The antecedent of the OP is some information that is provided in the main clause, which embeds the clause that is introduced by *som*. The element *som* can thus be seen as a general marker of A-bar dependencies, which via a diachronic process of function extension began to introduce various clause types that share information with the main clause (cf. Hendery 2012, 97 and references cited therein).

In equatives and similatives, the OP has a predicate, an adjective or a property of some sort as antecedent, whereas in RCs the antecedent of the OP is typically a nominal. We therefore propose that *som* lexicalizes a C head that bears an OP feature: [OP]. In section 4.2 we illustrate the derivation of A-bar dependencies.

Diachrony seems to support the analysis of *som* as a complementizer that marks A-bar dependencies (i.e. OP-variable dependencies). Already in Old Norse, RCs were introduced by the equative particle *sem* (24), which was also used as a comparative particle (25) – being “a derivative of the same root as the adjective *samme* ‘same’ (Old Norse *samr*), and thus cognate with English *same*, Latin *simul*-, Greek *homos*” (Vangsnes 2004, 23; see also Faarlund 2004).

- (24)¹⁵ *allum guðs vinum ok sinum þeim sem þetta bref sjá eðr heyra*
 all god friends and his.REFL those SEM this letter see.3P or hear.3P
 ‘To all God’s friends and those of his own who see or hear this letter’
 (DN 11.4 quoted after Faarlund, 2004, 259)

- (25) *svá þróttaust folk sem þetta er*
 so powerless people SEM this is
 ‘Powerless as this people is’ (Fbr 213.17 quoted after Faarlund, 2004, 266)

The Handbook of Nordic Languages reports that during the Old Norse classical period *sem* (‘as’) began to replace *er* – a complementizer that was used in RCs¹⁶. Up to that

-
- (iii) **Wie alt du bist, so bin ich.*
 how old you are, so am I (Hendery 2012, 95)

¹⁵ The examples in (24) and (25) are taken from Brandner and Brauning (2013, 158).

¹⁶ *Er* was also used in adverbial clauses introduced by a temporal adverbial (*þá*), a place adverbial (*þar*) or a manner adverbial (*svá*) (Hendery 2012; cf. Faarlund 2004, 265). Hendery (2012, 99) observes that “this construction has a lot in common with relative clauses since it still has an antecedent in the main clause [cf. *þá* in (i) below] and a gap in the subordinate clause”.

- (i) *Þorsteinn, son Egils, þá er hann óx upp, var*
 Thorstein.NOM son.NOM Egil.GEN then **when** he grew up was
allra manna fríðastr sýnum
 all men.GEN most-handsome.M.NOM looks.D
 ‘When he grew up, Thorstein, Egil’s son, was the most handsome of all men’
 (Eg. 293.1 cited in Faarlund 2004, 265, ex. 49a)

moment, *sem* was used mainly in comparative clauses (Bandle et al. 2005, 1160) and was originally more frequent in Old Norwegian texts (Lindblad 1943, 113; cf. Faarlund 2004, 259). By contrast, its cognate *sum* is only mentioned a few times in the earliest Swedish inscriptions (Lindblad 1943, 114, cf. also Delsing 2001), and there is no evidence for *sem/sum* or any cognates in RC marking in early Danish runic material or in the older Edda poetry. This brought various researchers to the conclusion that *sem* developed RC marking functions first in the Norwegian dialects of Old Norse. From there, it spread to Icelandic, Swedish and then Danish (Noreen 1923, 319), while competing with the relative marker *er* (Hendery 2012, 89). This extension of *sem/sum* from Norwegian to other Scandinavian varieties is compatible with the hypothesis that the morphosyntactic differences between Icelandic *sem* and, say, Swedish *som*, may have a historical basis.

A diachronic correlation between *wh*-clauses and RCs has been proposed to explain why relative markers such as *som* introduce embedded *wh*-Qs. Givón (2009, 117-119) proposes that one of the possible ways in which RCs are grammaticalized is via “the *wh*-question pathway”, “where the use of an embedded question spreads from complements of cognition, perception and/or utterance verbs to relative clauses. For example, a language might have constructions such as ‘She didn’t know [who did it]’ or ‘He couldn’t think [where it was]’, and expand them by insertion of a head noun, resulting in ‘She didn’t know *the person* [who did it]’ and ‘He couldn’t think of *the place* [where it was]’” (cf. Hendery 2012, 36).

We hypothesize the opposite grammaticalization path. That is, clauses such as ‘I didn’t know [who did it]’ became grammaticalized by dropping the overt head noun and maintaining the *wh*-complement. Put differently, an embedded *wh*-Q would derive from a restrictive RC that has lost its head, i.e. a clause that is morphologically similar to a headless (or free) RC (FRC). This seems to properly account for the fact that a FRC is in general morphologically ambiguous between an embedded *wh*-Q and a RC without a lexical head noun (cf. Smits 1988). It is precisely this ambiguity that we find in the complements of (negated) semi-factive predicates like *to know* (see above).

If this hypothesis is on the right track, we need to show that, at some diachronic stage, a *wh*-element could co-occur with an overt head noun in a RC. This is exactly what we find in Old Swedish (1350-1400). More precisely, Delsing (2001) observes that around 1350 subject restrictive RCs in Swedish start being introduced by the *wh-som* string, represented by *hvilkin/hulkin* (‘which’) *som*. Before that time, and after 1600, the presence of an overt *wh*-element in restrictive RCs is not attested in this language.

- (26) *Brudhgöma hulkin som är äronna konungir* [Old Swedish]
 groom which SOM is honour king.GEN
 ‘The groom who is the king’s honour’ (159, 48, BU in Delsing 2001)

The example in (26) thus represents the ‘missing link’ in the grammaticalization path of A-bar dependencies. In case the *wh*-element (*hvilkin/hulkin*) is dropped, the result is a

The extension of the use of *er* from locative/temporal adverbial clauses to RCs seems to have followed a path of upward ‘migration’ in the Accessibility Hierarchy of Keenan and Comrie (1977). Originally, *er* was restricted to ‘locative RCs’ and place adverbials (i.e. headless locative RCs) and then it gradually spread to eventually refer even to subject and object NPs (Fleischer 2004, 234; cf. Hendery 2012, 97). Hendery (2012) suggests that the distribution of *er* might have primed that of *sem*.

modern Scandinavian restrictive RC introduced by *som* only: this is arguably what happens in the passage from Old (1350-1550) to Modern Swedish. We further speculate that when the head noun is not present a FRC obtains. In order to substantiate this suggestion, we will end this section by making a few remarks concerning the formation of FRCs in Scandinavian.

We have already seen that the *wh-som* string introduces short (subject) embedded *wh*-Qs in Swedish and Norwegian. In these languages, the same string introduces a type of subject FRC that has been analyzed not as a real FRC, but rather as a ‘semi-FRC’ (or pseudo FRC). Smits (1988, 394) argues that in these FRCs the *wh*-pronoun is a propositional antecedent and *som* is a relativizer (cf. also Inada 2007, 62ff.).

- (27) *Hvem *(som) snakker med Marit, blir lykkelig.* [Norwegian]
 who SOM talks with Marit becomes happy
 ‘Whoever talks with Marit, becomes happy.’ (Smits 1988, 394)

This type of FRC is only possible if the intended reading is non-specific, i.e. a reading in which the *wh*-element behaves like a quantifier (*whoever, whomever, whatever*, etc.). For FRCs with a specific reading, both Swedish and Norwegian employ demonstrative pronouns (e.g. *den* ‘that, the one’) or personal pronouns (e.g. *han* ‘he’)¹⁷.

Under the hypothesis outlined above, the grammaticalization process (from RCs to *wh*-Qs) does not involve significant changes in the feature specification of the subordinating element (*som*). Rather, it involves just a function extension of the *wh*-subordinating element. This process has arguably taken place in modern Swedish and Norwegian. In a parallel fashion, the hypothesis that this functional flexibility may also characterize forms such as *som* itself is based on the assumption that some clause markers may become markers for a range of clause types, partly because “they are well suited to the role, in the sense that they already perform one or more of the characteristic operations” (Hendery 2012, 131) that are required by one of those clause types. According to our hypothesis, A-bar dependencies could thus be a case in point.

4.2. The distribution of *som* in Norwegian and Swedish

At this point, we need to clarify the syntactic distribution of *som* in (long-distance) A-bar dependencies in Norwegian and Swedish, in terms of its obligatoriness in some contexts and its optionality in others. We assume that the formation of both RCs and *wh*-Qs involves OP movement. For RCs we assume, following tradition, that the relative pronoun or OP undergoes A-bar movement inside the RC, in line with the (traditional) Head External Analysis of RCs (Quine 1960; Chomsky 1977; Smits 1988; Borsley 1997; Boef 2012, 2013 amongst others).

More specifically, we assume that A-bar movement of the OP in both *wh*-Qs and RCs creates an operator-variable dependency (predicate)¹⁸. Put differently, the OP is interpreted as a lambda operator at LF (cf. Adger and Ramchand’s 2005 [Λ] feature: a feature that is interpreted as predicate abstraction). This is illustrated in (28): the OP is interpreted at the

¹⁷ We tested (specific) FRCs with various Norwegian and Swedish speakers, but our sample is not broad enough to make a robust generalization about the distribution of *som* in (short and long) FRCs. We therefore leave this issue open for future research.

¹⁸ This part of the analysis could extend to all A-bar dependencies, thus arguably also equatives.

top of the dependency (see also section 4.3 below) and binds the variable (its trace or copy) at the bottom of the dependency.

$$(28) \quad \begin{array}{l} [\text{CP OP} \dots [\text{CP OP} \dots \quad \text{OP} \dots]] \\ \lambda x \quad \quad \quad x \text{ (with e.g. } x \in \text{human)} \end{array}$$

Since the operator is found in the syntax of both *wh*-Qs and RCs (a *wh*-expression in a *wh*-Q or a relative pronoun or OP in a RC), it cannot be equated with a *wh*-question operator. We assume that *wh*-Qs contain in their left periphery a *wh*-question operator that takes the predicate created by movement of the OP (cf. (28)) as its argument and returns question semantics as its value (the details of question semantics need not concern us here). Put differently, it is the *wh*-Q operator that supplies the interrogative force of the clause, not the A-bar OP (much in the spirit of Cable 2010, 78). RCs on the other hand do not contain such a *wh*-question operator. Rather, in RCs, the predicate that is formed by movement of the OP (cf. (28)) is related to the RC head by means of *Predicate Modification* (Heim and Kratzer 1998, 95). Semantically, this amounts to *set intersection*: the RC denotes a set, which is intersected with the set denoted by the RC head.

In sum, RCs and *wh*-Qs both involve OP movement, thereby creating an operator-variable dependency. The difference between the two clause types is that only *wh*-Qs contain a *wh*-question operator; the semantics of RCs results from set intersection with the RC head.

The data presented in section 3 indicate that *som* is ungrammatical in the most deeply embedded clause of a long-distance A-bar dependency, i.e. in an intermediate step of an A-bar derivation. This distribution suggests that *som* must immediately follow an A-bar OP – either a *wh*-expression in a *wh*-Q or a relative pronoun or OP in a RC. This fits in perfectly with *som* being a general marker of A-bar dependencies (cf. *supra*). As already briefly mentioned above, we accordingly propose that *som* simply encodes an [OP] feature. We furthermore assume the presence of an OP feature on each C-head in all A-bar dependencies.

Along the lines of Abels (2012), we assume that A-bar dependencies are derived via successive-cyclic movement that proceeds via *all* phase edges (no phase can be skipped; cf. Chomsky 2000), and that movement is triggered by a feature that is encoded on each intermediate landing site. Put differently, A-bar movement proceeds via the edges of *vP* and CP, which encode the feature that is responsible for the formation of the A-bar chain (we come back to this point in section 4.3). This is abstractly illustrated in (29) for long-distance A-bar movement of an object OP; following common practice, strikethrough of the OP indicates non-realization at PF.

$$(29) \quad [\text{CP OP} \dots [\text{vP } \overline{\text{OP}} [\text{vP } v [\text{VP } V [\text{CP } \overline{\text{OP}} \dots [\text{vP } \overline{\text{OP}} [\text{vP } v [\text{VP} \dots (\overline{\text{OP}}) \dots]]]]]]]]]]]$$

Specifically, a *short* object RC is derived by first moving the VP-internal object OP to an A-bar position on the *vP* edge, after which it is further A-bar moved to the CP domain where it checks the [OP] feature on C. Subjects, by contrast, can be directly extracted from their A-position in Spec*vP*, since this position is already on the edge of *vP* and therefore visible to the higher phase. We assume that in case of a subject A-bar dependency, the

subject OP does not move to SpecIP, because it would be frozen in place there, and unable to move further to SpecCP (see Rizzi and Shlonsky 2007).¹⁹

The distribution of *som* is captured by the two descriptive generalizations provided in (30).

- (30) **Conditions on the distribution of *som***
- (i) *Som* must be right-adjacent to an A-bar OP (the A-bar OP must locally c-command *som*, i.e. Spec-Head agreement).
 - (ii) Only in between an A-bar OP and the trace of this OP in *A-position* is the presence of *som* obligatory.

The first condition in (30) captures the fact that *som* is only attested in the highest clause of a (long-distance) A-bar dependency, as illustrated abstractly in (31) and (32). This condition is explained in light of the fact that *som* and the OP are both specified as [OP]. This relation is subject to a locality condition, i.e. it is a case of Spec-Head agreement.

- (31) subject extraction
- a. [CP OP ***(*som*)** ... [vP t_{OP} ...]]
 - b. [CP OP (***som***) ... [vP t_{OP} [vP ... [CP t_{OP} (***(*som*)**) ... [vP t_{OP} ...]]]]]]

- (32) object extraction²⁰
- a. [CP OP (***som***) [IP SUBJ ... [vP t_{OP} [vP ... t_{OP} ...]]]]
 - b. [CP OP (***som***) [IP SUBJ... [vP t_{OP} [vP... [CP t_{OP} (***(*som*)**)... [vP t_{OP} [vP... t_{OP} ...]]]]]]]]

Our claim that *som* can only be present if it is locally c-commanded by an A-bar OP receives further support from the absence of *som* in (subject) possessive RCs, as illustrated in (33).

- (33) *Her er mannen hvis hest (*som) vant løpet.* [Norwegian]
 here is man.the whose horse won race.the
 ‘Here is the man whose horse won the race.’ (Taraldsen 1986, 179)

The A-bar OP is embedded inside the larger phrase *hvis hest* ‘whose horse’, and does not locally c-command *som*, as stated in (30i). As a result, insertion of *som* is not possible.²¹

¹⁹ For ease of exposition we simply assume that the subject is extracted from SpecvP. Couched in a cartographic framework, Rizzi and Shlonsky (2007) argue that the subject skips the highest subject position in IP – i.e. the criterial position SpecSubjP – and that it is extracted from a lower subject position in IP. Our analysis is equally compatible with this assumption.

²⁰ Recall that Norwegian differs from Swedish here in that only in Swedish *som* can optionally be present in object *wh*-Qs (see table 2). We will return to this issue in section 5.

²¹ This is somewhat of an oversimplification of matters, as a similar construction is fine in *wh*-Qs.

- (i) *Vi vet hvis hest som vant løpet.* [Norwegian]
 we know whose horse won race.the
 ‘We know whose horse won the race.’ (Taraldsen 1986, 179)

The second condition in (30) captures the fact that only in case the trace of the OP is in A-position (i.e. Spec_vP) and no lexical material is minimally intervening between the OP itself and the trace of the OP in A-position, is *som* obligatory.²² This is abstractly illustrated by the difference between (31a) and (31b): only in the former is *som* obligatorily present.

The descriptive generalizations in (30) and their illustration in (31) and (32) indicate that the distribution of *som* is not subject to the same locality constraints that generally apply to agreeing complementizers. Complementizer agreement (CA) is in fact a local phenomenon (see a.o. Abels 2012), whereby a complementizer agrees with the subject of the subordinate clause that it introduces. CA for number is illustrated in (34). The example in (35) shows that CA is maintained when the subject is extracted.

- (34) a. ... *dat ik zuinig leef* [Katwijk Dutch]
 that I economical live.SG
 ‘... that I live economically’
 b. ... *datt-e we/jullie/hullie gewoon lev-e*
 that.PL we/you.PL/they normal live.PL
 ‘... that we/you/they live normally’ (Van Koppen 2005, 32)
- (35) *Doow denk ik de-s de wedstrijd zal-s winnen.* [Tegelen Dutch]
 you think I that-2.SG the game will-2.SG win
 ‘YOU, I think will win the game.’ (Van Koppen 2005, 102)

This type of CA is different from the famous Irish CA. First, in Irish long-distance extractions, the complementizer of *each clause* that contains the trace of the extracted phrase shows agreement with that phrase, whereas in Dutch varieties only the complementizer of the clause that contains the most deeply embedded subject trace agrees with that phrase. Second, this type of CA is not restricted to subject extraction (see the example below). Irish CA is illustrated in (36)-(37) for long-distance RCs (data like these are often cited as a strong argument in favor of successive-cyclic A-bar movement).

- (36) a. *Deir said* [CP *gur ghoid na síogaí í*]. [Irish]
 say they C-PAST stole the faires her
 ‘They say that the faires stole her away.’
 b. *an ghirseach* [CP *a ghoid na síogaí*]
 the girl C[+WH] stole the fairies
 ‘the girl that the fairies stole away’ (McCloskey 2001, 67)
- (37) *an rud* [CP *a shíl mé* [CP *a dúirt tú* [CP *a dhéanfá*]]] [Irish]
 the thing C[+WH] thought I C[+WH] said you C[+WH] do.COND.2SG
 ‘the thing that I thought you said you would do’ (McCloskey 1990, 207)

Perhaps this difference between RCs and *wh*-Qs can be attributed to the presence of the RC head in RCs, or to the possibility that in (33) the OP *hvis* pied-pipes only the noun *hest*, whereas in (i) *hvis* pied-pipes the modified noun *hest som vant løpet* (cf. Wayne 2007, 425). We leave this issue open for future research.

²² In A-bar dependencies in which an argument is extracted, minimal interveners would be arguments. The fact that adverbials can appear between the OP and its trace in subject position is predicted under a Relativized Minimality approach (Rizzi 1990).

Both types of CA – the dialectal Dutch kind in (34)-(35) and the Irish kind in (36)-(37) – are clearly different from the distribution of *som* in Norwegian and Swedish. In these Scandinavian languages the complementizer is not of the agreeing kind since its distribution is not subject to any locality constraint: merger of *som* in the C that is closest to the extraction site is ruled out (see (31b) and (32b)).

4.3. Proposal

We would like to suggest that the ‘non-locality’ that seems to characterize the distribution of *som* in Norwegian and Swedish is in fact dependent on the feature specification of the CP phase-head. We capitalize on Abels’ (2012, 85) condition on feature interpretation, given in (38) below, and we specifically argue that A-bar chains are formed by phase-heads that contain *interpretable* probing features and phase-heads that contain *uninterpretable* (or *formal*) probing features.

(38) **Condition on feature interpretation**

A strongly deficient feature F is semantically interpreted if and only if it is the trigger of terminal F-movement for some constituent.

In Abels’ terms, ‘strongly deficient features’ are those features that can be checked only via movement (not e.g. via long-distance agreement). According to condition (38), the [OP] feature that triggers A-bar movement of an OP in an A-bar dependency is only interpreted on the terminal head of the chain. Recall that we assume that this OP feature is present on each intermediate phase-head in an A-bar chain. Now, according to condition (38), only on the highest phase-head is [OP] semantically interpreted, whereas intermediate phase-heads encode a purely formal, uninterpretable counterpart of the same feature (see also Abels 2012, 147).

In the remainder of the paper, we refer to the interpretable/uninterpretable opposition in the following way. Interpretable features (also called ‘criterial’ features in Rizzi 2004ff), which are encoded on the highest phase-head in the A-bar chain, are represented in CAPITALS, e.g. [OP]. Uninterpretable features or *formal* features, which are encoded on the intermediate phase-heads in the A-bar chain, are represented in *italics*, e.g. [*op*]. The latter features are thus purely syntactic: no semantic interpretation is associated to them. We suggest that it is precisely this type of feature that cannot be lexicalized by *som*. Put differently, *som* cannot be merged in a C head that only bears formal features (viz. the embedded C in (31b) and (32b) above), whereas it is obligatorily or optionally merged in the C head where the features are actually interpreted (viz. the highest C in (31) and (32)). We thus argue that the distribution of *som* is sensitive to the interpretability of the features on the phase-head.

In the remainder of this section we wish to show how the presence or absence of *som* reflects the distinction between *formal* and *interpretable* features of the CP phase-head, and how the distribution of *som* relates to the properties of A-bar chains. For this purpose we need to address the following open issue: why do the interpretable C features obligatorily require *som* in some cases (short subject A-bar dependencies) but not in others (long-distance and non-subject A-bar dependencies)? We suggest that the obligatoriness of *som* results from a different A-bar configuration than the configuration in which *som* is only optionally present. Let us therefore consider in more detail the different chain types in

which *som* can occur; for ease of exposition, we repeat (31) and (32) as (39) and (40) respectively.

(39) subject extraction

- a. [CP OP **(som)*... [vP t_{OP} ...]]
- b. [CP OP (*som*) ... [vP t_{OP} [vP ... [CP t_{OP} (**(som)*) ... [vP t_{OP} ...]]]]]]

(40) object extraction

- a. [CP OP (*som*) [IP SUBJ ... [vP t_{OP} [vP ... t_{OP} ...]]]]
- b. [CP OP (*som*) [IP SUBJ... [vP t_{OP} [vP... [CP t_{OP} (**(som)*)... [vP t_{OP} [vP... t_{OP} ...]]]]]]]]

In short A-bar dependencies, *som* is obligatorily present only in subject extractions. This is the only case that reflects the configuration given in (30ii) above: *som* lexicalizes a head whose specifier is the OP, which locally c-commands its trace in A-position (SpecvP). All other A-bar dependencies considered so far (i.e. short object extractions and long-distance extractions) do not display this configuration: either the OP c-commands a trace in A-bar position (short object extractions, and the higher clause of long-distance extractions), or the trace in A-position is C-commanded by a *trace* of the OP (the lower clause of long-distance subject extractions), see (39) and (40) above.

From a crosslinguistic point of view, it seems to be the case that if an argument is A-bar moved from an A-position, the probe on the closest phase edge is subject to a spell-out requirement.²³ For instance, we have seen that in some languages a special complementizer must be merged in the position of the probe (i.e. the c-commanding C head) in case a subject is extracted. This is the case of *qui* insertion in French and CA in Flemish Dutch and Bavarian (see section 4.2).

In the case of Norwegian and Swedish, however, the lower C head in long-distance extractions is not – in fact must not – be morphologically realized (*som* is ungrammatical in the left periphery of the lower clause of long-distance extractions). We suggest that this is so because the probing C head in these languages does not encode the interpretable feature [OP], but only its formal counterpart [*op*]. In fact, *som*, which is specified as [OP], can never lexicalize a head that encodes [*op*].

By contrast, if the head probing A-bar movement of an argument encodes interpretable features, i.e. [OP], insertion of *som* is either possible or obligatory. As for the obligatory case, we propose that a spell-out requirement demands that the C head that encodes [OP] is obligatorily spelled-out whenever it probes movement of an argument from an A-position that it directly c-commands (see above). Optional insertion of *som* is instead explained as follows. The spell-out requirement illustrated above does not apply in case a C head that encodes [OP] probes movement out of an A-bar position. In this case, insertion of *som* is not ungrammatical but optional. Optional *som* is indeed attested in short object A-bar dependencies and in the higher clause of long-distance A-bar dependencies, i.e. in case the C head encoding [OP] probes extraction out of an A-bar position.

To summarize, we have argued that (i) *som* is a complementizer that encodes a feature [OP] (it is a marker of A-bar dependencies), and (ii) insertion of *som* is sensitive to the interpretability of the features on C: it can only spell out the interpretable feature [OP], but not its formal counterpart [*op*]. Put differently, the insertion of *som* is sensitive to features

²³ In fact, this condition is too strong because, as it is, it predicts that the vP head probing object A-bar movement should be spelled-out, which is not the case. See the main text for a further discussion.

that are not deleted in the course of the derivation (interpretable features). It is precisely for this reason that *som* can be merged in a C position in which interpretable [OP] is checked by an OP in its specifier. Only when features on C are deleted in the course of the derivation (because uninterpretable, i.e. on lower C heads), is *som* ungrammatical.

If instead we had assumed that *som* only encodes nominal features, similarly to what the Expletive Hypothesis argues (see section 2.3), we would not be able to explain why *som* is optional in the higher clause of long-distance subject and object A-bar dependencies, as well as in short object A-bar dependencies. Moreover, our claim that *som* is sensitive to the interpretability of CP phase-head features explains why *som* is ungrammatical in the lower clause of long-distance A-bar dependencies.

A further issue deserves attention, namely the different distribution of *som* in *wh*-Qs in Norwegian and Swedish. We address this issue in the next section.

5. Norwegian vs. Swedish

As mentioned in section 2.1, Norwegian differs from Swedish in that *som* in Norwegian cannot appear in short object *wh*-Qs (or in the higher clause of long-distance *wh*-Qs, cf. table 2), whereas in Swedish it can. This difference was already noted by Taraldsen (1986). The example that he uses to illustrate the impossibility of *som* following an object *wh*-phrase is given here in (41). The corresponding ‘S-structure’ is given in (42).

- (41) **Vi vet hvem som Marit snakker med.* [Norwegian]
 we know who SOM Mary talks with
 ‘We know who Mary is talking with.’ (Taraldsen 1986, 50)
- (42) ... [**hvem**_i [_S **som**_i [_S Marit snakker med **e**_i]]] (Taraldsen 1986, 152)

Taraldsen (1986) argues that whereas *hvem* ‘who’ is an OP, *som* is not an OP, but rather an expletive element; notice that *who* and *som* cannot both be OPs as that would violate the ban on *vacuous quantification*, according to which each variable is bound by exactly one OP, and any OP that does not bind a variable is regarded as vacuous. The trace **e**_i in (42) is bound by *som* and because *som* is not an OP, the trace is anaphoric. Being anaphoric, the trace thus needs to be bound in its governing category (Condition A of the Binding Theory), which in the case of (42) is S.²⁴ However, the trace is free in S, as a result of which Condition A of the Binding Theory is violated. Therefore, sentence (41) is ungrammatical. Notice that the corresponding subject *wh*-Q in (43) is grammatical, because the trace is bound by *som* in its governing category: S’.

- (43) *Vi vet hvem som snakker med Marit.* [Norwegian]
 we know who that talks with Mary
 ‘We know who is talking with Mary.’ (Taraldsen 1986, 150)
- (44) ... [**hvem**_i [_S **som**_i [_S **e**_i snakker med Marit]]] (Taraldsen 1986, 151)

²⁴ See Taraldsen (1986, 159ff.) for details on assigning governing categories (see also Chomsky 1981).

To account for the grammaticality of sentences like (41) in Swedish, Taraldsen proposes to analyze *som* as an OP in those cases. Specifically, he mentions that the only way in which the S-structure in (42) is compatible with the Binding Theory is if *som* is analyzed as an OP. However, if so, why does the structure in (42) not violate the ban on vacuous quantification, as both OPs correspond to the single trace e_i ? Specifically, the OP *som* restricts the reference of e_i , as a result of which e_i cannot function as a variable to the OP *hvem*. The latter therefore becomes vacuous.²⁵

To answer that question, Taraldsen argues that in some languages, pronouns can in fact be used as variables. Crucially, in such cases, OP *som* does not necessarily restrict the referent of its variable (e in (44) above), because this variable is a pronoun and pronouns do not need fixed reference. Therefore, the pronoun can still function as a variable to the OP *hvem*, and there is no longer a violation of the ban on vacuous quantification. This analysis ultimately predicts that languages that have resumptive pronouns allow constructions like (41), whereas languages that do not have resumptive pronouns, do not allow such constructions. Swedish does in fact have resumptive pronouns, whereas Norwegian does not.

Even though this analysis nicely reduces the difference between Swedish and Norwegian with respect to the grammaticality of (41) to an independent difference between the two languages, namely the absence or presence of resumptive pronouns, we will not pursue this line of reasoning. The main reason for that is that there does not seem to be a one-to-one correlation between the possibility of having resumptive pronouns and allowing *som* in the projection hosting the *wh*-OP in object *wh*-Qs. A search within the ScanDiaSyn database shows that in most Northern Norwegian and Trøndelag dialects, as well as in some Western Norwegian dialects, resumption (with subject topicalization) is accepted, whereas in Eastern Norwegian dialects resumption is generally ungrammatical. Nonetheless, *som*-insertion after a *wh*-pronoun in object *wh*-Qs is ungrammatical in all Norwegian varieties (see Vangsnes 2005, fn.5 for a couple of exceptions).

Without providing a full analysis of the difference between Norwegian and Swedish with respect to the grammaticality of having *som* in an object *wh*-Q (or in the higher clause of long-distance *wh*-Qs) and following Barbiers (2006, 2009), we sketch the outlines of an explanation for this difference in terms of the contrast between the notions *(un)grammatical* and *(un)realized*. Specifically, Barbiers (2006, 2009) suggests that part of (syntactic) variation (within a language) cannot be reduced to language-internal properties, and proposes a distinction between ungrammatical and unrealized syntactic structures. Ungrammatical structures are structures that violate general syntactic principles of the grammar, whereas unrealized structures are structures that can in principle be generated by the grammar (i.e. they are possible structures), but that happen to be unrealized in a certain language variety. The question of why in a certain language variety a structure is realized or unrealized should then not be answered in terms of language-internal properties, but rather in terms of sociolinguistic circumstances.

Applying this distinction to the issue under discussion, we could say that even though the presence of *som* in object *wh*-Qs (and in the higher clause of long-distance *wh*-Qs) is allowed by the grammar of both Norwegian and Swedish (i.e. *som* immediately follows an

²⁵ As for the notion of (semantic) variable, Taraldsen (1986, 164) proposes the following definition: “a (semantic) variable with respect to the operator O_i [is] a α c-commanded by O_i whose reference is unrestricted in the domain of O_i .” Given this definition, the trace in (44) can act as a variable for the OP *hvem*, because its reference is not restricted by its binder expletive *som*.

A-bar OP, cf. (30)), this option is realized in Swedish but unrealized in Norwegian. We leave for future (sociolinguistic) research the question of why this option is realized in Swedish and not realized in Norwegian.

6. Summary and conclusion

The main goal of this paper was twofold. First, we showed on the basis of novel empirical data regarding the distribution of *som* in Scandinavian long-distance embedded A-bar dependencies (specifically restrictive relative clauses and *wh*-questions), that existing proposals of the distribution of *som* in short A-bar dependencies do not extend to account for the distribution of *som* in long A-bar dependencies. Second, we sketched the outlines of a new analysis of the distribution of *som* in Scandinavian A-bar dependencies.

Taking into account comparative as well as diachronic considerations, we argued that *som* is a complementizer – derived from the equative marker – that marks A-bar dependencies. It was furthermore suggested that the subject/object asymmetry regarding the distribution of *som* in short A-bar dependencies in Mainland Scandinavian as well as the distinction between optional *som* and obligatory *som* in short and long-distance A-bar dependencies in Mainland Scandinavian should be accounted for in terms of the (non-) lexicalization of different feature specifications of CP phase-heads. More specifically, we have argued that the insertion of *som* is sensitive to the distinction between interpretable and formal features in A-bar chains (Abels 2012). We furthermore proposed that even though the presence of *som* in short embedded object *wh*-Qs and in the higher clause of long-distance embedded *wh*-Qs is allowed by the grammars of both Swedish and Norwegian (i.e. it is grammatical), only Swedish chooses to realize this option, whereas in Norwegian these structures are unrealized (cf. Barbiers 2006, 2009). We have put forward the idea that the obligatoriness of *som* depends on the structural conditions of the A-bar chain. Specifically, *som* must merge in a position that is specified by an OP that is moved from an A-position. This condition descriptively accounts for the obligatoriness of *som*, thus for the subject/object asymmetry that is attested in short A-bar extractions, but not in long-distance extractions, in Mainland Scandinavian. The same condition rules out the possibility of randomly merging *som* in other, structurally different configurations (e.g. in object extractions). By suggesting that this condition holds, and that non-obligatory *som* is subject to language specific realization rules, we have offered a different account for the distribution of *som*, which avoids the theoretical problem of positing more lexical entries for the same morphological item (i.e. *som* as an expletive, as an OP, as a complementizer, etc.).

The contributions of this paper are thus mostly empirical in nature. It presents new data resulting from a systematic investigation of the distribution of *som* in Scandinavian, and shows that (obligatory) *som* is of a different nature than has previously been thought.

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