

Unbounded Dependency Constructions in Germanic

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1 Introduction

Unbounded dependency constructions canonically involve displacement of a phrase across a finite clause-boundary. In the following English example, the *wh*-phrase *which book* originates as a complement of *like* and surfaces at the beginning of the clause:¹

- (1) Which book₁ do you think Mary likes ___₁?

Such dependencies are thus usually filler-gap dependencies with the fronted XP being (usually, but see sections 4.4 and 4.5 below) overt and the position it originates from being phonologically empty. The fronted XP occupies an operator/discourse-related position, and constructions involving such fronting are termed instances of long A'-movement within Generative Grammar. All Germanic languages have unbounded dependency constructions of the type in (1); as we will see below, however, long A'-dependencies in Germanic can come in different forms that deviate in various ways from the variant in (1). Given that long A'-dependencies are one of the major research topics in syntactic theory, Germanic languages represent a particularly fruitful area for the exploration of the nature and limits of these dependencies.

This chapter is organized as follows: In section 2, I will introduce the major types of A'-dependencies and some of their salient properties before addressing basic analytical issues in section 3. In section 4, I discuss alternatives to long extraction, and section 5 deals with various remarkable locality-related properties of long extraction in Germanic.

2 Types of (long) A'-dependencies and their major properties

The three major types of long A'-dependencies are *wh*-movement as in (1) and relativization and topicalization as illustrated in (2):

- (2) a. This book₁, I think Mary likes ___₁. *topicalization*
b. the book which₁ I think Mary likes ___₁ *relativization*

A brief terminological remark: The term *topicalization* does not imply that the fronted elements have the function of topics. In all Germanic languages, topicalized constituents can have various topic functions (aboutness, discourse, contrastive) as well as different foci functions (information focus and contrastive focus). For information-structural differences between short and long topicalization, see section 3.2 below.

2.1 Shared properties of long A'-dependencies

Since Chomsky (1977: 555) the three constructions have been grouped together as instances of A'-movement because they share a number of important properties: First, they are potentially

¹ In what follows, the filler and the gap are coindexed by means of numerical subscripts. For coreference relationships alphabetical subscripts are used.

unbounded, i.e., can span an in principle unlimited number of clauses; second, they are subject to the same locality restrictions, viz., the island constraints discovered by Ross (1967). For instance, the antecedent/filler of these constructions cannot be related to a gap within an adjunct clause:²

- (3) a. *Which politician₁ did you leave the room because John praised __₁?
 b. *This politician₁, you left the room because John praised __₁.
 c. *the politician who₁ you left the room because John praised __₁

Third, these unbounded dependencies are usually analyzed as involving a sequence of smaller steps, viz., the filler is assumed to make stopovers in intermediate (SpecCP and possibly SpecvP) positions. Finally, information contained within the filler can be interpreted in lower positions, i.e., the constructions display so-called reconstruction effects. In the following example, the variable contained in the filler is bound by the embedded subject:

- (4) [Which of his_i pictures]₁ do you think every boy_i likes best __₁?

All Germanic languages have these three types of unbounded dependencies (for restrictions in German w.r.t. clause-boundedness, see section 5.1 below). In what follow, I will focus on these three types as they have received the most attention in the literature. For discussion of further A'-constructions in English such as comparative deletion, clefts, exclamatory and negative NP-extraction, see, e.g., Postal (1998); for long-distance scrambling in German, see Frey (2006).

2.2 Unbounded dependencies – the left periphery

The three constructions differ in a number of interesting respects both language-internally as well as cross-linguistically with respect to inversion and the shape of the left periphery (form of the displaced element, overtiness of attracting heads, co-occurrence restrictions).

2.2.1 Unbounded dependencies and inversion in the final clause

The three major constructions show certain differences with respect to subject-verb inversion in the clause targeted by movement when a non-subject is fronted. In English matrix clauses, only *wh*-movement shows inversion, while subject and verb occur in canonical order in the other two constructions. The other Germanic languages pattern differently in this respect: Both topicalization and *wh*-movement involve inversion in matrix clauses, while relativization does not.³

- (5) a. Wen₁ glaubst du, dass Maria __₁ liebt?
 who.ACC believe.2SG you that Mary love.3SG
 'Who do you believe that Mary loves?'
 b. [Den Maler]₁ glaubst du, dass Maria __₁ liebt.
 the.ACC painter believe.2SG you that Mary love.3SG
 'The painter, you believe that Mary loves.'

² While extraction from so-called strong islands like the adjunct island in (3), relative clauses and complement clauses to nouns as well as (sentential) subjects is prohibited across the board, so called weak islands (like embedded questions) allow argument extraction/extraction of referential/D-linked elements but block extraction of adjuncts/non-referential/non-D-linked elements. See Szabolcsi (2006) for discussion.

³ For so-called V2-relatives in German, see Gärtner (2000).

- c. ein Maler, den₁ du glaubst, dass Maria __₁ liebt
 a painter who.ACC you believe.2SG that Mary love.3SG
 ‘a painter who you believe that Mary loves’

German

With embedded *wh*-clauses and topicalization, there is no inversion in Standard English. With embedded questions, there is generally no subject-verb inversion in Germanic, except in Irish English, African American and Appalachian English and (optionally) in Afrikaans (cf. Harbert [2007: 475]); in Yiddish and Icelandic there is inversion with expletive subjects, cf. Vikner (1995: 76) and Vikner (this volume). With embedded topicalization, subject-verb inversion is possible in all Germanic languages except English (and perhaps Dutch, where embedded verb-second is not generally available), cf. Vikner (1995: chapter 4), see the following example from German (in all other Germanic languages, including English, embedded topicalization follows the declarative complementizer, while complementizers and fronted verbs are in complementary distribution in German):

- (6) Ich glaube, [dieses Buch]₁ denkt der Hans, dass Maria __₁ mag
 I believe.1SG this book think.3SG the.NOM John that Mary like.3SG
 ‘I believe this book, John thinks that Mary likes.’

German

2.2.2 Unbounded dependencies and the shape of the left periphery

While topicalization simply involves a fronted unmarked DP all across Germanic, *wh*-movement and relative clauses display a certain variation with respect to the expression of operators and functional heads.

Starting with *wh*-movement, while matrix questions generally involve fronting of an XP plus inversion (when a non-subject is fronted), embedded questions usually do not involve any inversion and the C-position remains empty; in some Germanic languages, though, the *wh*-phrase can be followed by a complementizer. While impossible in Standard English because of the doubly-filled Comp filter (cf. Chomsky and Lasnik [1977]), in non-standard English (and Belfast English, cf. Harbert [2007: 435]) the *wh*-phrase can co-occur with the declarative complementizer:

- (7) They discussed a certain model, but they didn’t know which model that they discussed.

(Baltin [2010: 331])

The situation in German is similar. While impossible in the standard language, many, especially the southern dialects like Bavarian or Alemannic allow for doubly-filled Comps, cf., e.g. Bayer (1984), and Bayer and Brandner (2008). The same is also possible in Flemish and various other Dutch varieties, Middle English, Middle Danish, and Colloquial Copenhagen Danish, cf. Vikner (1995: 119f.) as well as in Norwegian and Swedish (Harbert [2007: 427], Larsson [2014]). In Dutch varieties, one can even find co-occurrence of the *wh*-phrase with two complementizers, viz., ‘if’ and ‘that’, cf. Zwart (2000: 361).

Turning to headed relative clauses (which are post-nominal and head-external in Germanic⁴), in Standard English, relativization normally involves either a relative pronoun (*who/which*) or the

⁴ English and Dutch appositive relatives like the following have been argued to represent double-headed types, cf. Bhatt (2015: 712) (cf. Vries [2002: 189] for Dutch data):

declarative complementizer *that* (for a reanalysis of *that* as a relative pronoun, see Broekhuis and Dekkers [2000] and Kayne [2010]). Co-occurrence of both elements can be found in non-standard varieties (as well as in Old and Middle English, cf. Harbert [2007: 434]):

- (8) It's down to the community in which that the people live. (Gelderen [2013: 59])

Doubly-filled-Comp violations of this type are also found in Gothic, Frisian (Harbert [2007: 434]) and in Dutch varieties (with both *wh*- and D-pronouns), cf. Zwart (2000: 357f.). Dutch varieties that use a *wh*-pronoun in relativization additionally allow for the combination of relative pronoun and 'if', cf. Zwart (2000: 358ff.), Boef (2012: 141). Additionally, Dutch varieties also allow for *that*-relatives, cf. Boef (2012: 141); in Afrikaans, relatives involve invariant *wat* for subjects and objects, while for oblique positions the relative pronouns *wie/wat* are used (Harbert [2007: 443ff.]). While relatives in Standard German use the relative D-pronoun only, many German varieties allow for the co-occurrence of the relative D-pronoun with *da* 'there'/'was' 'what'/'wo' 'where', cf. Weise (1916), Bayer (1984), Fleischer (2004). The particle *wo* lit. 'where' (to be distinguished from the homophonous relative adverb) also occurs on its own as a relative marker in Alemannic varieties (cf. van Riemsdijk [1989], Salzmann [2006], van Riemsdijk [2008]):

- (9) d Frau, wo immer z spaat chunt
 the woman C always too late come.3SG
 'the woman who is always late' Zurich German

Another invariant complementizer found in German varieties is *was* 'what' (cf. also Yiddish *vos*). *Wh*-relatives (based on *welch*- 'which') are restricted to the standard language (and Yiddish, which has *velkh* and *ver*) and never co-occur with a complementizer, cf. Fleischer (2004). Relative clauses without any kind of marking, viz., zero relatives, do not seem to exist in either German or Dutch. They are prominent in Standard English non-subject relatives; in non-standard English, we also find contact relatives for subject relativization, cf. Bhatt (2015: 737ff.):

- (10) There's a girl (who) wants to see you.

In Scandinavian languages relative clauses are primarily introduced by an invariant complementizer *som/sem* 'as'. It can be omitted in (restrictive) object (but not subject) relatives in Mainland Scandinavian (Harbert [2007: 450, 464f.]) but not in Icelandic (cf. Thráinsson [2007: 447]). In Danish and Norwegian, we alternatively find *der* in subject relativization. Swedish and Danish also have *wh*-pronouns for oblique/prepositional relations (Harbert [2007: 425, 447f.]). Icelandic allows for the combination of *sem* + 'that', cf. Vikner (1995: 122), as does Danish, cf. Nyvad et al. (2017: 463). Faroese allows zero relatives for both subjects and objects, cf. Harbert (2007: 456, 465). In some languages, a formal difference between what look like subject and object relative pronouns may in fact rather result from the subject form being an agreeing complementizer, cf. Harbert (2007: 430ff.).

i) I read the New Yorker yesterday, [which magazine is one of the finest in the country].
 For free relatives, cf. Harbert (2007: 466ff.).

3 Basic analytical issues

3.1 The nature of the landing site

The classical analysis of unbounded dependencies involves A'-movement to a position in the left periphery via a stopover in the intermediate SpecCP position. For English *wh*-movement, this looks as follows (for evidence for an additional stopover in SpecvP, cf. Fox [1999]):

(11) [CP Who₁ did you say [CP __₁ that Mary likes __₁]?

The landing site of English *wh*-movement and relativization is usually identified with SpecCP (accompanied by T-to-C-movement in the former), while topicalization is generally assumed to target a lower position between TP and CP. While earlier work took this to be an adjunction position (adjunction to TP), in more recent approaches, the landing site of topicalization is identified with the specifier of an additional functional head in the left periphery, e.g. SpecTopP, cf. Branigan (2011). Apart from cartographic considerations that may favor distinct landing sites for different types of A'-movement (cf. Rizzi [1997], Branigan [2011]), evidence for positing different landing sites for topicalized material than *wh*-/relative operators comes from the fact that topicalization inside relative clauses is permitted (to some extent), cf., e.g., Douglas (2016: 71):

(12) a man [to whom]₂, liberty₁, we should never grant __₁ __₂

Unlike *wh*-movement and relativization, topicalization in English can affect several constituents, in which case the first XP functions as a topic and the second one as a focus, cf. Douglas (2016: 85):

(13) That book₂, to JOHN₁ Mary gave __₂ __₁ in 1979.

In the other Germanic languages, it has generally been assumed that unbounded dependencies all target the same position in the left periphery because unlike in English they are in complementary distribution. This position is traditionally identified with SpecCP. In cartographic work, however, *wh*-movement and topicalization usually target different projections even in these languages (e.g. Branigan [2011]; but cf. also Müller [1995] for an early non-cartographic proposal to this effect).

3.2 Differences between local and long-distance A'-movement

Traditionally it has been assumed that the landing sites of local and long-distance movement are the same, viz., SpecCP. There is some reason to believe, though, that this characterization is too simple. At the very least, there are asymmetries between local and long-distance topicalization that need to be accounted for somehow. It has been observed for German that next to information-structurally marked fronting like proper topic or focus fronting there are also cases where the fronted element is information-structurally neutral. This may involve fronting of unstressed elements and sentence adverbials as in (14), cf. Frey (2006: 240):

(14) Leider₁ hat __₁ keiner dem alten Mann geholfen.
unfortunately have.3SG no.one the.DAT old man helped
'Unfortunately, nobody helped the old man.'

According to Frey, such elements reach the pre-field by means of a different operation, so-called formal fronting, which affects the highest element in the middle field. This may include sentence adverbials, the subject⁵ and scrambled non-subjects. Crucially, long-distance movement cannot be information-structurally neutral but rather necessarily involves contrast, according to Frey (2006). This can be shown by the fact that long-distance topicalization of sentence adverbs, which cannot be contrasted, is ungrammatical, see (15) (the sentence is, of course, acceptable with matrix construal of the adverb; see also Féry, this volume for the relationship between information structure and syntax):

- (15) *Leider₁ sagte Karl, dass __₁ keiner dem alten Mann geholfen hat
 unfortunately said Carl that no.one the.DAT old man helped have.3SG
 ‘Unfortunately, Carl said that no one helped the old man.’

Because of this asymmetry it has been argued that formal fronting targets a different position than long A'-movement, viz. the neutral SpecFinP rather than SpecCP/ForceP/KontrP in a cartographic system (cf. Frey [2006]).

4 Alternatives to long-distance movement

Arguably the most interesting aspect of unbounded dependencies in Germanic is the fact that there is a large number of alternative constructions. These alternatives have largely the same meaning but usually differ in important syntactic respects from the canonical unbounded constructions.

4.1 Extraction from Verb-second clauses

In German, *wh*-movement and topicalization can also take place from verb-second clauses next to extraction across *dass* (which entails verb-final):

- (16) a. Wo₁ glaubst du, dass sie seit 1985 mit ihrem Kind __₁ wohnt?
 where believe.2SG you that she since 1985 with her child live.3SG
 ‘Where do you believe that she has been living with her child since 1985?’ verb-final
- b. Wo₁ glaubst du, wohnt sie seit 1985 mit ihrem Kind __₁?
 where believe.2SG you live.3SG she since 1985 with her child verb-second
- (17) a. [In Bonn]₁ meint Franz, dass sie seit 1985 __₁ wohnt.
 in Bonn think.3SG Franz that she since 1985 live.3SG
 ‘Franz thinks that she has been living in Bonn since 1985.’ verb-final
- b. [In Bonn]₁, meint Franz, wohnt sie seit 1985 __₁.
 In Bonn think.3SG Franz live.3SG she since 1985 verb-second

While the long movement analysis of extraction from V-final structures is uncontested, the analysis of structures with extraction from verb-second clauses has been controversial. An obvious alternative to long extraction is to treat everything of the main clause after the *wh*-word as a V1-

⁵ For this reason, subject initial verb-second clauses have sometimes been analyzed as TPs rather than CPs, cf. Zwart (1997). See also the debate whether local subject questions in English constitute CPs or TPs, cf., e.g. Grimshaw (1997).

parenthetical. Evidence for this reanalysis comes from the fact that V1-parentheticals are independently possible in various positions of the clause, cf. Reis (1995: 46):

- (18) Wo₁ wohnt sie {glaubst du} seit 1985 {glaubst du}
 where live.3SG she believe.2sg you since 1985 believe.2SG you
 mit ihrem Kind __₁ {glaubst du}?
 with her child believe.2SG you

Consequently, (16b) would just be a variant of this with the parenthetical right after the wh-phrase. An argument for a long-distance extraction analysis comes from the observation that the class of verbs that allow long extraction across *dass*, viz., the so-called bridge verbs (like, e.g., *think*, *believe*, *say* etc.), is largely identical to the class of verbs that allow for embedded verb second, cf. Featherston (2004). One of the challenges for an extraction analysis comes from what Reis calls the V2 route restriction: Extraction may occur via V2 and into V2-clauses only; these conditions are violated in the following examples (adapted from Reis [1995: 50]):

- (19) a.*Ich weiß nicht, wo₁ er meint, wohnt sie __₁.
 I know.1SG not where he think.3SG live.3SG she
 ‘I don’t know where he thinks she lives.’
 b.*Wo₁ meint er, dass Peter geglaubt hat, wohnt sie __₁?
 where think.3SG he that Peter believed have.3SG live.3SG she?

This follows straightforwardly under a parenthetical analysis because in both cases the material between the fronted wh-phrase and the final V1 clause is not a felicitous parenthetical. Accounting for this restriction under an extraction analysis has generated a large number of proposals; for a recent contribution with further references, cf. Müller (2010). Another possible argument against an extraction analysis comes from the fact that in present day Standard German, long extraction across *dass* is unacceptable for many speakers, as discussed in section 5.1 below, while extraction from V2-clauses is readily available for all speakers. This may be unexpected if both constructions involve the same extraction mechanism. Still, the issue is far from settled, and the reader is referred to the above-mentioned publications for further theoretical discussion; for empirical evidence in favor of the parenthetical analysis, see Kiziak (2010).

A parenthetical analysis has also been proposed for extraction from V2-clauses in Danish and Swedish, cf. Hrafnbjargarson et al. (2010: 301f.). In this case, the structures look exactly as in German, while normally embedded verb second occurs in the presence of a complementizer in these languages. For the Faroese equivalent of the German construction, however, the authors propose an extraction analysis because unlike in Swedish/Danish, variable binding by a quantifier inside the alleged parenthetical is grammatical, suggesting that the V1-clause is syntactically visible:

- (20) [Mamma hansara_{i/j}]₁ segði hvør ein maður_i __₁ hevði ikki lisið bókina.
 mother his said each one man had not read book.the
 ‘His_i mother, each man_i said (that) had not read the book.’

As for extraction from V2 after the complementizer, it is blocked in all Scandinavian languages if the V2-clause is non-subject initial (e.g. involves an embedded topic). This is unsurprising as these are classical topic islands. Interestingly, however, extraction from subject-initial embedded V2-clauses is grammatical in Faroese, Icelandic and (certain varieties of) Norwegian. Vikner (1995) accounts for the extractability in Icelandic with the assumption that there is no proper V2 (i.e., V-to-C-movement) in these cases but rather only V-to-I movement; the subject is thus in SpecTP so that no topic island intervenes (while in the other languages there is V-to-C-movement with the subject in the topic position). While a possibility for Icelandic, where V-to-I has been independently argued for, this is not an obvious solution for Norwegian, where this movement is not independently attested. However, if the verb occupies the same position in all Scandinavian embedded V2-clauses, it is no longer clear why some allow for extraction while others do not. See Hrafnbjargason et al. (2010) for more empirical details.

4.2 Scope marking/partial movement

Another alternative to long extraction across *that* is the partial movement/scope-marking construction. In this construction, an invariant scope marker occupies the scope position of the *wh*-dependency, while the *wh*-phrase (which has exactly the same form as *wh*-phrases in long extraction and can thus be of greater complexity than in the example below) remains in an intermediate SpecCP position. It has been most prominently discussed in German but can be found in typologically diverse languages (cf. Fanselow [to appear] for a recent overview):

- (21) Was glaubst du, wen₁ Maria __₁ liebt?
 what believe.2SG you whom Mary love.3SG
 ‘Who do you believe Mary loves?’

In German the construction is only found in *wh*-movement, but depending on the implementation, partial movement may also exist in relative clauses, cf. Boef (2012) on Dutch and the discussion of the copy construction below. Unlike in other languages, partial movement in German does not allow the associate of *was* to be a yes-no-question.

While semantically very similar to long extraction, there are certain asymmetries that are noteworthy (cf. Felser [2001: 11f.]): First, unlike long extraction, the scope marking construction is sensitive to negative island effects:

- (22) a. Wen₁ glaubst du nicht dass Maria __₁ getroffen hat?
 whom think.2SG you not that M. met have.3SG
 ‘Who don’t you think Maria has met?’
 b.*Was glaubst du nicht wen₁ Maria __₁ getroffen hat?
 what think.2SG you not whom M. met have.3SG

Second, the class of predicates that permits the scope marking construction is not coextensive with the class of verbs allowing long extraction; that is, not every long-distance movement structure has a scope marking correlate, and not every scope-marking sentence has a long-distance movement counterpart. The following example illustrates the latter asymmetry:

- (23) a. Was hat Hans entschieden wer₁ __₁ morgen kommen soll?
 what have.3SG H. decided who tomorrow come.INF should.3SG
- b. *Wer₁ hat Hans entschieden dass __₁ tomorrow kommen soll?
 who have.3SG H. decided that morgen come.INF should.3SG

There are two main approaches to partial movement: The direct dependency approach and the indirect dependency approach (which both come in various flavors). In the direct dependency approach (cf. McDaniel [1989]) the invariant *was* and the *wh*-phrase are part of the same chain; *was* marks the scope of the *wh*-phrase, which is assumed to replace *was* at LF (*was* is thus assimilated to an expletive like *there* in A-chains). There is also a version of the direct dependency approach that treats it as a subcase of the copy construction discussed below. In the indirect dependency approach (simplifying somewhat), *was* is analyzed as the standard *wh*-word for clausal complements. The relationship between *was* and the *wh*-CP is then similar to that between a propositional pro-form and its clausal associated; i.e. it can be considered a monosentential counterpart of (18):

- (24) What do you think? Who came?

A comparison of the two approaches is beyond the scope of this paper; while both have their pros and cons, both generally seem capable of capturing the relevant data, see Fanselow (to appear).

4.3 Wh-copying

In the so-called copy construction, which is found in German, Frisian, Afrikaans and Dutch varieties, the *wh*-phrase appears multiple times, viz., in the landing site as well as in all intermediate SpecCP positions:

- (25) Wêr₁ tinkst wêr₁'t se __₁ wennet?
 where think.2SG where-COMP she live.3SG
 'Where do you think she lives?' *Frisian*

There is a long tradition going back to Hiemstra (1986) to analyze the copy construction as involving the realization of several links of a movement dependency. This seems straightforward under an approach to movement that involves copying, as has become standard since Chomsky (1995). However, since normally only the highest (or, in *wh*-in-situ, the lowest) link is phonetically realized, extra assumptions are necessary to allow for copying. According to one popular approach, cf. Nunes (2004), multiple copy-spell-out results from reanalysis of intermediate copies with intermediate C-heads. As a consequence of this, the *wh*-phrase is no longer visible for the linearization mechanism so that it escapes chain reduction (which is otherwise necessary to obtain non-conflicting ordering statements). An argument for this view comes from the observation that copying tends to be restricted to simple *wh*-pronouns, while doubling of full *wh*-phrases is usually rejected, cf. Felser (2004: 550):

- (26) *[Welchen Mann]₁ glaubst du, [welchen Mann]₁ sie __₁ liebt?
 which man believe.2SG you which man she love.3SG
 'Which man do you believe that she loves?' *German*

There is, admittedly, a grey area where judgments vary. Light PPs, for instance, are often found acceptable:

- (27) %*[An wen]_i glaubst du, [an wen]_i sie ___i denkt?*
of whom believe.2SG you of whom she think.3SG
‘Who do you believe that she thinks of?’

Given that in Afrikaans copying of full *wh*-phrases is possible, cf. Plessis (1977), however, the reanalysis approach cannot be generally correct. For more discussion about the restrictions on copying, see Fanselow and Mahajan (2000) and Felser (2004).

There is a line of research, starting with Hiemstra (1986), that argues that scope marking and *wh*-copying should receive a unified account. The basic idea is that the two constructions only differ in the amount of material that is copied of a *wh*-phrase. The scope marking construction results if only the *wh*-feature is copied (which is then spelled-out by the most unmarked *wh*-word), cf. Cheng (2000) for a revival of this idea. The most systematic approach to *wh*-copying and scope marking is proposed by Barbiers et al. (2010), who focus on variation in *wh*-chains in Dutch varieties. They observe that the first member of the *wh*-chain is always less specific than the second one. They argue that this generalization follows from partial copying; for the proposal to work, pronouns must be spell-outs of phrases. They assume that pronouns have rich internal structure:

- (28) [DP D [_{PhiP} Phi [_{QP} Q]]]

Depending on how much of that phrase is affected by copying, different types of *wh*-chains emerge. It is assumed that QP is realized as *wat*, PhiP as *wie* and DP as *die*. This correctly predicts the possibilities *wat—wie*, *wat—die* and *wie—die*: The first option results if the *wh*-pronoun is only a PhiP from which the QP is extracted; the other options obtain if the *wh*-word is a DP and either PhiP or QP are extracted. Because of partial copying, the reverse order of *wh*-words is ruled out: **wie—wat*.

Interestingly, relative clauses in Dutch varieties display a similar pattern. Boef (2012) convincingly demonstrates that the partial copying approach can be fruitfully extended to this empirical domain as well.

Partial copying also seems to be at work in certain German patterns identified by Fanselow and Cavar (2001), where the *wh*-phrase in the scope position is a proper subset of the lower *wh*-phrase (rather than just the scope marker *was*):

- (44) *Wen denkst du [wen von den Studenten]_i sie ___i mag?*
who think.2SG you who of the students she likes?
‘Who of the students do you think she likes?’

Simplifying somewhat, approaches in terms of copying essentially assume that *wh*-copying and scope marking are syntactically very similar to regular long extraction. We have already seen evidence that there are certain non-trivial differences between long extraction and scope marking that cast doubts on this view. Importantly, at least in German there are also systematic differences between the copy construction and long extraction on the one hand as well as differences between

the copy construction and scope marking on the other. This calls a unification/a parallel treatment of the three constructions into question.

As for the copy construction and long extraction: As discussed in Felser (2004: 555ff.), the two constructions differ in the verb classes they occur with (copying is, e.g., impossible with factive verbs) and their sensitivity to negative islands:

- (29) a. Wen₁ glaubst du nicht, dass sie __₁ liebt?
 whom believe.2SG you not that she love.3SG
 ‘Who don’t you believe that she loves?’
- b. *Wen₁ glaubst du nicht, wen₁ sie __₁ liebt?
 whom believe.2SG you not whom she love.3SG

Furthermore, the copying construction is incompatible with *wh*-in-situ and displays different scope properties (in the interaction with other quantifiers).

As for differences between partial movement and the copy construction, they do not occur with the same set of verbs, cf. Felser (2004: 552):

- (30) a. *Was scheint es, wen₁ Hans __₁ geschlagen hat?
 what seem.3SG it who H. hit have.3SG
- b. ?Wen₁ scheint es, wen Hans __₁ geschlagen hat?
 who seem.3SG it who H. hit have.3SG

Furthermore, while copying of full phrases is rather restricted in the copy construction (see above), the *wh*-phrases in the scope marking construction can be arbitrarily complex:

- (31) Was glaubst du, [welchen Mann] sie __₁ liebt?
 what believe.2SG you which man she love.3SG
 ‘Which man do you believe that she loves?’

Perhaps the most serious problem for the (partial) copying account is the fact, stressed in Pankau (2013), that there are cases in German where the upper copy is more complex than the lower one:

- (32) [Mit welchem Mann] glaubst du [mit wem] sie tanzt?
 with which man believe.2SG you with who.DAT she dance.3SG?
 ‘With which man do you believe she dances?’

4.4 Resumption

In some Germanic languages, unbounded dependencies can involve resumption (for a discussion of Hanging Topic and Contrastive Left Dislocation, which bear similarities to resumption, see Harbert [2007: 478-481]). Resumptives occur in (spoken) English, but it is usually thought that they do not represent a fully grammatical phenomenon. One can distinguish two types: First, so-called intrusive pronouns occur in positions from where regular movement (leaving a gap) is not possible, i.e., they are a repair device that alleviates the violation of island/locality constraints (a *wh*-island/adjunct

island in the following examples), but the result is usually not considered fully grammatical, see Chao and Sells (1983: 48):

- (33) a. This is the man that Mary couldn't remember if she had seen him before.
b. Which man do they think that if Mary marries him, then everyone will be happy?

A different repair device are so-called processing resumptives. They occur in positions from where movement is generally possible (and thus a gap would be expected). Their acceptability increases the further away they are from their antecedent, see, e.g., Erteschik-Shir (1992: 89):

- (34) a. This is the girl that John likes ___/*her.
b. This is the girl that Peter said that John thinks that Bob likes ___/?her.

It should be pointed out that the claims about the ameliorating effect of intrusive pronouns and the general acceptability of processing resumptives has been called into question by various experimental work, see, e.g., Asudeh (2012: chapter 11), the contributions in Sprouse and Hornstein (2013) and McCloskey (to appear) for discussion and references.

Next to these possibly extra-grammatical resumptives, one does find resumptives in non-standard English in positions from where extraction is usually unproblematic and where processing cannot be at stake (from Prince [1990]):

- (35) I have a friend who she does all the platters.

While frowned upon by prescriptivists, such examples are frequent in colloquial speech. Whether they need to be distinguished from the two previous types is in fact not fully clear. For resumption in earlier stages of English, cf. Harbert (2007: 457).

Among the Scandinavian languages, resumptives are systematically found in Swedish, where they only occur in embedded subject position, cf. Engdahl (1985: 8):

- (36) Vilket ord visste ingen hur *(det) stavas?
which word knew no.one how it is.spelled
lit.: 'Which word did no one know how it is spelled?' *Swedish*

Most Swedish examples with resumptives involve wh-islands; they are much rarer in declarative complements, see Engdahl (1986: 98-99). However, one cannot generally say that Swedish resumptives amnesty locality violations. In fact, the object resumptives that one can find in the literature are probably best analyzed as processing resumptives. The discussion in Asudeh (2012: 35-36) (who discusses data from Zaenen et al. [1981: 681]) and Engdahl [1982: 154, 165]) suggests that they are not more acceptable than gaps and Engdahl (1985: 10) shows that they do not improve locality violations. Subject resumptives have the properties of gaps in that they can occur in ATB-contexts (Zaenen et al. [1981: 681]) and license parasitic gaps (Engdahl [1985: 7, 38-39]):

- (37) Det var den fången som läkarna inte kunde avgöra om han verkligen
it was that prisoner that doctors.the not could decide if he really
var sjuk [utan att tala med ___ personligen]

was ill without to talk with in.person.

lit.: ‘This was the prisoner that the doctors couldn’t determine if he really was ill without talking to in person.’ *Swedish*

Since Swedish resumptives do not seem to have any influence on the syntax, one obvious possibility is to analyze them as the spell-out of a trace (note that the other Scandinavian languages usually have gaps in embedded subject position). But why Swedish has resumptives in the first place is not clear. Perhaps the resumptives serve to satisfy an EPP-requirement of the embedded clause (viz., that the subject position, SpecTP, be filled). See Salzmann (2017) for detailed discussion about possible causes of resumption.

A fully productive resumption system is only found in Alemannic varieties of German and in Yiddish. In Alemannic, resumptives are found in relativization only (but not in topicalization and wh-movement). They have a somewhat peculiar distribution in that in local relativization they only occur in the relativization of dative objects and more oblique relations, while in long-distance relativization they occur across the board, i.e. also for subjects and direct objects, cf. van Riemsdijk (1989), Salzmann (2017):⁶

(38) a. es Bild, wo niemert (*s) cha zale
a picture C nobody (it) can.3SG pay.INF
‘a picture that nobody can afford’

b. de Bueb, wo mer *(em) es Velo versproche händ
the boy C we (he.DAT) a bike promise.PTCP have.1PL
‘the boy who we promised a bike’

c. s Bild, wo t gsäit häsch, dass *(es) de Peter wett verchauffe
the picture C you say.PTCP have.2SG that it the Peter want.3SG sell.INF
‘the picture that you said Peter wants to sell’ *Zurich German*

Resumption in Swiss German is island-insensitive but displays certain reconstruction effects. For a base-generation analysis that reconciles these properties, cf. Salzmann (2017). Long-distance relativization has been reanalyzed as an instance of resumptive prolepsis, discussed in the next subsection.

Resumption is also systematic in Yiddish relative clauses. What is remarkable about Yiddish is that resumptives can (optionally) occur in subject and direct object position, even though resumptives are crosslinguistically less frequent in these positions, cf. Prince (1990):

(39) mentshn vos a shlang hot (zey) gebisn
people C a snake has them bitten
‘people whom a snake bit’

Yiddish

⁶ Some dialects use gaps for the relativization of datives, see Salzmann (2017: chapter 5) for details.

4.5 Resumptive prolepsis

German and Dutch have an alternative to long extraction where the extracted constituent is governed by a functional preposition (usually corresponding to *of*) and where the position the fronted constituent is related to is occupied by a coreferential pronoun. This construction, termed resumptive prolepsis in Salzmann (2006, 2017), occurs with all types of unbounded dependencies, although it is most frequent with relativization. This is arguably not a coincidence because long-distance relativization is ungrammatical in modern Standard German (and restricted for some speakers of Dutch, see the next section). At least in relativization resumptive prolepsis can thus be considered to be fully grammaticalized:

- (40) a. Von [welchem Maler]_i glaubst du, dass Maria ihn_i mag?
of which.DAT painter believe.2SGyou that Mary him like.3SG
'Of which painter do you believe that Mary likes him?'
- b. ein Maler, von [dem]_i ich glaube, dass Maria ihn_i mag
a painter of who.DAT I believe.1SGthat Mary him like.3SG
'a painter of whom I believe that Mary likes him'
- c. Von [dem Maler]_i glaube ich, dass Maria ihn_i mag.
of the.DAT painter believe.1SGI that Mary him like.3SG
'Of the painter, I believe that Mary likes him.'
- (41) Kort geleden had ik deze droom waar_i;van ik denk dat hij_i belangrijk is.
recently have.PST.1SG I this dream which.of I think.1SG that he important be.3SG
'Not long ago I had this dream of which I think that it is important.' *Dutch*
www.jancvanderheide.com/vragen-aan-jan/144-mb-te-a-kort-geleden-had-ik-deze-droom-waarvan-ik-denk-dat-hij-belangrijk-is, found on January 20, 2015

At first sight, one may take the proleptic constituent (the 'of'-PP) to be an argument of the matrix verb with the pronoun establishing an anaphoric dependency. However, upon closer inspection, this simplistic view fails: The construction is compatible with a very wide range of matrix verbs, casting doubt on the argumenthood of the object. Second, a coreferential element is obligatory, which argues against a mere aboutness relationship. In Salzmann (2017), building on van Riemsdijk (2008), it is proposed that the proleptic object is licensed by predication; the coreferential pronoun is analyzed as a resumptive, and the relationship between the two crucially involves ellipsis.

5 Locality

In this section, I will discuss various locality-related phenomena within Germanic that have received prominent discussion in the literature.⁷

⁷ For reasons of space, I cannot address superiority effects, viz., the rigidity of the order of *wh*-phrases in multiple questions. While most Germanic languages require fronting of the subject *wh*-phrase with the object *wh*-phrase remaining in-situ (in non-D-linked questions), cf. *Who said what* vs. **What did who say*, German has been claimed to freely allow both orders. This asymmetry has been related to the possibility of scrambling in German: Assuming that in *wh*-movement the closest *wh*-phrase is fronted, scrambling the *wh*-object across the *wh*-subject is a strategy to make an object-initial multiple question possible. Empirical work

5.1 Clause-bound unbounded dependencies in German

One rather curious property of unbounded dependencies in German is that they are degraded for many speakers once they cross a finite clause boundary (the effect is strongest with relativization). This was noted in Andersson and Kvam (1984) and experimentally verified in Featherston (2005). It has frequently been claimed that the degradation of long A'-movement is characteristic of more Northern varieties of German, including the standard language, while there is no such restriction in Southern German varieties (cf. Haider [1983: 97-99], Grewendorf [1988: 126]). Indeed, both Fanselow and Weskott (2010) and Salzmann et al. (2013) find experimental evidence that long extraction is less acceptable in the North than in the South. It is still not quite clear whether a dialectal contrast is involved or whether the unacceptability is just a phenomenon of the standard language. What is clear is that long A'-movement is well-attested in dialects. For instance, one can find examples in traditional descriptions of the dialects of Basel, Bern, Lucerne and Zurich, see Salzmann (2017: 259) for references. Since several of the linguists who have worked on the topic happen to come from the South and additionally are dialect speakers, what they describe as Southern varieties of German (or Southern versions of the standard language) may be heavily influenced by their native dialect. Evidence that it may be a restriction of the standard language comes from Lühr (1988: 79), who cites several sources that suggest that there was explicit prescriptive pressure in the 19th century in Germany against long A'-movement: It was considered “illogical” or “sloppy”. This accords nicely with the fact that long A'-movement is more productive in dialects, which are usually immune to such pressure. In line with that is the fact that long distance movement (of all three types) is well-documented for earlier stages of the language (roughly before 1850-1900). For an extensive collection of examples, see Behaghel (1928: 547ff):

- (42) [An was]₁ verlangt ihr, dass ich ___₁ glauben soll? (Schiller)
at what demand.2PL you that I believe.INF should.1SG
'What do you expect me to believe in?'

I am not aware of similar restrictions in other Germanic languages, perhaps with the exception of certain varieties of Dutch: Although long relativization is generally possible in Dutch, there are certain indications that it may be restricted nevertheless. Many speakers accept or in fact prefer the prolepsis construction for long-distance dependencies. The situation in the dialects is particularly interesting, see Boef (2012). Some of the observed patterns could perhaps be analyzed as not involving long extraction. Barbiers et al. (2005) explicitly suggest that long-distance relativization is impossible in many dialects.

5.2 Intervention effects – topic- vs. wh-islands

As discussed in section 4.1, extraction from complement clauses with a filled SpecCP-position is blocked in most Germanic languages. Topic islands also strongly degrade extraction in English, cf. Müller and Sternefeld (1993: 481), but the relativization data discussed in section 3.1 suggest that this is not an absolute restriction.

has confirmed the characterization in the theoretical literature by and large, even though crossing movement also leads to lower acceptability ratings in German, cf. Häussler et al. (2015) and references cited there.

In German topic islands are categorical, while *wh*-islands are more permeable, at least for topicalization, as suggested by the following contrast (Müller and Sternefeld [1993: 485]):

- (43) a. *Radios₂ glaube ich [_{CP} gestern₁ hat Ede ___₁ ___₂ repariert].
 radios believe.1SG I yesterday has Ede repaired
 ‘Radios, I believe Ede repaired yesterday.’
- b. ??Radios₂ weiß ich nicht [_{CP} wie₁ man ___₁ ___₂ repariert].
 radios know.1SG I not how one repair.3SG
 ‘Radios, I don’t know how to repair.’

5.3 Absence of island effects in Mainland Scandinavian

There is a large body of literature suggesting that Mainland Scandinavian languages are peculiar from a cross-linguistic perspective in that they fail to obey the Complex Noun Phrase Constraint. Concretely, they allow extraction from relative clauses and complement clauses to nouns (but usually not from other strong islands like adjunct islands and subject islands; however, see Nyvad et al. [2017: 460f.] for grammatical extraction from adverbial clauses in Danish). Corresponding examples in other Germanic languages are sharply ungrammatical (cf. Heinat and Wiklund [2015: 37] and references cited there for earlier work):

- (44) a. [Såna blommor]₁ känner jag [en man [som säljer ___₁]].
 such flowers know.1SG I a man that sells *Swedish*
- b. *?[Those flowers]₁ I know [someone [who sells ___₁]].

Given that the CNPC constraint is usually considered to hold universally, the behavior of the Mainland Scandinavian languages is rather puzzling. A grammatical account of the cross-linguistic asymmetry is provided in Nyvad et al. (2017): They assume extraction from CNPC-islands in Danish to be generally grammatical and relate it to the possibility of CP-recursion; this option, which they argue is independently motivated in the language, provides an escape hatch for the filler. Kush et al. (2013), on the other hand, argue that the acceptability of extraction from strong islands in Swedish is illusory; relative clauses that allow extraction have a different structure (a small clause structure) from those that block extraction (true relatives). According to this hypothesis, the head noun of the relative clause is reanalyzed as the subject of a PredP, while the relative complementizer *som* is identified with Pred (*Som* can indeed independently function as the head of an SC). Since small clauses do not block extraction, the acceptability of relative clause extraction is unsurprising:

- (45) [De blommorna]₁ känner jag [_{PredP} en man [_{Pred} som] säljer ___₁].
 those flower.PL.DEF know.1SG I a man who sells
 lit.: ‘Those flowers I know a man who sells.’

Extraction is predicted to be blocked with verbs that cannot take such a small clause complement. According to Kush et al. (2013), this prediction is borne out with verbs like ‘meet’ or ‘kiss’. However, empirical studies on Danish (Christensen and Nyvad [2014] and Swedish (Müller [2015])

refute these claims: They found no difference in acceptability between extraction with verbs that are compatible with SCs and extraction with verbs that are not; furthermore, in both studies, extraction from relative clauses led to significant degradation, which contrasts with the claims in the earlier literature.

A different perspective has been to assume that extraction is indeed severely constrained even in Scandinavian languages but that there are factors that make extraction more felicitous (factors, which can also play a role in other languages). Such factors/conditions include semantic properties of the head noun of the RC, the nature of the gap inside the RC (subject vs. non-subject), the nature of the matrix subject, properties of the extracted element (referentiality) and information-structural factors. While these factors indeed make extraction from strong islands in languages like English more acceptable (but not grammatical), Heinat and Wiklund (2015) show that none of these factors is crucial in Scandinavian languages: Relative clause extractions are acceptable even if these conditions are not met; thus, extraction in MSc is indeed exceptional in their view.

In a recent acceptability study, Kush et al. (2017) found that extraction from complex noun phrases in Norwegian is just as degraded as extraction from adjunct islands and subject islands; furthermore, extraction was as degraded as in languages like English and Italian, which are generally thought to comply with the CNPC. Thus, these empirical facts suggest that Norwegian does not differ in its locality properties from the more ‘well-behaved’ languages (although the authors stress that their results do not necessarily imply that extraction from complex DPs is ungrammatical in Norwegian).

As this short summary of the literature shows, the status of the locality properties of Mainland Scandinavian unbounded dependencies remains controversial; trying to determine whether extraction is really different in these languages will therefore constitute an intriguing topic for future research.

5.4 *That-trace effects*

In many languages there is a curious subject-object asymmetry in the extraction across *that*: While unproblematic for objects, it is often degraded for subjects, which is why the effect has been termed *that-trace effect*:

- (46) a. Who₁ did you say that Mary likes __₁?
b. *Who₁ did you say that __₁ came?

That-trace effects seem to be found in most Germanic languages to some extent; there are subtle differences, and it is not fully clear to what extent the differences reflect deeper grammatical asymmetries; perhaps, some of the variation reported in the literature is due to the fact that the data were obtained by different methodological means.

That-trace effects in English seem undisputed even though there also seems to be some variation, cf. Pesetsky (to appear) and references cited there. Among the Scandinavian languages, Danish, Faroese, Swedish, and some varieties of Norwegian are claimed to display the *that-trace effect*, while Icelandic and certain (Northern) varieties of Norwegian do not, cf. Hrafnbjargarson et al. (2010: 301). In some of the Scandinavian languages, as in English, *that-trace-effects* can be voided

by means of an expletive (*der* in Danish) or a subject resumptive (Swedish), cf. Lohndal (2009: 216f.). It generally seems difficult to relate the observed differences to independent cross-linguistic differences; Lohndal (2009) argues that the feature content of C is crucial in this respect.

For German, the existence of *that*-trace effects has long been denied, cf. Haider (1983), Grewendorf (1988), Müller (1995). Subject and object extraction were taken to be equally acceptable (in those varieties that permit extraction across *dass*, see above). Featherston (2005), however, provided experimental evidence for *that*-trace effects in German as well. These results were confirmed in a more detailed study by Kiziak (2010). More recently, Bayer and Salzmann (2013) have shown that *that*-trace effects are unrelated to subjecthood; they argue that the degradation always obtains when the sentence topic undergoes long movement and relate it to improper movement. Salzmann et al. (2013) go a step further and show that the degradation observed in German is unrelated to extraction, because it obtains more generally when the complementizer and the finite verb are adjacent. They propose that such structures are ruled out because of a phonological EPP that requires the specifier of a high functional head to be overtly occupied.

The status of *that*-trace effects in Dutch is rather murky. Bennis (1987: 238) argues that long extraction as such is unproblematic but that it is restricted by pragmatic constraints, which boils down to having presuppositional material in the middle field, with traces of movement counting as well. While relativization and topicalization involve topical presupposed material, *wh*-movement (often) does not; as a consequence, the dummy pronoun *er* surfaces under long *wh*-extraction to satisfy the pragmatic constraint. The facts reported in Bennis are largely confirmed in a questionnaire study by den Dikken (2007). Boef (2012) documents subject-object asymmetries in long relativization in Dutch dialects. She argues that the form *die* that occurs in subject extraction is an agreeing complementizer akin to French *qui*, which makes extraction possible.

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