EXTRACTION STRATEGIES IN NORWEGIAN

CHRISTINE MEKLENBORG
University of Oslo

ABSTRACT

In this paper I will show that it is possible to extract elements from an embedded root clause in a V2 language, provided that the deleted copy is spelled out in a high position. However, if the embedded clause does not have V^0-to-C^0 movement, no deleted copy can be spelled out. This difference falls out naturally from the assumption that embedded root clauses must be thematically complete and that in the case of movement chains, the foot of the chain cannot be spelled out. This paper is a detailed study of extraction strategies in Norwegian, based on a corpus of 1329 informants. Its novelty lies in combining the study of extraction strategies with the presence of resumptive elements in the embedded clause.

[1] INTRODUCTION

In Norwegian, it is marginally possible to express the resumptive pronoun in the embedded clause from which an element has been extracted (1).

(1) [Denne boka]$_i$, den$_i$ vet jeg at den$_i$ selger de (ikke)
     this   book   that.DEM know I   that that.DEM sell   they NEG
     _$_i$ billig.
         cheap
    'I know that they do not sell this book cheap.'

In (1), the left dislocated topic of the matrix clause (*denne boka* 'this book') is resumed by a d-pronoun (*den* 'that') in the embedded clause. This d-pronoun is in clause initial position, followed by the finite verb (*selger* 'sell') and the postverbal subject (*de* 'they'). The verb precedes the negation (*ikke*). These are all indications that the finite verb has moved into the C-domain and that the embedded clause has the structure of a root clause.

If there is no overt resumptive element in the embedded root clause, the clause is unacceptable (2).

(2) ?[Denne boka]$_i$, den$_i$ vet jeg at de selger den$_i$ ikke
      this   book   that.DEM know I   that they sell   that.DEM NEG

billig.
cheap
'I know that they do not sell this book cheap.'

In the case of embedded clauses that do not exhibit V^0-to-C^0 movement, it is not possible to express the resumptive pronoun.

(3) *[Denne boka]$_i$, den$_i$ vet jeg at de   ikke selger   den$_i$
     this   book   that.DEM know I   that they sell that.DEM NEG
     billig.
     cheap
     'I know that they do not sell this book cheap.'

In this paper, I will explore the mechanisms behind these differences and I will show that Norwegian does in fact possess two different extraction strategies: long A' movement and cyclic A' movement. In addition to examining extraction from *that*-clauses, I will present extraction from WH clauses and show that an overt resumptive is never possible in these contexts. I will ascribe the differences to the requirements that root clauses must be thematically complete combined with restrictions on the spell out of chains. By *thematically complete*, I understand that all thematic positions must be filled. Further, I will argue that in cases where there is extraction from an embedded clause, the CP must always be split. The possibilities of extraction from *that* clauses and WH clauses thus provide insight into the internal make-up of the left periphery of embedded clauses.

The data in this paper are presented in Bokmål, one of two written languages in Norway. The choice of written standard for this paper is irrelevant as I do not assume any structural differences with respect to the extractions in the two varieties. It could, however, be noted that where the Bokmål variety uses a d-linked pronoun as the resumptive element when its reference is non-animate, the Nynorsk variety uses a personal pronoun in all cases.

The data presented in this paper has been gathered from 1329 native speakers of Norwegian.

[2] BACKGROUND

Norwegian is an asymmetric Verb Second (V2) language, where the finite verb targets the C domain at least in main declarative XP–V–S clauses and possibly also in S–V clauses (see the discussion in, among others, Holmberg & Platzack, 1995; Schwartz & Vikner, 1996; Lohndal et al., 2020). In embedded clauses, the finite verb targets T^0 (Holmberg & Platzack, 1995), but embedded V2 is also attested (see among others Bentzen, 2007, 2014; Julien, 2009).

In Norwegian, elements can be extracted from the embedded clause to the

matrix clause (4) regardless of the expression of the complementizer.

(4) Hvem$_i$ tror du (at) jeg skal treffe _$_i$ i morgen?
     who   think you that I   shall meet   in morning
     'Who do you think I shall meet tomorrow?'

(from Bentzen (2014: 436–437))

These kinds of extractions are the starting point for this study, that specifically looks at structures with a spell-out of the deleted copy of the extracted element. This is not a common structure in Norwegian, and it is therefore interesting to see how language users react to it.

The structures that will be examined involve not only extraction, but also left dislocation of the extracted element in the matrix clause. Left dislocation in Norwegian shows the same pattern as in other Germanic V2 languages: a fronted element is immediately followed by a resumptive pronoun (5) (Altmann, 1981; Faarlund, 1992; Faarlund et al., 1997; Grohmann, 2000; Axel, 2007; de Vries, 2007; Helland et al., 2020; Meklenborg et al., 2021). This pronoun must be co-referential with the fronted dislocated topic, otherwise the clause is sharply unacceptable. This is the case in (6), where a left dislocated direct object is followed by the subject, while the resumptive pronoun is left *in situ*.[1]

(5) [Hva han mener om   det]$_i$, det$_i$ vet   jeg ikke.
     what he knows about that   that know I   NEG
     'I don't know what he thinks about that.'

(6) *[Hva han mener om det]$_i$, jeg vet ikke det$_i$.

In embedded contexts, Norwegian permits movement of a thematic element from an embedded clause to the fronted position of the matrix clause. This element can be the subject (7) or the object (8). In (7) there is a *that*-trace violation in that the subject is extracted across the complementizer. Even so, the clause is acceptable for the majority of the respondents.[2] Previous studies have shown that varieties of Norwegian lack *that*-trace-effects (Lohndal, 2009; Bentzen, 2014), and these results pattern with these observations. I will not go into discussions of *that*-trace effects in this paper.

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[1] Frey (2004) argues that in German, there is a clause medial topic position, permitting structures as the one in (6). Crucially, these are not marked by an intonational break. This option is not available in Norwegian, where the structure requires a substantial pause. Faarlund (1992: 120) calls these clause external discourse initial sentence topics (*diskurs-innleiande setningsemne*). I will argue that in a cartographic framework, the correct label is *hanging topic*.

[2] 840 of 1309 respondents (64.2 %) rate the clause as perfectly fine (score 5), while only 48 (3.7%) consider it to be totally unacceptable (score 1).

(7)   [Denne boka]$_i$ vet   jeg at   _$_i$ er billig.
        this   book   know I   that   is cheap
        'I know that this book is cheap.'

(8)   [Denne boka]$_i$ vet   jeg at   de   selger _$_i$ billig.
        this   book   know I   that they sell   cheap
        'I know that they sell this book cheap.'

The fronted element can also be the Left Dislocated Topic of the matrix clause
(9).

(9)   [Denne boka]$_i$, den$_i$ vet   jeg at   de   selger _$_i$ billig.
        this   book   that.DEM know I   that they sell   cheap
        'I know that they sell this book cheap.'

The question is how this structure is derived. Is the movement to a left
peripheral position in the matrix clause contingent on a parallel movement
to the left periphery of the embedded clause? How exactly does the fronted
element move from its merged position to its final landing site in the left
periphery of the matrix clause?

The structure of this paper is as follows: In section [3] I present the method
used for gathering the data. Section [4] lays out the theoretical framework. In
section [5] I present the main findings, while section [6] presents extraction
from *that*-clauses and section [7] extraction from WH clauses. Section [8]
discusses the restrictions on spell-out, while section [9] concludes the paper.

[3]   METHOD

In order to test speakers' intuitions with respect to movement, I created an online
questionnaire based on the *Nettskjema* platform provided by the University of
Oslo. I posted the link to this form on Facebook and Twitter in June 2015, and
it generated responses from 1329 informants.

The informant was asked questions about his/her linguistic background
before starting the test. Non-native speakers were automatically excluded.
The test was anonymous, and it was not possible to trace the identity of the
participants. Before the questionnaire was published I ran several pilots to
eradicate misunderstandings and bugs.

In the introduction, and repeatedly through the questionnaire, I stressed
that what I wanted was assessments of oral Norwegian, not the written, standard
language. I asked the informants if they would have reacted if they heard the
utterances in question or if they could have produced them themselves.

Further, I had a section where I asked for information about age, geography,
profession and attitudes towards language. In particular I wanted to know
how normative the informant was, and I also asked them if they had studied

foreign languages or if they taught Norwegian. The reason for these questions was to single out the persons who were likely to be more normative and less intuitive in their responses because they are susceptible to know the formal rules. Norwegians tend to be very normative, with strong opinions regarding correct language use.

I used a Likert scale test raging from 1 to 5, where 1 was labelled *umulig* 'impossible' and 5 was labelled *helt fin* 'perfectly fine'. The informants were asked to judge the acceptability of 23 sentences according to this scale. 10 of the sentences were fillers; the rest displayed various possible extraction constructions with resumption, with and without negation. I tested extraction from embedded to main clauses, both from *that*-clauses and WH clauses. For every sentence, I calculated a mean value based on the number of replies. In the cases where respondents had not assessed a clause, this evaluation received the number 0 and was removed from the calculation of mean values.

The questionnaire opened on June 10th 2015 at noon, and it closed 48 hours later. During this period I received 1329 replies.

While conducting the analyses, it became clear that a small follow up study was necessary. I used the same set up for the questionnaire as the original one and tested these three clauses in a set of 14 clauses, where 11 were fillers. As in 2015 I used social media to get feedback, and I got 398 replies in 27 hours. The clauses in question are (55), (56), and (57). This follow-up study was conducted in November 2018.

[4] THEORETICAL BACKDROP

[4.1] *Terminology*

In this paper, the pronoun that doubles the fronted constituent is called *a resumptive pronoun*. This paper discusses three different occurrences of this resumptive pronoun. This is exemplified in (10), where all possible positions are spelled out in a sharply non-grammatical clause. The intitial DP and the resumptives form a *chain*.

(10)   *[Denne boka]$_i$, **den**$_i$ vet jeg at   **den**$_i$ selger de
       this   book   that.DEM know I   that that.DEM sell   they
       den$_i$ (ikke) billig.
       that.DEM NEG   cheap
       'I know that they do not sell this book cheap.'

While the leftmost resumptive occupies SpecFinP of the main clause, the two others are located in the embedded clause. All three resumptives are the spell-out of a copy from the chain of movement. I assume the standard analysis of movement, namely that movement must be understood as a chain of copy

and delete (Nunes, 2004; Hornstein et al., 2005) (11). The leftmost element of the chain is known as the head of the chain, whereas the lowest deleted copy is the foot.

(11) γ_i ... α ... $\not\gamma_i$ ... β ... $\not\gamma_i$

Building on this, *denne boka* in (10) is the head of the chain, while the last resumptive *den* is the foot of the chain (see (12) and (13)). Given the conception of movement that implies that it is a sequence of copy and delete, we must understand the resumptive elements as representatives of the full XP: [*denne boka*] $\longrightarrow$ *den*. We will get back to this in Paragraph [4.6].

(12)   **The chain**
         [***denne boka**] **den** vet jeg at **den** selger de **den** (ikke) billig

This paper does not discuss the left dislocated element in the matrix clause, but the resumptives that occur in the embedded clause. These will be labelled *a (high) resumptive* and *a low resumptive*.

(13)   **High and low resumptives**

*denne boka, den	vet jeg at	**den**	selger de	**den**	(ikke) billig

*denne boka, den   vet jeg at   **den**   selger de   **den**   (ikke) billig
       | ↓   ↓
       | high   low
       | res.   res.
       ↓   ↓
  head of chain   foot of chain
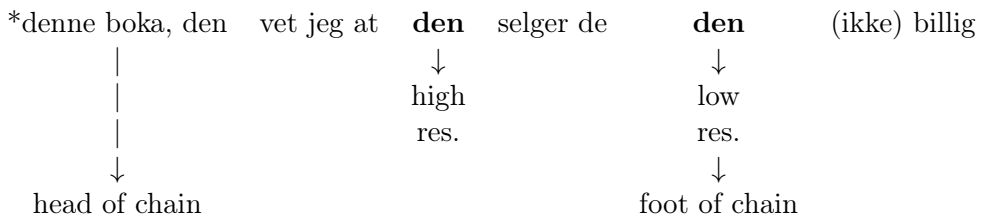
In what follows, I will indicate the foot of the chain by _ and co-index it with the head of the chain and spelled-out copies. I will not postulate the position or existence of any covert copies of the chain.

[4.2]   *Cartographic positions*
The analysis has been conducted within the theory of a split CP domain, stemming from Rizzi (1997)'s seminal work on the left periphery (14).

(14)   Force ... Top* ... Foc* ... Top* ... Fin

Rizzi's original proposal has later been modified by Benincà & Poletto (2004) for Romance and Frascarelli & Hinterhölzl (2007) for Germanic. Benincà and Poletto argue against recursive topics, but suggest an even more fine-grained model for the left periphery (15). Frascarelli and Hinterhölzl suggest a hierarchy of topics as in (16).

(15)   Frame ... Force ... Topic ... Focus ... Fin

(16)   aboutness topics > contrastive topics > familiar topics

According to Benincà and Poletto, Frame, Topic and Focus must be conceived as fields consisting of several sub-classes. They argue that Frame is composed of Hanging Topics and Scene Setters. Left dislocation occurs between Force and Focus.

While we have already stated that the finite verb in a V2 language moves to the left periphery, it is not obvious what head it targets in a split CP model, as the one presented above. Rather, the models suggest that there are several possible landing sites for the finite verb, an idea that has been expressed in work on various languages (Poletto, 2002; Lohndal, 2009; Walkden, 2015) and has been fully exploited in Wolfe's typology of Old Romance languages (see in particular Wolfe (2015, 2019)). A high or a low landing site for the verb gives predictions with respect to the possibilities of V>2 structures in a V2 language. If the verb targets Fin^0, there are numerous available positions to the left of it, that are accessible to base-generated elements (Holmberg, 2015). If the verb targets $Force^0$, the number of available positions in the left periphery is restricted. This analysis is based on the assumption that there is a bottleneck associated with Fin^0, that only permits the movement of one single element across the finite verb (Haegeman, 1996; Roberts, 2004). In other words, a Force-V2 language will have the finite verb in $Force^0$ and few, if any, violations to the V2 rule, while a Fin-V2 language will have the finite verb in Fin^0 and several V2 transgressions (Walkden, 2015; Wolfe, 2019).

As for modern Germanic V2 languages, it is commonly assumed that the finite verb targets $Force^0$ rather than Fin^0 (for Norwegian, see Østbø, 2007; Eide, 2011; Eide & Sollid, 2011; Julien, 2015). Given the hierarchy in which left dislocated topics appear between Force and Focus, I will, however, assume that clauses displaying left dislocation effects host the finite verb in Fin^0 (see also Meklenborg Salvesen, 2013; van Kemenade & Meklenborg, 2021).

[4.3] *Phases*
A question that will not be discussed in depth in this paper, is the role of phases Chomsky (2001, 2008). I will, however, assume that a clause has two strong phases, namely the CP and the vP. In this paper, it is the higher of

these, the CP, that is of interest. Any element that escapes a strong phase must do so by moving through the phase's left edge, a principle known as the Phase-Impenetrability Condition (PIC). I will assume that the highest available specifier position in the CP and the vP act as escape hatches of the phases.

[4.4]   *The role of negation*

In order to test whether the finite verb is in the v or C domain, I have used the negation as a diagnostic. In Norwegian, the finite verb does not move out of the vP in embedded clauses (Holmberg & Platzack, 1995). The presence of an adverb in the IP field is as such a good diagnostic for V^0-to-C^0-movement: If the finite verb precedes the negation, it has moved out of v^0 (17). Westergaard & Vangsnes (2005) argue that there are two subject positions in Norwegian: SpecAgrSP for given subjects and SpecTP for new subjects.[3] The only intervening position is reserved sentence adverbials. All the clauses in this study are pronominal, and as such, they are given. In other words, they occupy the highest specifier position in the IP field. For the simplicity of the presentation, I will however use the label SpecTP as shorthand for both positions. When the finite verb occurs to the left of the subject (17), we are thus forced to assume that it sits in the C domain (18).

(17)   Denne boka liker de   ikke.
        this   book likes they NEG
        'They do not like this book.'

(18)   [$_{CP}$ Denne boka [$_{C^0}$ liker] [$_{TP}$ de [$_{V^0}$ ~~liker~~] [$_{NegP}$ ikke ...]]]

[4.5]   *Embedded contexts*

This study examines embedded contexts under the predicate verb *å vite*, 'to know'. This is a well known bridge verb (Schwartz & Vikner, 1996) or a Class E verb in the system of Hooper & Thompson (1973). We will in other words expect informants to accept V^0-to-C^0-movement in the complement clause.

    The presence of the resumptive pronoun in the subordinate clause is not an ordinary construction in Norwegian. Whereas it is quite common in Swedish, it does not belong to the standard language in Norwegian. In (19) the fronted object is co-referential with the subject of the embedded clause and repeated by the resumptive pronoun.[4] In Norwegian a similar construction does not display any resumptive pronoun (20).

(19)   [Vilken elev]$_i$ trodde ingen   att han$_i$ skulle fuska
        which   pupil thought nobody that he   would cheat

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[3]   I use the term *IP field* for the *Mittelfeld*, while I use TP for a specific position in the IP field.
[4]   The construction requires emphatic stress, according to Engdahl (1982: 166).

'Which pupil didn't anybody think would cheat?'

Swedish, from Engdahl (1982: 166)

(20) [Hvilken elev]$_i$ trodde ingen   at   (*han)$_i$ skulle jukse.
       which   pupil thought nobody that he   would cheat
       'Which pupil didn't anybody think would cheat?'   Norwegian

In other words, an overt pronominal resumptive in the embedded clause is a deviation from the expected structure in Norwegian. Adding such an element to a clause involves a strong manipulation of the preferred word-order. It is thus very interesting to see to what extent such manipulation can be accepted and what it tells us about the underlying structures.

[4.6] *Different models for derivation*

The clauses tested have an initial DP followed by the resumptive pronoun (21). This is the typical Germanic left dislocation structure (Altmann, 1981; Faarlund, 1992; Faarlund et al., 1997; Grohmann, 2000; Axel, 2007; de Vries, 2007; Johannessen, 2014; Jørgensen, 2016).

(21) [Denne boka]$_i$, den$_i$ er billig.
       this   book   that.DEM is cheap
       'This book is cheap.'

The dominating point of view in the literature is that the fronted constituent in the Germanic languages is derived through movement (Grohmann (2000); Boeckx & Grohmann (2005); de Vries (2007); Frascarelli & Hinterhölzl (2007), but pace Frey (2004)). Two different operations can in theory account for the derivation: the spell-out model (Grohmann, 2000) and the big XP-model (Grewendorf, 2002).

The spell-out model suggests that the left dislocated XP has been moved from its base-generated position through SpecFinP to its surface position. As the V2 requirement demands overt phonetic material in SpecFinP, the deleted copy is spelled out. Its form cannot be that of the moved XP, due to what (Grohmann, 2000: 148) dubs the Condition on Domain-Exclusivity (CDE) (22).

(22) **Condition on Domain-Exclusivity (CDE)**
       No maximal phrase XP can have more than one address identification AI per prolific domain $\Pi\Delta$, unless it has a drastic effect on the output, i.e. the relevant copy of XP has a different PF-matrix (=copy spell-out).

Instead, the copy is spelled out in the form of a resumptive pronoun as in (23).

(23) [$_{\text{LDP}}$ [$_{\text{denne}}$ boka]$_i$ [$_{\text{FinP}}$ ~~[denne boka]~~$_i$ $\longrightarrow$ den$_i$ [$_{\text{Fin}^0}$ er] ....]]

The form of this pronoun varies across Germanic: it is a d(emonstrative)-pronoun in German (24) and (25), and a personal pronoun in Icelandic. In Norwegian it can be both a d-pronoun (26) and a personal pronoun (27). In standard Bokmål, animate left dislocated topics are followed by personal pronouns, while non-animate topics are followed by d-pronouns.[5]

(24)   [Die Venus]$_i$, die$_i$ est der Abendstern,
        DET Venus   that is DET evening.star
        ' Venus is the evening star'   German, from Altmann (1981: 247)

(25)   [Der Gärtner]$_i$, der$_i$ ist der Mörder.
        DET garderner that is DET killer
        'The gardener is the killer.'   German, from Altmann (1981: 247)

(26)   Venus$_i$, det$_i$ er aftenstjernen.
        Venus   that is evening.star.DET
        ' Venus is the evening star'   Norwegian

(27)   Gartneren$_i$, han$_i$ er morderen.
        garderner.DET he   is killer.DET
        'The gardener is the killer.'   Norwegian

Rather than assuming the spell out of a trace, Grewendorf (2002) suggests that the basegenerated XP that is topicalised enters the derivation as a big XP. In this XP the element that is left dislocated occupies its specifier and the resumptive pronoun its head. In (28) one must then assume a big DP in the form of [$_{DP}$ denne boka [den]] prior to movement. This big DP is moved to SpecFinP, before the *denne boka* is extracted and moved to the specifier of the (Left Dislocated) Topic Phrase. The head of the big DP, *den*, remains in SpecFinP.

(28)   [$_{LDP}$ [$_{denne}$ boka]$_i$ [$_{FinP}$ [~~denne boka~~$_i$ den$_i$] [$_{Fin^0}$ er] ....]]

While the resumptive pronoun in Grohmann's model is a phrase, it is a head under Grewendorf's analysis. The resumptive pronoun occurs in its weak form (see Cardinaletti & Starke (1999)) in the Norwegian dislocation structure (Faarlund, 1992: 121). This implies that in dialectal eastern Norwegian, a variety that has pronominal clitics (Hellan & Platzack, 1999), speakers must use the weak form *hu(n)*, while both the emphatic *henner* and the clitic form *'a* are excluded.

(29)   [Denna dama der]$_i$, *henner$_i$ / hu$_i$ / *'a$_i$ er det tak i.
        this   woman there   she   is it grip in

'That women is something.' dialectal Eastern Norwegian

According to Cardinaletti & Starke (1999), weak pronouns are always phrasal. The fact that the left dislocated element is followed by a phrasal element is thus an argument in favour of Grohmann's spell-out model. It is this model that I will use in this paper.

[5] MAIN FINDINGS

The mean values received by every clause show very strong tendencies. 10 sentences are clearly perceived as grammatical, obtaining a mean value of >4 and a median value of 5. 4 of the top 5 sentences are fillers and do not contain extraction (examples (30) – (33)). 3 sentences get a mean value between 3 and 4, which I interpret as a weak acceptance. 1 sentence gets an average score of 2.27, which is a weak rejection. 9 sentences get a score <2, indicating strong rejection. To facilitate the reading of this paper, mean scores above 4 are not marked; mean scores between 3 and 4 (weak acceptance) are labelled *?*. Mean scores between 2 and 3 are marked * for weak rejection, while clauses that score below 2.5 are marked **.

(30) Jeg vet   ikke hva   jeg synes om   denne boka.
      I   know NEG what I   think about this   book
      'I don't know what to think about this book.'   4.95 – 5

(31) Hvorfor selger de   denne boka så billig?
      why   sell   they this   book so cheap
      'Why do they sell this book so cheap.'   4.91 – 5

(32) Hvilken bok   selger de   billig?
      which   book sell   they cheap
      'Which book do they sell cheap?'   4.86 – 5

(33) [Denne boka]$_i$ selger de   billig.
      this   book sell   they cheap
      'They sell this book cheap.'   4.86 – 5

No sentence gets an average of 5 points or 1 point. The highest mean score is 4.95; the lowest 1.16. In the examples in this paper, the average score is calculated with two digits and appears right-aligned on the same line as the translation. The number following the mean value indicates the median value obtained by the clause.

I did not find any significant differences between the different population groups. I specifically looked at the different age groups as well as gender differences. However, the two oldest age groups, covering people age 60 or above, typically tended to reject clauses more strongly than the other groups.

I further compared two groups of supposedly language-conscious respondents[6] to the average, but without detecting any patterns or deviations. The only possible observation is that the teachers were more prone to polarisation, so that sentences would typically get a slightly higher score for the acceptable ones and a lower score for the unacceptable ones.

[6] EXTRACTION FROM *that*-CLAUSES

The respondents give a high rating for extraction from *that*-clauses where no copy is spelled out as in (34).

(34)   [Denne boka]$_i$, den$_i$ vet jeg at de ikke selger _$_i$ billig.
       this   book   that.DEM know I   that they NEG sell   cheap
       'I know that they do not sell this book cheap.' $4.48 - 5$

In (34) the finite verb follows the negation, which we take as an indication that no V^0-to-C^0 movement has taken place. The clause does not contain any resumptive copy. The left dislocated object has been moved to initial position from the embedded clause. Below is a simplified derivation, ignoring movement of the subject and not expressing the adverb *billig* 'cheap'.

(35)   [$_{LDP}$ [denne boka]$_i$ [$_{FinP}$ ~~denne boka~~$_i$ $\longrightarrow$ den$_i$ [$_{Fin^0}$ vet] [$_{TP}$ jeg
       [$_{CP}$ [$_{C^0}$ at] [$_{TP}$ de [$_{NegP}$ ikke [$_{V^0}$ selger] [$_{DP}$ ~~denne boka~~$_i$]]]]]]]]]

If the verb moves across the negation and into the C-domain, the derivation crashes (36).

(36)   *[Denne boka]$_i$, den$_i$ vet jeg at de selger ikke _$_i$ billig.
       this   book   that.DEM know I   that they sell   NEG   cheap
       'I know that they do not sell this book cheap.' $2.27 - 2$

Extraction with V^0-to-C^0-movement is in other words ruled out. However, if we add the resumptive copy, the picture changes. The clause in (37) receives a score slightly above average and clearly better than the one in (36). If the negation is removed, the clause receives the exact same average score (3.16).

(37)   ?[Denne boka]$_i$, den$_i$ vet jeg at den$_i$ selger de (ikke)
       this   book   that.DEM know I   that that.DEM sell   they NEG
       _ $_i$ billig.
          cheap
       'I know that they do not sell this book cheap.' $3.16 - 3$

If the resumptive copy is spelled out in a high position in the embedded clause as in (37), there has to be V^0-to-C^0 movement of the finite verb. If not, the construction is sharply unacceptable (38). Adding to the unacceptability of this clause is probably also the fact that the order of the subject and the object has been reversed: the unmarked word-order of the embedded clause with no V^0-to-C^0 would be … *at de ikke selger den billig.*

(38) **[Denne boka]$_i$, den$_i$ vet jeg at   den$_i$ ikke selger de
        this   book   that.DEM know I   that that.DEM NEG sell   they
      _$_i$ billig.
          cheap
      'I know that they do not sell this book cheap.'   1.18 − 1

The observations in (37) and (38) force us to assume that if the resumptive copy in the embedded clause occupies a high position, there must be V^0-to-C^0-movement. The implication of this is that the complementizer must be merged under Force^0 and that the finite verb moves into Fin^0. The resumptive copy appears in SpecFinP.

(39)   [$_{LDP}$ [$_{denne}$ boka]$_i$ [$_{FinP}$ ~~denne boka~~$_i$ $\longrightarrow$ den$_i$ [$_{Fin^0}$ vet] [$_{TP}$ jeg [$_{Force^0}$ at] [$_{FinP}$ ~~denne boka~~ $\longrightarrow$ den$_i$ [$_{Fin^0}$ selger] [$_{TP}$ de [$_{NegP}$ ikke [$_{V^0}$ ~~selger~~] [$_{DP}$ ~~denne boka~~$_i$]]]]]]]]

If the resumptive copy is expressed in a low position in the embedded clause, the clause gets an average score below 2 and is judged unacceptable. In (40), the copy is in a low position, and there is no negation. Once the negation is added, the acceptability ratings decrease further ((41)–(42)). In (41) there is no V^0-to-C^0 movement, while the verb is in the C-domain in (42). This difference does not affect the judgements.

(40) **[Denne boka]$_i$, den$_i$ vet jeg at   de   selger den$_i$ billig.
        this   book   that.DEM know I   that they sell   that.DEM cheap
      'I know that they sell this book cheap.'   1.97 − 2

(41) **[Denne boka]$_i$, den$_i$ vet jeg at   de   selger den$_i$ ikke
        this   book   that.DEM know I   that they sell   that.DEM NEG
      billig.
      cheap
      'I know that they do not sell this book cheap.'   1.65 −1

(42) **[Denne boka]$_i$, den$_i$ vet jeg at   de   ikke selger den$_i$
        this   book   that.DEM know I   that they NEG sell   that.DEM
      billig.
      cheap

'I know that they do not sell this book cheap.' $1.67 - 1$

The results clearly indicate that there are two ways of fronting the object of an embedded clause: Either by long A' movement from the embedded VP to the matrix' left periphery with no resumptive copy, or by cyclic A' movement where the DP moves through the left periphery of the embedded clause leaving behind a resumptive copy. The two operations have very different characteristics.

TABLE 1: Extraction from *that*-clauses

	high resumptive	low resumptive	V^0-to-C^0
long A' movement	–	–	–
cyclic A' movement	+	–	+

In other words, the structures we see, are the following (43). I use the (somewhat archaic) abbreviation COMP for the complementizer, and I use *resumptive* as shorthand for $XP \longrightarrow resumptive$. *Head* and *foot* refer to head and foot of the chain (see Paragraph [4.1]). I also make use of the labels CP, IP and vP fields to indicate that there are more positions in these fields than what I have indicated.[7] The initial XP is the head of the chain.

(43)   **Long A' movement with resumption and V^0-to-C^0**

MATRIX CLAUSE				SUBORDINATE CLAUSE				
CP field				CP field			IP field	vP field
LDP	FinP	Fin^0	TP	$Force^0$	SpecFinP	Fin^0	TP	
$head_i$	$resumptive_i$	V	S	COMP	$resumptive_i$	V	S	$foot_i$

What we see, is that once the CP field of the subordinate clause is not split so that there is no V^0-to-C^0, there is no accessible landing site for the XP that is moving up to the matrix clause.[8]

(44)   **Cyclic A' movement with no resumption V^0-to-C^0**

Consequently, we see that the expression of the resumptive element in the subordinate clause hinges on verb movement out of the vP field.

[7]   In traditional terminology these would correspond to the *Vorfeld, Mittelfeld* and *Nachfeld*. Consequently, I make a distinction between the IP *field* and the *position* TP, which I take to be the highest position in the IP field.
[8]   Note that the finite verb does not move out of the vP in subordinate clauses in Norwegian (Holmberg & Platzack, 1995).

MATRIX CLAUSE				SUBORDINATE CLAUSE				
CP field				CP	IP field	vP field		
LDP	FinP	Fin^0	TP	C^0		SpecvP	v^0	
head$_i$	resumptive$_i$	V	S	COMP		S	V	foot$_i$

[7] EXTRACTION FROM *wh*-CLAUSES

In Norwegian, it is possible to move a WH element out of an embedded clause. In my survey this is perceived as an acceptable construction (45). This is expected and in line with Engdahl's claims about Swedish (Engdahl, 1982).

(45)   [Hvilken bok]$_i$ mener du at   de   selger   _$_i$ billig?
       which   book mean you that they sell   cheap
       'Which book were you insinuating that they sell cheap?'   4.88 – 5

The informants overall accept extraction of an element from an embedded WH clauses, regardless of the WH element (46) and (47).

(46)   [Denne boka]$_i$, den$_i$ vet   jeg ikke hva   jeg synes om   _$_i$.
       this   book   that.DEM know I   NEG what I   think about
       'This book, I don't know what I think about it.'   4.32 – 5

(47)   [Denne boka]$_i$, den$_i$ vet   jeg hvorfor de   ikke selger _$_i$ så
       this   book   that.DEM know I   why   they NEG sell   so
       billig.
       cheap
       'This book, I know why they sell it so cheap.   4.00 – 4

The structures in (46) and (47) resemble the long distance A' movement discussed above. There is extraction from an embedded clause into the matrix clause, and there is no resumptive copy. In (47), the negation precedes the finite verb, and there is no V^0-to-C^0 movement. This is expected, as embedded interrogation in the standard language does not involve V^0-to-C^0 movement (Westergaard & Vangsnes, 2005). In these cases we can assume a non-split CP where the WH word moves to SpecCP (48) (excessive structure omitted).

(48)   [$_{Denne}$ boka]$_i$, den$_i$ vet jeg [$_{CP}$ hvorfor [$_{C^0}$] [$_{TP}$ de [$_{NegP}$ ikke [$_{vP}$ ~~de~~
       [$_{v^0}$ selger] . . .]]]]

An open question is why C^0 is empty in this case, and why the finite verb does not move into this position. Two possible solutions present themselves naturally: either there is a silent complementizer (presumably *at* 'that') in Fin^0, or the lack of movement can be ascribed to the absence of a formal WH feature in the embedded clause. The two possibilities do not exclude each other.

In spoken Norwegian, embedded inverted questions (EIQs) are rather common. An example of this structure, that strongly resembles embedded V2, is shown in (49). Rather than the expected word order WH–S–V, the clause has WH–V–S. EIQ is not limited to Norwegian (Faarlund et al., 1997: 994), but has also been reported in Danish (Hansen & Heltoft, 2007). It is also common in a number of varieties of English (see a discussion and detailed analysis in Woods, 2020).

(49) Hvis du vet   i hvilket fylke   ligger tettstedet Skjeberg, . . .
      if   you know in which   county lies   village   Skjeberg
      'If you know in what county the village of Skjeberg is located ...'

                                        Meklenborg Salvesen (2009: 234)[9]

      Standard word order: *Hvis du vet i hvilket fylke tettstedet Skjeberg ligger, . . .*

The finite verb in (49) has crossed the negation and moved out of v^0. Further, it has moved across the subject in SpecTP. I take this as evidence for V^0-to-C^0 movement. An obvious question is where the WH sits in the structure. We might postulate that the structure is identical with the one in (48), with the exception that C^0 is not void and that the finite verb is triggered by a feature on this head. However, as this is clearly an embedded root structure, it seems more natural to assume the same structure as in a main clause. Rizzi (2001) assumes two distinct cartographic positions for the WH word, SpecInt(errogative)P and in SpecWHP separated by FocusP (50).

(50)   ... IntP ... TopP ... FocP ... WhP ... FinP ...

Westergaard & Vangsnes (2005) uses this model and suggest that in Standard Norwegian there is an EPP feature on Int^0. The head must thus be lexicalized, in other words, the finite verb moves to this head in direct interrogatives. They further suggest that IntP does the clause-typing, so that there is no ForceP above IntP. This way, the structure of the Standard Norwegian interrogative clause can be reduced to the one in (51).

(51)   IntP ... FinP ...

Thus, we can assume that the clause in (49) has the following structure CP (52) (excessive structure omitted).

(52)   [$_{IntP}$ [$_{PP}$ i hvilket fylke] [$_{Int^0}$ ligger] [$_{FinP}$ ~~PP i hvilket fylke~~ [$_{Fin^0}$ ~~ligger~~] [$_{TP}$ Skjeberg ...]]]

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[9]   From a broadcast on P4 radio, September 27 2008

The analysis in (52) is supported by the data. If overt material is placed between the WH word and the finite verb that has moved out of v^0, the clause is strongly rejected. This means that there are no available slots between the WH word and the finite verb. A model with long distance WH movement to SpecIntP combined with verb movement to Fin^0 is ruled out, as that would permit the clauses in (53) and (54).

(53)   **[Denne boka]$_i$, den$_i$ vet   jeg hvorfor de   selger ikke _$_i$ så
       this   book   that.DEM know I   why   they sell   NEG   so
       billig.
       cheap
       'This book, I know why they don't sell it so cheap.' $1.69 - 1$

(54)   **[Denne boka]$_i$, den$_i$ vet   jeg hvorfor den$_i$ selger de   _$_i$,
       this   book   that.DEM know I   why   that.DEM sell   they
       så billig.
       so cheap
       'This book, I know why they don't sell it so cheap.' $1.36 - 1$

The informants also reject an embedded WH clause with an resumptive copy and a root word-order (55) and (56). Note that the presence of the negation produces an even lower score.

(55)   **[Denne boka]$_i$, den$_i$ vet   jeg hvorfor selger de   den$_i$
       this   book   that.DEM know I   why   sell   they that.DEM
       ikke så billig.
       NEG so cheap
       'This book, I know why they don't sell it so cheap.' $1.11 - 1$

(56)   **[Denne boka]$_i$, den$_i$ vet   jeg hvorfor selger de   den$_i$ så
       this   book   that.DEM know I   why   sell   they that.DEM so
       billig.
       cheap
       'This book, I know why they don't sell it so cheap.' $1.39 - 1$

Root word-order is judged unacceptable by the informants, also without a resumptive copy. This can be because no overt material is marked as the object of the transitive verb. In other words: The embedded clause with a root word-order needs to be syntactically complete, in other words that the verb's thematic grid is complete. In the case of extraction from *that*-clauses, the presence of the high resumptive copy guarantees this. Recall that the *that*-clause with V^0-to-C^0 and no overt copy, was deemed unacceptable (see example (36)).

(57) **[Denne boka]$_i$, den$_i$ vet jeg hvorfor selger de   _$_i$ så billig.
         this   book   that.DEM know I   why   sell   they   so cheap
         'This book, I know why they don't sell it so cheap.'   1.42 − 1

Quite contrary to the case of *that*-clauses, a low resumptive copy gets a slightly better acceptance score than the examples containing a high copy. It is, however, still unacceptable (58).

(58) **[Denne boka]$_i$, den$_i$ vet jeg hvorfor de   selger den$_i$ så
         this   book   that.DEM know I   why   they sell   that.DEM so
         billig.
         cheap
         'This book, I know why they don't sell it so cheap.'   1.91 − 2

Adding a negation to the embedded clause with a low resumptive makes it even worse (59) and (60). In (59), the resumptive copy object is shifted and there is V^0-to-C^0 movement. In (60), the finite verb has not moved into the left periphery.

(59) **[Denne boka]$_i$, den$_i$ vet jeg hvorfor de   selger den$_i$
         this   book   that.DEM know I   why   they sell   that.DEM
         ikke så billig.
         NEG so cheap
         'This book, I know why they don't sell it so cheap.'   1.19 − 1

(60) **[Denne boka]$_i$, den$_i$ vet jeg hvorfor de   ikke selger
         this   book   that.DEM know I   why   they NEG sell
         den$_i$ så billig.
         that.DEM so cheap
         'This book, I know why they don't sell it so cheap.'   1.60 − 1

In other words, we see that there is no parallel between *that*-clauses and WH clauses with respect to extraction. While *that*-clauses accept both long A' movement and cyclic A' movement, WH clauses only permit the former. Norwegian strongly rejects a resumptive copy in embedded interrogative clauses.

TABLE 2: Extraction from *wh*-clauses

	high resumptive	low resumptive	V^0-to-C^0
long A' movement	–	–	–
cyclic A' movement	–	–	–

[8]   RESTRICTIONS ON SPELL-OUT

We have seen that it is possible to have both cyclic and long A' movement in the extraction of topics from a *that*-clause. I have shown that the former is contingent on V^0-to-C^0 movement of the finite verb. So far I have suggested that cyclic A' movement also requires a split CP, while long A' movement takes place with an unsplit CP. The complementizer is in $Force^0$ when CP is split (61) and in C^0 when it is not (62).

(61)   **that-clause, cyclic A' movement:**
         $[_{Force^0}$ at $[_{FinP}$ ~~DP~~ $\longrightarrow$ pronoun $[_{Fin^0}$ $V_{fin}]$ ... $]]$

(62)   **that-clause, long A' movement:**
         $[_{CP}$ $[_{C^0}$ at$]$ $[_{TP}$ subject ...$]]$

Cyclic extraction is not available in WH clauses. We have, however, seen that embedded interrogatives in principle can have S–V word order (63) or V^0-to-C^0 (64), but that the latter was rejected by the informants in the clauses with *hvorfor* 'why'.

(63)   **WH clause without V^0-to-C^0**
         $[_{CP}$ WH $[_{C^0}$ ...$]$ $[_{TP}$ subject$]]$

(64)   **WH clause with V^0-to-C^0**
         $[_{IntP}$ WH $[_{Int^0}$ $V_{fin}]$ $[_{FinP}$ ~~Wh~~ $[_{Fin^0}$ ~~V_{fin}~~$]$ $[_{TP}$ subject $]]]$

A fundamental question is why the language permits the spell-out of a high copy in V^0-to-C^0 *that*-clauses, while the spell-put of a low resumptive copy is banned from both *that*-clauses and embedded interrogatives. The answer resides in the derivation of chains. If we minimally draw the structure of the cyclic movement (with a conflated CP for reasons of economy) (65), we see that the low copy corresponds to the foot of the chain, while the high resumptive copy will be an intermediary copy (66).

(65) $[$ α ... $[_{CP}$ ~~α~~ $[_{C^0}$ V ... $[$ ~~α~~ $]]]]$
(66) $[$ XP ... $[_{CP}$ ~~high copy~~ $[_{C^0}$ V ...$]$ $[$ ~~low copy~~ $]]]$

If we assume, following Nunes (2004), that only intermediary copies can be spelled out, we immediately see why a low copy cannot be spelled out in either of the operations, regardless of the composition of CP: The low copy will always correspond to the foot of the chain and be inaccessible for spell-out.

As such, the impossibility of spelling out a low copy follows from the theory of chains. There is, however, one more question that needs to be addressed: How can an embedded object be extracted to the matrix clause? Structurally these CPs are embedded in the matrix CP, which are both strong phases (Chomsky,

2001). According to the Phase-Impenetrability Condition (PIC), only elements at the edge of a phase can be extracted to the higher phase. In order to escape the embedded CP, the object must thus make its way to its edge.

When there is V^0-to-C^0 movement and the presence of a high copy, this copy is already in the left periphery. I will assume that it moves through SpecForceP to the matrix clause (67) (only showing relevant structure).

(67)   Denne boka, den vet jeg [$_{\text{ForceP}}$ ~~denne boka~~ [$_{\text{Force}^0}$ at] [$_{\text{FinP}}$ ~~denne boka~~ $\longrightarrow$ den [$_{\text{Fin}^0}$ selger] [$_{\text{TP}}$ de ... ~~denne boka~~]]]

As for the instances of long A' movement, we have suggested that these cases are instances of a single CP (see (62) and (63)). In the case of long A' movement out of *that*-clauses, the operation is fairly straight forward. We have already stated that the CP is not split, and that the complementizer sits in C^0. The SpecCP is thus available as an escape hatch for the embedded object. The full operation is presented in (68).

(68)   [$_{\text{LDP}}$ denne boka [$_{\text{FinP}}$ ~~denne boka~~ $\longrightarrow$ den [$_{\text{Fin}^0}$ vet] [$_{\text{TP}}$ jeg [$_{\text{CP}}$ ~~denne boka~~ [$_{\text{C}^0}$ at] [$_{\text{TP}}$ de [$_{\text{NegP}}$ ikke [$_{\text{V}^0}$ selger] [$_{\text{DP}}$ ~~denne boka~~]]]]]]]]

Extraction from embedded interrogatives is however less obvious as the WH word occupies the SpecCP of a non-split CP. As such, the escape from the CP is blocked. We would in fact expect islands effects, but the data clearly tells us that this is not the case. In order to account for these facts, we need to postulate a split-CP also in the cases where there is no V^0-to-C^0 movement. I will assume that the WH word is attracted to SpecINTP and that the finite verb is in v^0. Above IntP ForceP is projected with a silent complementizer in its head (COMP) and its specifier available as an escape hatch. In embedded contexts Int^0 does not carry an EPP feature, so no other material is attracted to the left periphery. This gives us the structure in (69).

(69)   [$_{\text{LDP}}$ denne boka [$_{\text{FinP}}$ ~~denne boka~~ $\longrightarrow$ den [$_{\text{Fin}^0}$ vet] [$_{\text{TP}}$ jeg [$_{\text{ForceP}}$ ~~denne boka~~ [$_{\text{Force}^0}$ COMP] [$_{\text{IntP}}$ hvorfor [$_{\text{Int}^0}$] [$_{\text{FinP}}$ [$_{\text{Fin}^0}$] [$_{\text{TP}}$ de [$_{\text{NegP}}$ ikke [$_{\text{V}^0}$ selger] [$_{\text{DP}}$ ~~denne boka~~]]]]]]]]]]

In embedded root questions, IntP carries an EPP feature, and more importantly there is no ForceP above IntP. This accounts for the impossibility to extract material from the embedded clause. The left periphery of the embedded clause is identical to the left periphery of the root clause, as suggested by Westergaard & Vangsnes (2005).

[9] CONCLUSION

By using a large corpus based on informants, we have mapped two different ways of construction with respect to extraction from embedded clauses: long A' extraction and cyclic A' extraction. *That*-clauses permit both types, while WH clauses only permit long extraction. While long A' extraction moves an element from its base generated position to the high left periphery without intermediary stops, the cyclic movement moves the fronted element through the left periphery.

We have seen that the respondents clearly permit the long A' extraction strategy in both cases. Cyclic A' extraction is ruled out from embedded interrogative clauses, and in embedded *that*-clauses they require V^0-to-C^0 movement by the verb. The spoken language in principle also permits V^0-to-C^0 movement in embedded interrogatives. However, this kind of embedded root clauses must be syntactically complete, so that extraction is only possible when a resumptive copy can occur in the embedded root clause. In embedded root questions introduced by *why* the only possible position for the resumptive copy is the foot of the chain, which cannot be spelled out (Nunes, 2004). This explains why a root structure is ruled out in this context.

Further, we have seen that the left periphery is not identical in all instances of embedded root contexts. While a split CP in the case of *that* clauses is identical to the one in root contexts, embedded and direct WH clauses do not have the same left periphery: WH matrix clauses do not project a ForceP above IntP, while embedded WH clauses do so.

In this discussion I have focused on the structure of the CP field in the embedded clause. A question that is linked to PIC is that of the structure of the vP and the extraction from the vP phase to the CP phase. I leave this for future research.

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