

A new Phase for reference in Syntax

An account of *wh*-extraction phenomena in Germanic within the Phase Reference Model

MA thesis

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Acknowledgments

As is marked on the front page, you are about to read a thesis on *wh*-extraction phenomena in Germanic, embedded in some kind of framework, written by some person Cora Pots: *me*. However, you wouldn't be reading this thesis at all – or at least not in the current state – if it weren't for a great number of people. With the risk of boring the reader, *you*, already before the thesis has actually started, I want to show how grateful I am for all the help I received during the investigation for and writing of this thesis.

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List of abbreviations

AgrP	Agreement Phrase
C	Complementizer head
Comp	Complementizer
CP	Complementizer Phrase
DAT	Dative case
DEF	Definite
DET	Determiner
DP	Determiner Phrase
ECP	Empty Category Principle
EPP	Extended Projection Principle
INDEF	Indefinite
FinP	Finiteness Phrase
ForceP	Force Phrase
FUT	Future tense
LF	Logical Face
NIC	Nominal Island Condition
NOM	Nominative case
NP	Noun Phrase
REL	Relative pronoun
PASS	Passive voice
PF	Phonological Face
Pl	Plural
PR model	Phase Reference model
T	Tense head
TP	Tense Phrase
SF	Stylistic Fronting
Spec	Specifier
vP	(Little) Verb Phrase
V	Verb head
VP	Verb Phrase
V2	Verb second word order
Sg	Singular

Table of contents

CHAPTER 1. INTRODUCTION	6
1.1 Subject/object asymmetries in <i>wh</i> -extraction contexts in Germanic	6
1.2 Previous studies on the <i>that</i> -trace effect	8
1.3 Outline of the thesis	9
CHAPTER 2. EMPIRICAL BACKGROUND	10
2.1 Introduction	10
2.2 Variation in the overtiness of the complementizer	10
2.2.1 Languages exhibiting the <i>that</i> -trace effect	10
2.2.1.1. English, Danish and Swedish	10
2.2.1.2 German	10
2.2.2 Languages not exhibiting the <i>that</i> -trace effect	11
2.2.3 A special case: Norwegian	12
2.3 The adverb effect	12
2.3.1 The adverb effect as remedy for the <i>that</i> -trace effect	12
2.3.2 The adverb effect as remedy for the need for <i>er</i>	13
2.4 The insertion of an expletive pronoun	13
2.4.1 Dutch	13
2.4.2 Danish	14
2.4.3 Icelandic	15
2.5 The case of Stylistic Fronting: Icelandic	15
2.6 Summary of the cross-Germanic variation	16
2.7 The empirical focus: English, Dutch and Icelandic	17
2.8 The research questions	21
CHAPTER 3. METHODOLOGY	22
3.1 Introduction	22
3.2 Questionnaire design	22
3.2.1 Icelandic and English	22
3.2.1.1 The core of the questionnaire	22
3.2.1.2 The language specific section of the Icelandic questionnaire	24
3.2.1.3. Format of the English and Icelandic questionnaire	25
3.2.2 Dutch	25
3.3 Task and procedure	26
3.4 Informants	27
3.4.1 English informants	27
3.4.2 Icelandic informants	27
3.4.3 Dutch informants	27
3.5 Data preparation and statistical analyses	27
CHAPTER 4. RESULTS	29
4.1 Introduction	29
4.2 English results	29
4.2.1 Overtiness of the complementizer	29
4.2.2 Transitivity	30
4.2.3 Object type	31
4.2.4 Presence of an adverb	31

4.2.5 Summary of English results	32
4.3 Icelandic results	32
4.3.1 Overtness of the complementizer	32
4.3.2 Transitivity	34
4.3.3 Object type	34
4.3.4 Presence of an adverb	35
4.3.5 Expletive insertion	35
4.3.6 Stylistic Fronting	36
4.3.7 Summary of Icelandic results	37
4.4 Dutch results	37
4.4.1 Presence of <i>er</i>	37
4.4.2 Transitivity	38
4.4.3 Object type	39
4.4.4 Presence of an adverb	39
4.4.5 Preference for the presence/absence of <i>er</i>	41
4.4.6 Summary of Dutch results	42
4.5 Overview of the results	43
CHAPTER 5. THE SYNTACTIC ANALYSIS	44
5.1 Introduction	44
5.2 The Phase Reference Model	45
5.2.1 Introduction to the model	45
5.2.2 The nominal domain	46
5.2.3 The clausal domain	47
5.2.4 The verbal domain	48
5.3 A PR model account of variation in <i>wh</i> -extractions in Germanic	51
5.3.1 Recapitulation of the results	52
5.3.2 One step further: the referentiality of an interrogative indefinite CP	52
5.3.3 Account for the cross-Germanic variation	57
5.3.2.1 Icelandic	57
5.3.2.2 Dutch	60
5.3.2.3 English	64
5.3.3 Account for the transitivity effect	69
5.3.4 Account for the definiteness effect of the embedded object	71
5.4 Previous accounts	73
5.4.1 Introduction	73
5.4.2 English: Pesetsky & Torrego (2001)	73
5.4.3 Scandinavian: Lohndal (2007)	73
CHAPTER 6. EXTENSION TO MAINLAND SCANDINAVIAN	75
6.1 Introduction	77
6.2 Predictions for Mainland Scandinavian	75
6.3 Danish	77
6.3.1 Informants	77
6.3.2 Danish results	77
6.3.2.1 Declarative clauses	77
6.3.2.2 <i>Wh</i> -subject versus <i>wh</i> -object extraction	77
6.3.2.3 Definiteness of the embedded object DP	77
6.3.2.4 Transitivity effect	78

6.3.3 Evaluation of application	78
6.4 Swedish	78
6.4.1 Informants	78
6.4.2 Swedish results	79
6.4.2.1 Declarative clauses	79
6.4.2.2 <i>Wh</i> -subject versus <i>wh</i> -object extraction	79
6.4.2.3 Definiteness of the embedded object DP	79
6.4.2.4 Transitivity effect	80
6.4.3 Evaluation of application	80
CHAPTER 7. DISCUSSION	81
References	83
Appendices	87
Appendix A	87
Appendix B	91
Appendix C	96
Appendix D	102
Appendix E	105
Appendix F	111

CHAPTER 1. INTRODUCTION

1.1 Subject/object asymmetries in *wh*-extraction contexts in Germanic

In many natural languages we can observe asymmetries between subjects and objects in their behavior in similar syntactic environments. One such asymmetry can be found in *wh*-extraction contexts in English, as first noticed by Perlmutter (1968; 1971). His observation was that *wh*-subject extraction across the overt complementizer *that* is not allowed – instead the complementizer needs to be omitted – while in *wh*-object extractions this is not the case. This so-called *that*-trace effect¹ is illustrated in (1).

- (1) a. *Who do you think [that __ eats an apple]? Who do you think [__ eats an apple]? *English*
 b. Who do you think [that Sofia likes __]? Who do you think [Sofia likes __]?

English is not the only Germanic language to show this particular subject/object asymmetry in *wh*-extraction contexts, it is also found in Danish and Swedish (see for an overview Lohndal (2007)). However, this pattern does not hold across all Germanic languages. For example, Dutch allows extraction across an overt complementizer, irrespective of the type of *wh*-element that is extracted. In fact, the complementizer can never be omitted in these contexts:

- (2) a. Wie denk je [*(dat) __ een appel eet]? *Dutch*
 Who think you that an apple eats
 ‘Who do you think is eating an apple?’
 b. Wat denk je [*(dat) Sofia __ eet]?
 What think you that Sofia eats
 ‘What do you think (that) Sofia is eating?’

As can be seen in the examples, in *wh*-subject as well as in *wh*-object extractions, the overt complementizer *dat* must be present. However, Dutch shows a different subject/object asymmetry in *wh*-extraction sentences. In *wh*-subject extractions, the expletive pronoun *er* can be inserted, while this possibility is ruled out in *wh*-object extractions. This is shown in (3).

- (3) a. Wie denk je [dat __ *er* een appel eet]? *Dutch*
 Who think you that there an apple eats
 ‘Who do you think is eating an apple?’
 b. *Wat denk je [dat *er* Sofia __ eet]?
 What think you that there Sofia eats
 ‘What do you think (that) Sofia is eating?’

¹The name ‘*that*-trace effect’ stems from the early approaches to account for this subject/object asymmetry, such as that of Chomsky & Lasnik (1977). They were one of the first to state that the effect was somehow caused by the subject-trace, arguing for a *That*-trace filter. A subject-trace is a trace that is left behind when the subject is moved to a higher position in the syntactic tree. In later accounts this idea of the subject-trace being the problem was developed into the claim that the subject-trace in the embedded clause was not properly governed in these constructions. That is, the overt complementizer was said not to be a proper governor as opposed to a null complementizer. In *wh*-object extractions, this problem did not occur, because the trace of the *wh*-object would be properly governed by the finite verb. For convenience sake, throughout the thesis I will continue to refer to the phenomenon as the ‘*that*-trace effect’. Note however, that I do not use it to imply that I support the theory that came up with this name.

- c. *Wat denk je [dat Sofia *er* belooft]?
 What think you that Sofia there promises
 What do you think (that) Sofia is promising?

Here we see that the insertion of the expletive pronoun *er* is acceptable in *wh*-subject extraction contexts, but ruled out when a *wh*-object is extracted, both in subject position (3b) and in the position of the extracted *wh*-object (3c). However, the insertion of *er* in these contexts does not seem to be optional. That is, not all speakers of Dutch need the insertion of *er* in *wh*-subject extractions. In addition, there seem to be certain restrictions on the insertion of *er*. This will be discussed in more detail in Chapter 2.

Icelandic displays a similar picture. On the one hand, the complementizer cannot be omitted in *wh*-extraction sentences (thus showing an ‘anti’ *that*-trace effect), illustrated in (4).

- (4) a. Hver sagðir þú [*(að) __ væri kominn til Reykjavíkur]? *Icelandic*
 Who said you that was come to Reykjavik
 ‘Who did you say that had come to Reykjavik?’ [Maling & Zaenen, 1978: 478-479]
- b. Hverju heldur þú [*(að) hann hafi stolið __]? *Icelandic*
 What think you that he has stolen
 ‘What do you think that he has stolen?’ [Holmberg, 2000: 448]

Here we see that in Icelandic the complementizer is also obligatory, both when a *wh*-subject is extracted and when a *wh*-object is extracted. On the other hand, we see a subject/object asymmetry that resembles the asymmetry in Dutch, that is, in Icelandic some overt material can be inserted between the overt complementizer and the finite verb in *wh*-subject extraction sentences, whereas this is not allowed in *wh*-object extractions. However, as opposed to Dutch, this material is not an expletive pronoun. Rather, elements such as non-finite verbal heads, verb particles, predicative adjectives and nominal predicates can be fronted. This construction is called Stylistic Fronting (henceforth SF), and seems to be an optional construction as well (Maling & Zaenen 1978; Holmberg 2000; Franco 2007). This is illustrated in (5).

- (5) a. Hver heldur þú [að __ hafi stolið hjólinu]? *Icelandic*
 Who think you that has stolen bike.DEF
 ‘Who do you think has stolen the bike?’
- b. Hver heldur þú [að stolið __ hafi hjólinu]?
 Who think you that stolen has bike.DEF
 ‘Who do you think has stolen the bike?’ [Holmberg, 2000: 446]

In (5a) we see that the *wh*-subject is extracted across the complementizer *að* without any overt material intervening between the complementizer and the finite verb resulting in a grammatical sentence. In (5b) we see the same sentence with a stylistically fronted item, the past participle *stolið*, also creating a grammatical sentence.

Taken together, we can observe two types of subject/object asymmetries in *wh*-extraction contexts in Germanic: i) English, Danish and Swedish do not allow *wh*-subject extraction across an overt complementizer, while this is unproblematic for *wh*-object extraction; ii) Dutch and Icelandic only

allow the insertion of an expletive pronoun and SF respectively in *wh*-subject extraction contexts, whereas this is not possible when a *wh*-object is extracted. These observations lead to the need for an account for this cross-Germanic variation in *wh*-extraction contexts, which is still lacking at the moment in generative syntax.

1.2 Previous studies on the *that*-trace effect

The *that*-trace effect in English received a great amount of attention in the late 1970s and early 1980s in the Government and Binding (GB) framework of generative syntax (amongst others Bresnan 1972, 1977; Chomsky & Lasnik 1977; Kayne 1980; Taraldsen 1978; Pesetsky 1979, 1982). Some of these accounts of the *that*-trace effect argued that the effect was caused by the linear adjacency between the complementizer and the extraction site of the *wh*-subject. Bresnan (1972, 1977) proposed that no DP could be moved if this movement involves the crossing of an adjacent complementizer. Chomsky & Lasnik (1977) stated that the phenomenon was caused by the trace that was left after the *wh*-subject was moved to the higher clause. They proposed the *That*-trace filter; a filter that did not allow a complementizer of a *wh*-extraction clause to be directly followed by the trace of the moved *wh*-element. Since these accounts only consider the linear order of the clause, they were soon abandoned and replaced by structural accounts of the phenomenon (Pesetsky, to appear).

Other accounts of the *that*-trace effect did not consider linear order, but structural order to come to a solution for the phenomenon. These accounts in turn can be divided into Nominative Island Condition (NIC) accounts, and Empty Category Principle (ECP) accounts. NIC accounts make use of the Nominative Island Condition (NIC) proposed in Chomsky (1980). The NIC states that a nominative anaphor cannot be free in S' (Modern CP). The NIC was based on observations in many languages that nominative reflexives cannot occur in the subject position of the embedded clause (6).

(6) *Mary_i said [_S that *herself*_i saw Bill]. [Pesetsky, to appear: 13]

In this example, we see that the nominative reflexive *herself* is free in S' (or CP) and that this results in an ungrammatical sentence. As the nominative reflexive is in the same position as the nominative subject trace in *wh*-subject extraction sentences, Chomsky (1980) proposed that *wh*-traces behave in the same way as anaphors in that they cannot be free in S', as for example can be seen (7).

(7) *Who_i do you think [_S that *t*_i saw Bill]?

However, a problem with this comparison of the behavior of nominative reflexives and nominative *wh*-traces is the role of the complementizer in regulating the effect. That is, whereas (7) becomes grammatical with the deletion of the complementizer, this is not the case with (6), shown respectively in (8) and (9).

(8) Who_i do you think [_S *t*_i saw Bill]?

(9) *Mary_i said [_S *herself*_i saw Bill].

Pesetsky (1980) tried to solve this problem. He argued that as the *wh*-trace in a *wh*-subject extraction sentence has to be deleted in order for the *That*-trace filter to be satisfied, the deletion of this trace in turn violates the NIC. This situation does not arise in the case of *wh*-object extractions since non-nominative anaphors do not fall under the NIC. One important problem with this account is the fact that the *That*-trace filter is structurally violated in languages such as Dutch and Icelandic.

Kayne (1980) proposed, in the light of NIC, that the binder of a nominative trace must be assigned nominative case as well. He argued that the presence of *that* in C blocks this case-assignment. As Pesetsky (to appear) remarks, the largest problem with this account is that Kayne needs a complex stipulation for why the presence of *that* should block the case assignment of the binder of the trace.

ECP accounts try to explain the *that*-trace effect within the Government and Binding framework. The basis for all accounts was the Empty Category Principle (ECP), as first formulated by Chomsky (1981). The ECP stated that every trace should be properly governed. The general idea was that the object trace is always properly governed by the verb. The subject-trace, which is VP-external, is not properly governed by the verb and therefore causes the *wh*-subject extraction sentence to be ungrammatical. Rizzi (1990) then proposed that there are two instances of C in English: one realized as *that* and one as Agr. Agr was said to be able to properly govern the subject-trace, whereas *that* could not. With the abandonment of notions such as Government at the wake of the Minimalist program, ECP accounts for the *that*-trace effects were abandoned as well (Pesetsky, to appear).

As Pesetsky (to appear) remarks, all these accounts faced some challenging problems, and instead of searching for new solutions, almost no new papers were devoted to the topic that received so much attention in the 1990s. However, with the abandonment of the notion of ‘proper government’ by Chomsky and the development of the Minimalist Program (Chomsky 1995, 1998) of generative syntax in the end of the 1990s, a renewed interest in the phenomenon started to emerge. Pesetsky and Torrego (2001) were one of the first to take on the puzzle of the *that*-trace effect again. However, their theory focused only on English, and fails to explain the variation attested in Germanic *wh*-extraction contexts. Lohndal (2007) recently came up with a unified account concerning the *that*-trace effect for both English and the variation as observed in Scandinavian. However, Dutch was not included in this analysis, and several related phenomena, such as SF in Icelandic, were left unexplained. Thus, there is still no satisfactory account within the Minimalist Program that explains the cross-Germanic variation in subject/object asymmetries in *wh*-extraction contexts. The goal of the present thesis is to provide such an account.

1.3 Outline of the thesis

The outline of this thesis is as follows. In Chapter 2, I will give a detailed overview of the variation in *wh*-extraction contexts in Germanic. Furthermore, I will discuss the empirical focus of this study, and present the research questions. In Chapter 3, I will present the methodology of this study, explaining the design of the research questionnaires, present the groups of informants for each language and discuss the task and procedure. Chapter 4 is devoted to the presentation of the outcomes of the research questionnaires. In Chapter 5, I will come up with a new syntactic analysis for the outcomes presented in Chapter 4. Also, I will discuss previous accounts of the subject/object asymmetries in *wh*-extraction contexts in the languages under study and show their shortcomings in comparison to the new analysis.. In Chapter 6, I will which predictions this new analysis makes for two Mainland Scandinavian languages, namely Danish and Swedish. I will investigate whether the predictions made for Danish and Swedish are borne out by presenting and discussing the gathered data for these languages. Finally, in Chapter 7, I will discuss the overall findings of the present study and come to a conclusion with respect to the research questions as given in the next chapter.

CHAPTER 2. EMPIRICAL BACKGROUND

2.1 Introduction

In this chapter, I will discuss the following types of variation that can be found in Germanic languages with respect to *wh*-extraction contexts: i) variation in the overtiness of the complementizer; ii) the adverb effect; and iii) the insertion of an expletive pronoun. Furthermore, I will discuss the case of Stylistic Fronting in Icelandic. Then, I will summarize the variation attested in Germanic *wh*-extractions. After that, I will discuss the empirical focus of this thesis. In the last section, I will present the research questions of this thesis.

2.2 Variation in the overtiness of the complementizer

2.2.1 Languages exhibiting the *that*-trace effect

2.2.1.1. English, Danish and Swedish

As was already discussed in the previous chapter, English, Danish and Swedish all show the *that*-trace effect in *wh*-subject extraction sentences, as can be seen in (1), (2) and (3) respectively.

- (1) a. *Who do you think [that __ eats an apple]? *English*
 b. Who do you think [__ eats an apple]?
- (2) a. *Hvilken kok tror du [at __ har kogt de her grønsager]? *Danish*
 Which cook think you that __ has cooked these here vegetables
 ‘Which cook do you think that has cooked these vegetables?’
 b. Hvilken kok tror du [__ har kogt de her grønsager]?
 Which cook think you has cooked these here vegetables
 ‘Which cook do you think has cooked these vegetables?’ [Vikner, 1995: 12]
- (3) a. *Vilken elev trodde ingen [att __ skulle fuska]? *Swedish*
 Which pupil thought nobody that __ would cheat
 ‘Which pupil didn’t anyone think would cheat?’
 b. Vilken elev trodde ingen [__ skulle fuska]?
 Which pupil thought nobody __ would cheat
 ‘Which pupil didn’t anyone think would cheat?’ [Engdahl, 1982: 166]

These three Germanic languages are clear cases of the *that*-trace effect. Note however that each language shows dialectal variation to some extent, as observed for English by Sobin (1987), for Danish by Bjerre (2012) and Swedish by Holmberg (1986). I will not go into the details of this variation here, it suffices to note that some dialects of these languages do allow *wh*-subject extraction across an overt complementizer.

2.2.1.2 German

According to Featherston (2005), in the literature the *that*-trace effect is standardly thought to be absent in German since *wh*-extraction across the complementizer *dass* is never allowed. That is, both *wh*-subject and *wh*-object extractions require the omission of the overt complementizer:

- (4) Wer meint Doris, [liebt __ Gerhard]?² *German*
 Who.NOM thinks Doris loves __ Gerhard
 ‘Who does Doris think loves Gerhard?’
- (5) Wen meint Doris, [liebt Gerhard __]?
 Whom.DAT thinks Doris loves Gerhard __
 ‘Who does Doris think (that) Gerhard loves?’ [Featherston, 2005: 1280]

However, it is important to mention that there are two types of German complementizer clauses. The first type, as given in examples (4) and (5), have a V2 word order, and is incompatible with an overt complementizer. The word order in the embedded clause does not reveal whether the extracted element is the subject or the object. Instead, this is indicated by the case-marking on the *wh*-pronoun (*Wer* as nominative, *Wen* as dative). The second type has a V-final word order, and shows an overt complementizer:

- (6) Wer meint Doris, [dass __ Gerhard liebt]? *German*
 Who.NOM thinks Doris that __ Gerhard loves
 ‘Who thinks Doris loves Gerhard?’
- (7) Wen meint Doris, [dass Gerhard __ liebt]?
 Whom.DAT thinks Doris that Gerhard __ loves
 ‘Who does Doris think that Gerhard loves?’ [Featherston, 2005: 1280]

Sentences such as (6) and (7) are only marginally acceptable and argued not to be part of the standard language. They are fairly common in southern varieties of German however (Featherston 2005). Featherston (2005) showed with an experimental study that even though extractions from a *dass*-clause are only marginally acceptable, they still show a subject/object asymmetry. That is, he found that *wh*-subject extractions across the overt complementizer are less acceptable than *wh*-object extractions across the overt complementizer. These findings are supported by a recent study on subject/object asymmetries in extraction contexts in German by Kiziak (2010).

2.2.2 Languages not exhibiting the *that*-trace effect

In chapter 1, it was already mentioned that Dutch and Icelandic are the two Germanic languages that do not exhibit the *that*-trace effect. For convenience, the examples are repeated here in (8) and (9).

- (8) Wie denk je [* (dat) __ een appel eet]? *Dutch*
 Who think you that an apple eats
 ‘Who do you think is eating an apple?’
- (9) Hver sagðir þú [* (að) __ væri kominn til Reykjavíkur]? *Icelandic*
 Who said you that was come to Reykjavik
 ‘Who did you say that had come to Reykjavik?’ [Maling & Zaenen, 1978: 478-479]

The overt complementizer can never be omitted in *wh*-extraction sentences in Dutch and Icelandic. These languages thus show a strict ‘anti’ *that*-trace effect.

² In the original examples as presented in Featherston (2005), no indication of case on the *wh*-pronoun was given. The indications in these and the following German examples are mine.

2.2.3 A special case: Norwegian

Since Norwegian is the only Germanic language that was never completely standardized, it is hard to speak of the Norwegian groups of dialects as one language (Lohndal, 2007). Unsurprisingly, the Norwegian varieties show a lot of variation, also in *wh*-extraction contexts. As Benzen (2014) remarks, on the one hand, *wh*-subject extractions without the overt complementizer *at* are generally accepted all over Norway (10).

- (10) Hvem tror du [__ har gjort det]? Norwegian
 Who think you have done it
 ‘Who do you think has done it?’ [Bentzen, 2014: 438]

On the other hand, in various places of Eastern Norway *wh*-subject extractions across the complementizer are also allowed (11).

- (11) Hvem tror du [at __ har gjort det]? Norwegian
 Who think you that have done it
 ‘Who do you think has done it?’ [Bentzen, 2014: 439]

These varieties thus do not show the *that*-trace effect.

In addition, as has been observed by Nordgård (1985, 1988) and Westergaard, Vangsnes & Lohndahl (2012), some varieties use the relative pronoun *som* rather than the complementizer *at* in *wh*-subject extraction sentences, for example:

- (12) Hvem tror du [som __ har gjort det]? Norwegian
 Who think you that have done it
 ‘Who do you think has done it?’ [Bentzen, 2014: 440]

The use of *som* rather than *at* in *wh*-subject extractions is accepted in northern parts of Norway, as well as at the northwestern coast of Norway.

Apart from the variation in the absence/presence of an overt complementizer in *wh*-subject extractions and the type of complementizer used, there is an extremely strong preference in spoken language to use a cleft construction instead of the complementizer clause constructions given above (personal communication with Marit Westergaard). This is illustrated in (13).

- (13) Hvem tror du [det er [som skriver brevet]]? Norwegian
 Who think you this is that.REL write letter.DEF
 ‘Who do you think it is that is writing the letter?’

It is clear that Norwegian shows a lot of dialectal variation when we consider *wh*-extraction contexts. In spoken language, there is even a very strong preference for cleft constructions as opposed to embedded complementizer clauses in extraction contexts.

2.3 The adverb effect

2.3.1 The adverb effect as remedy for the *that*-trace effect

In English, we see that the *that*-trace effect can be alleviated when a fronted adverbial phrase intervenes between the overt complementizer and the rest of the clause. This so-called ‘adverb effect’ was first discovered by Culicover (1992) and is illustrated in (14).

- (14) Who do you think [that without any reasonable doubt __ will win the game]? *English*

This adverb effect is also found in Swedish (15) and German (16).

- (15) Vem_i är du glad [att inte __ kunde komma]? *Swedish*

Who are you glad that not could come

‘Who are you glad couldn’t come?’

[Lohndal 2007: 51]

- (16) Wer glaubst du, [dass gestern __ hätte verunglücken können] *German*

Who believe you that yesterday had have.an.accident could

‘Who do you believe could have had an accident yesterday?’ [Salzmann et al. to appear: 2]

In these three languages, the insertion of an adverb or adverbial phrase can be used to improve the extraction of a *wh*-subject across an overt complementizer.

2.3.2. The adverb effect as remedy for the need for *er*

In Dutch, it seems to be the case that the insertion of an adverbial phrase alleviates the need for *er* in *wh*-subject extractions in matrix clauses:

- (17) Wie zingt (er) *in de kerk* vanavond? *Dutch*

Who sings there in the church tonight

‘Who is singing in the church tonight?’

[Klockmann & Wesseling, 2015: 1]

It might be that this also extends to embedded clauses, as further investigated by Klockmann & Wesseling (to appear). For Danish, Norwegian and Icelandic, I am not aware of studies that have investigated the presence of the adverb effect.

2.4 The insertion of an expletive pronoun

2.4.1 Dutch

As was already indicated in Chapter 1, in Dutch the expletive pronoun *er* (see Bennis 1986) can be inserted in embedded clauses with *wh*-subject extractions. One of the example sentences is repeated here in (18):

- (18) Wie denk je [dat __ *er* een appel eet]? *Dutch*

Who think you that there an apple eats

‘Who do you think is eating an apple?’

However, there seem to be two types of Dutch speakers, one that need the presence of *er* in these *wh*-subject extractions and one that do not need *er* (Klockmann & Wesseling, to appear). So for the second type of Dutch speakers, a sentence such as (19) is as acceptable as sentence (20), whereas for the first type of Dutch speakers, only sentence (20) is acceptable.

- (19) Wie denk je [dat __ een taart bakt]? *Dutch*

Who think you that a cake bakes

‘Who do you think is baking a cake?’

- (20) Wie denk je [dat __ *er* een taart bakt]? Dutch
 Who think you that there a cake bakes
 ‘Who do you think is baking a cake?’

The nature of the underlying principles for this between-speakers variation is still a topic for further research. Moreover, the insertion of *er* seems to have some relation with the definiteness of the embedded object. The insertion of *er* is only marginally acceptable when the object of the embedded clause is a personal pronoun, as shown in (21)³.

- (21) a. ??Wie denk je [dat __ *er* hem belt]? Dutch
 Who think you that there him calls
 ‘Who do you think is calling him?’
 b. Wie denk je [dat __ hem belt?]
 Who think you that him calls
 ‘Who do you think is calling him?’

In contrast, when the object of the embedded clause is an indefinite object, leaving out *er* results in a less acceptable sentence than the same sentence in which *er* is inserted (22).

- (22) a. ??Wie denk je [dat __ een man belt]? Dutch
 Who think you that a man calls
 ‘Who do you think is calling a man?’
 b. Wie denk je [dat __ *er* een man belt?]
 Who think you that there a man calls
 ‘Who do you think is calling a man?’

These examples show that the insertion of the expletive pronoun *er* is thus restricted, displaying a definiteness effect of the embedded object (see Klockmann & Wesseling 2015).

2.4.2 Danish

In Danish, we also see that an expletive pronoun *der* is used when the subject of an *at*-clause has been extracted, as can be seen in (23).

- (23) Hvem tror du [at __ *der* har gjort det]? Danish
 Who think you that there have done it
 ‘Who do you think has done it?’ [Engdahl 1986: 123]

Recall that Danish normally shows the *that*-trace effect (cf. example (2)). What we thus see in (19) is that the insertion of *der* alleviates the *that*-trace effect. The exact restrictions on *der*-insertion in *wh*-extraction contexts in Danish have, as far as I am aware of, not yet been investigated.

³ Examples (21) and (22) are my own judgments as a native Dutch speaker.

2.4.3 Icelandic

In Icelandic, the expletive *það* behaves similarly to Dutch *er* in clause initial position. This is exemplified in (24) and (25).

- (24) *Er* komt iemand naar Reijkjavik. *Dutch*
 There comes someone to Reykjavik.
 ‘Someone is coming to Reykjavik.’
- (25) *Það* er einhver kominn til Reykjavíkur. *Icelandic*
 There is someone come to Reykjavik.
 ‘Someone is coming to Reykjavik.’ [Maling & Zaenen, 1978: 488]

In Dutch, as we saw above, the expletive *er* can also be inserted in the embedded clause (26). However, this is not an option in Icelandic (27).

- (26) Wie zei je [dat __ *er* naar Reijkjavik komt]? *Dutch*
 Who said you that there to Reykjavik comes
 ‘Who did you say that comes to Reykjavik?’
- (27) Hver sagðir þú [að __ (*það) væri kominn til Reykjavíkur? *Icelandic*
 Who said you that there was come to Reykjavik
 ‘Who did you say had come to Reykjavik?’ [Maling & Zaenen, 1978, 479,480]

Holmberg (2000) also states that in Icelandic the insertion of the expletive *það* can never occur in embedded clauses. Agantýsson (2011) however, showed that this claim is too strict. In an empirical study on the syntax of Icelandic embedded clauses, he found that a large group of the youngest speakers (around fifteen years old) allowed the insertion of the expletive *það* in impersonal extraction contexts such as the one in (28):

- (28) Hvaða máli hélt þú [að __ það hefði verið sagt frá]? *Icelandic*
 Which matter thought you that there had been told about
 ‘Which matter did you think there was told about?’ [Agantýsson 2011: 154]

Older speakers were more reluctant to accept this kind of sentence. This might indicate that the expletive insertion strategy is starting to become more available for young speakers of Icelandic, whereas this is not an option for older speakers. Whether the insertion of the expletive is also an option for (younger) Icelandic speakers in other *wh*-extraction contexts was investigated in the questionnaires used in the current study.

2.5 The case of Stylistic Fronting: Icelandic

In Chapter 1 the Icelandic phenomenon Stylistic Fronting (SF) was briefly mentioned as a construction in which certain overt material is fronted in extraction contexts. The example is repeated here in (29).

- (29) Hver heldur þú [að stolið __ hafi hjólinu]? *Icelandic*
 Who think you that stolen has bike.DEF
 ‘Who do you think has stolen the bike?’ [Holmberg, 2000: 446]

SF is not only possible in subject extraction contexts, but also in impersonal constructions and constructions in which an indefinite NP subject is postponed (Maling 1980). All these constructions have one thing in common, namely that the subject is not in its canonical preverbal position.

According to Franco (2009) the syntactic function of SF is still not clear, if there even is such a function. One very problematic aspect for theories of SF is that the category of elements that can be fronted is rather heterogeneous. This category consists of elements such as non-finite verbal heads, verb particles, predicative adjectives and nominal predicates (Franco 2009). A second problem is the optional nature of SF. As was already mentioned in the previous chapter, both (29) and (30) are acceptable in Icelandic. The fronting of a SF item is thus not obligatory in such sentences.

- (30) Hver heldur þú [að __ hafi stolið hjólinu]? *Icelandic*
 Who think you that has stolen bike.DEF
 ‘Who do you think has stolen the bike?’ [Holmberg, 2000: 446]

According to Jóhanson (1991), SF is still productive in embedded clauses, but in main clauses it is restricted to written language. However, no recent studies have collected judgments of Icelandic speakers on *wh*-extraction contexts with and without SF (although see Agantýsson (2011) for other types of SF environments). The development of syntactic theory on subject/object asymmetries in *wh*-extraction contexts in Germanic would benefit greatly from such a data collection.

2.6 Summary of the cross-Germanic variation

In summary, we have seen that English, Danish, Swedish and German (though to a lesser extent) show the *that*-trace effect, whereas Dutch and Icelandic show an ‘anti’ *that*-trace effect. Norwegian shows too much dialectal variation to place it in one of the two camps. Moreover, in spoken Norwegian there is a strong preference for cleft constructions rather than embedded complementizer clauses. This implies that Norwegian has developed a different strategy to overcome problems with *wh*-subject extraction contexts. We have also seen that English, Swedish, German and Dutch exhibit an adverb effect. That is, when an adverb or adverbial phrase is fronted and intervenes between the overt complementizer and the rest of the embedded clause, the *that*-trace effect seems to be alleviated. Considering the option of expletive insertion, we have seen that this is possible in Dutch and Danish, and possibly also in Icelandic. Finally, the case of Stylistic Fronting in Icelandic was discussed, a phenomenon of which its syntactic function is not yet clear. In addition, SF is optional, which raises the question as to what the difference is between *wh*-subject extractions with a stylistically fronted element and *wh*-subject extractions without such an element. The variation as discussed in the previous sections is summarized in Table 1.

	<i>That</i> -trace effect	Adverb effect	Expletive insertion	Stylistic fronting
English	✓	✓	×	×
Dutch	×	✓	✓	×
German	✓	✓	×	×
Swedish	✓	✓	×	×
Danish	✓	?	✓	×
Norwegian	✓×	?	×	×
Icelandic	×	?	✓?	✓

Table 1. Summary of cross-Germanic variation in *wh*-subject extraction contexts

2.7 The empirical focus: English, Dutch and Icelandic

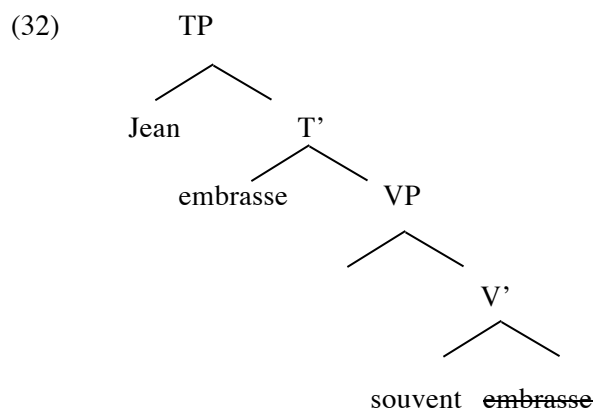
The empirical focus of this study will be on three Germanic languages: English, Dutch and Icelandic. The reason for investigating these three Germanic languages is twofold. First, these three languages combined display most of the cross-Germanic variation attested in *wh*-extraction contexts. English is one of the Germanic languages that show the *that*-trace effect. A new account of the *that*-trace effect in English could possibly be extended to the other Germanic languages that show this effect, that is, to Danish and Swedish. Since Dutch and Icelandic are the two Germanic languages that show an ‘anti’*that*-trace effect, it is of importance to include these two languages in the investigation. Also, both these languages show a different type of subject/object asymmetry, namely the insertion of an expletive pronoun or a SF item in *wh*-subject extraction sentences, which is ruled out with *wh*-object extraction. Investigating these phenomena is expected to help account for the different behavior of Dutch and Icelandic as compared to the Germanic languages showing the *that*-trace effect.

Second, when we consider 1) the movement and 2) morphology of the embedded finite verb in these three languages and 3) the exhibition of the *that*-trace effect, we see that all languages have something in common with one of the others to the exclusion of the third language. Let us consider these in more detail.

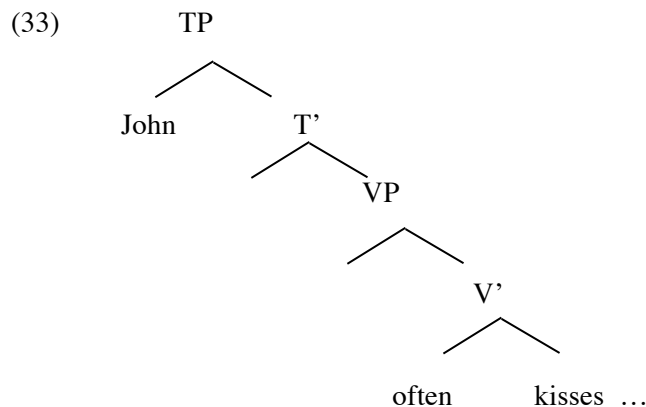
With respect to the movement of the embedded verb, we see that Dutch and Icelandic show the same pattern: they both show V-to-T movement in embedded clauses. V-to-T movement is movement of the finite verb from its base position to a higher position T. Whether a language shows V-to-T movement is often determined by the relative position of the verb to a certain group of elements, such as sentence adverbs, negation and floating quantifiers (Koenenman 2000). Consider for example the relative position of the finite verb to a sentence adverb in French (31a) on the one hand and English (31b) on the other.

- (31) a. Jean <*>souvent embrasse <*>souvent Marie *French*
 Jean often kisses often Marie
 ‘Jean often kisses Mary.’
- b. John <*>often kisses <*>often Mary *English*
[Koenenman 2000: 14]

When we assume that adverbs are left-adjoined to VP, these examples indicate that French has V-to-T movement, whereas English has not. This is illustrated⁴ for French in (32) and for English in (33).



⁴For ease of exposition, the syntactic trees in this section are simplified (vP layer is left out, VP layer is simplified et cetera).



We can rule out that V-to-C movement rather than V-to-T movement causes this difference, since both languages do not show verb second word order. This means that they do not have V-to-C movement. When we consider Icelandic embedded clauses, we see the same relative position of the finite verb to a sentence adverb as we saw for French above. This is shown in (34).

- (34) Ég veit ekki [afhverju kýrin <hefur> oft <*hefur> staðið i herberginu]. *Icelandic*
 I know not Q.why cow.the has often has stood in room.the
 ‘I don’t know why the cow has often stood in the room.’ [Koeneman 2000:15]

Note that the fact that the adverb *oft* cannot precede the finite verb in Icelandic is not caused by the verb second word order in this example. As Vikner (1995) states, subject-verb inversion is not possible in embedded clauses that are introduced by *afhverju* ‘why’ (35).

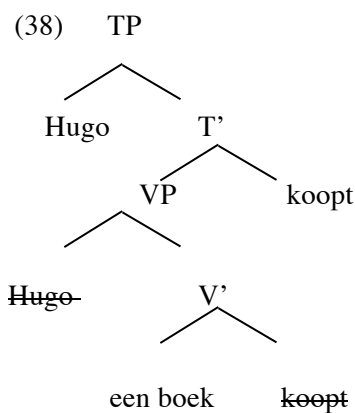
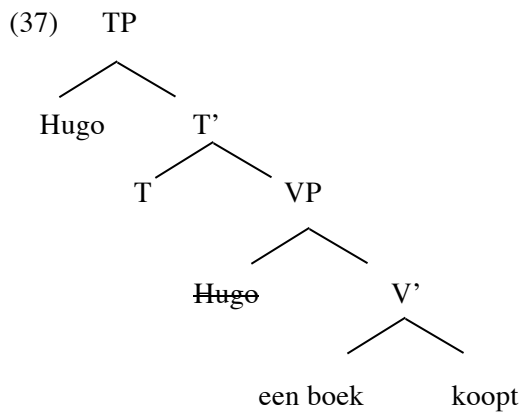
- (35) *Ég veit ekki af hverju i herberginu hefur kýrin staðið. *Icelandic*
 I know not Q.why in room.the has cow.the stood.
 ‘I don’t know why the cow has stood in the room.’ [Koeneman 2000: 14]

In (35) we see that when another element than the subject of the embedded clause, in this case *iherberginu* ‘in the room’, stands in preverbal position, the sentence is ungrammatical. In sentences in which verb second occurs, it does not matter what element precedes the verb, as long as it is just *one* element. Since in embedded clauses introduced by *afhverju* ‘why’ this option is ruled out, Vikner concludes that in these type of embedded clauses there is no verb second order, but rather show V-to-T movement. We can thus state that Icelandic shows V-to-T movement in embedded clauses.

Let us now consider Dutch. In Dutch, the finite verb appears in clause-final position in embedded clauses, illustrated in (36).

- (36) Stefan zegt[dat Hugo een boek koopt]. *Dutch*
 Stefan says that Hugo a book buys
 ‘Stefan says (that) Hugo buys a book.’

There are two different accounts for this embedded SOV word order in Dutch. In the first account (Travis 1984; Zwart 1993), it is assumed that the finite verb stays in its base position in V, and that the subject moves to the specifier of T. This is illustrated in (37). In the second account (Den Besten 1989; Bennis & Hoekstra 1989), the finite verb moves to T and is in head-final position, illustrated in (38).



In the current study, the second account is followed, meaning that it is assumed that in Dutch embedded clauses there is V-to-T movement.

Finally, let us consider English. As we saw above, English does not show V-to-T movement in main clauses. This is also the case in embedded clauses, as shown in (39).

(39) Stefan says [(that) Hugo often *buys* a book].

English

In (39) we see that, as was also the case in English main clauses (31b), the finite verb appears after the sentence adverb. There is thus no V-to-T movement in English embedded clauses. Taken together, Icelandic and Dutch pattern together in that they show V-to-T movement in embedded clauses, whereas English does not.

Let us now move on to the morphology of the finite verb in Icelandic, Dutch and English. In this case, Dutch and English pattern together with the exclusion of Icelandic. That is, Icelandic shows rich verb morphology whereas Dutch and English do not, or at least to a much lesser degree. Note here that ‘rich’ or ‘poor’ verb morphology cannot be defined as two distinct properties of languages. Rather, they are two sides on a continuum. Nevertheless, we can state that languages showing rich verb morphology are capable to signal information about the person and number properties of the subject, whereas languages with poor verbal morphology can do this only to a limited extent or not at all. In the literature, Icelandic is always seen as a language constituting rich verb morphology, since its verbal declension system shows many distinct forms. This can be seen in Table 2.

	Singular	Plural
1 st person	seg-i	seg-jum
2 nd person	seg-ir	seg-ið
3 rd person	seg-ir	seg-ja

Table 2. Icelandic declension system of the finite verb *segja* ‘to say’

Here, we can see that Icelandic has five distinct verb forms in its declension system, with only for 2nd and 3rd person singular one and the same form.

English on the other hand, shows only for the 3rd person singular a distinct form, as shown in Table 3. Therefore, it is usually said that English has poor verb morphology. This is also done in the current study.

	Singular	Plural
1 st person	say	say
2 nd person	say	say
3 rd person	say-s	say

Table 3. English declension system of the finite verb *to say*

Dutch shows three distinct forms in its verbal declension system, as can be seen in Table 4., and can thus be said to be somewhere in the middle of the continuum as discussed above. However, I still consider Dutch as constituting poor verbal morphology, albeit less poor than English. I consider this choice legitimate since all plural forms are the same form, meaning that the verb does not give any information about the person properties of the subject in the plural form. This is also the case for the 2nd and 3rd person.

	Singular	Plural
1 st person	zeg	zegg-en
2 nd person	zeg-t	zegg-en
3 rd person	zeg-t	zegg-en

Table 4. Dutch declension system of the finite verb *zeggen* ‘to say’

With respect to the morphology on the finite verb we can thus say that Dutch and English pattern together in showing poor verbal morphology to the exclusion of Icelandic, which shows rich verbal morphology.

Finally, as was already shown above, Icelandic and Dutch pattern together in not exhibiting the *that*-trace effect, whereas English does exhibit the *that*-trace effect. The patterns we thus see when we consider verb movement, morphology on the embedded finite verb and the exhibition of the *that*-trace effect given in Table 5.

	English	Dutch	Icelandic
V-to-T movement	×	✓	✓
Rich verbal morphology	×	×	✓
<i>That</i> -trace effect	✓	×	×

Table 5. Variation in English, Dutch and Icelandic: verbal movement/morphology and exhibition of the *that*-trace effect

Consider the possibility that verb movement and/or the inflection on this verb in some way play a role in the absence or presence of the complementizer (i.e. the exhibition of the *that*-trace effect). Investigating these three languages then provides us with a distribution of these properties that can give insight in their possible role. It is not unlikely that verb movement and verbal morphology play such a role, since English again patterns with Danish and Swedish with respect to their verbal behavior (no V-to-T movement, no verbal inflection; see for an overview Holmberg 2000) and thus also in exhibiting the *that*-trace effect. Thus, the comparison of the behavior of English, Dutch and Icelandic in *wh*-extraction contexts might shed light on crucial aspects of the variation attested in these languages, leading to a unified account for this variation that might not be reached when investigating a different combination of Germanic languages. However, previous studies on subject/object asymmetries in *wh*-extraction contexts in English, Icelandic and Dutch did not involve data collections of large groups of native speakers. Therefore, this was done in the current study in a consistent manner, in order to come to a unified account for the variation these languages show concerning subject/object asymmetries in *wh*-extraction contexts.

2.8 The research questions

The research questions of this thesis are:

- I. What is the exact variation of *wh*-subject/object asymmetries in English, Dutch and Icelandic?
- II. How can we account for the variation in subject/object asymmetries in *wh*-extraction contexts in English on the one hand and Dutch and Icelandic on the other? Can this account also be extended to other Germanic languages?
- III. How can we account for the optionality of the insertion of the expletive pronoun *er* in *wh*-subject extractions in Dutch and for the optionality of SF in *wh*-subject extractions in Icelandic?
- IV. How can we account for the definiteness effect of the embedded object on the insertion of *er* in Dutch? Do we find a similar effect in English and Icelandic, and if so, can this effect be explained in the same way for all three languages?

In order to provide convincing answers for these questions, questionnaires were developed to collect data for each language concerning *wh*-extraction sentences. In the next chapter, the methodology of the data collection will be discussed.

CHAPTER 3. METHODOLOGY

3.1 Introduction

In this chapter, I will discuss the design of the research questionnaires for Icelandic and English, and the design of the research questionnaire for Dutch. Then, I will present the information about the informants. Finally, I will discuss the task and procedure of how the data was gathered.

3.2 Questionnaire design

3.2.1 Icelandic and English

In order to gather judgments from native speakers of Icelandic and English, I developed a research questionnaire. This questionnaire consisted of a ‘core’ part that was the same for both languages. Since we wanted to investigate extra constructions in Icelandic (constructions with expletive insertion and Stylistic Fronting constructions), a language specific part was added for the Icelandic questionnaire.

3.2.1.1 The core of the questionnaire

The core part of the questionnaire consisted of embedded subject and object *wh*-extraction sentences with and without overt complementizers. The same test sentences with complementizer were also tested without the complementizer, in order to get a clear picture of the influence of the presence/absence of complementizer on the rating of the sentence, controlling for all other possible influences. This led to minimal pairs such as the examples (1a) and (1b), and (1c) and (1d)⁵.

- (1) a. Who does he think *that* is building a house?
 b. Who does he think is building a house?
 c. What does he think *that* she is drawing?
 d. What does he think she is drawing?

In the subject *wh*-extraction sentences, both bare *wh*-pronouns (*who*) and *wh*-phrases (*which man*) were used, distributed equally across the *wh*-subject test sentences. This was done to investigate whether the complexity of the *wh*-phrase influences the rating of a test sentence. Furthermore, we controlled for the following grammatical restrictions:

a) *Intransitive or transitive embedded finite verb*

To see whether the (in)transitivity of the embedded clause would influence the ratings of the test sentences, both test sentences with an intransitive finite verb (2a) in the embedded clause a transitive finite verb (2b) in the embedded clause were tested.

- Example sentences: (2) a. Who does he think is sleeping?
 b. Who does he think is writing a letter?

b) *Object type of the embedded clause*

⁵ All examples of test sentences that are given in this section are the English versions; note however that the same restrictions were used for the creation of the Icelandic test sentences.

Four types of objects of the embedded clause were tested, namely indefinite direct objects (3a), definite direct objects (3b) with unspecific reference, definite direct objects (3c) with specific reference and personal pronouns (3d).

Example sentences: (3) a. Who does he think is writing a letter?
 b. Who does he think is writing the letter?
 c. Who does he think is buying the bible?
 d. Who does he think hates him?

Controlling for object type, insight could be gained in the possible role of the direct object in how well or badly a test sentences are rated.

c) *The main clause finite verb and main clause subject*

In all test sentences, the main clause finite verb was the present tense of the verb ‘to think’. This was done because it is possible in all languages under investigation to extract out of an embedded clause when the main clause verb is ‘to think’, as opposed to extraction out of embedded clauses when the main clause verb is a factive verb such as ‘to regret’ or ‘to be surprised’. The main clause subject was in all test sentences the third person singular personal pronoun ‘he’. This personal pronoun was chosen instead of the second person singular personal pronoun ‘you’ because in Icelandic the complementizer *að* starts with a vowel, and the second personal pronoun singular *þú* in Icelandic ends with a vowel, which could possibly result in contraction of the personal pronoun and the complementizer. Since in Icelandic the third person singular pronoun ‘he’ *han* ends with a consonant, this possibility was ruled out.

d) *The presence and complexity of an adverb*

One part of the questionnaire consisted of test sentences in which a fronted adverb was present, in order to test the so-called adverb effect (Culicover 1993) as discussed in Chapter 1(?). The adverb effect was tested in both intransitive and transitive sentences, controlling for the definiteness of the object (indefinite versus definite objects). Both single adverbs (4a) and adverbial phrases (4b) were tested, equally distributed across the test sentences.

Example sentences: (4) a. Who does he think that *yesterday* has written a book?
 b. Who does he think that *for his own pleasure* has written a book?

We also used different types of simplex adverbs (manner: ‘quickly’, ‘easily’; temporal: ‘yesterday’, locative ‘over there’) and different adverbials (‘despite the cold’, ‘despite the crisis’, ‘in a few days’, ‘for his own pleasure’).

In addition, declarative sentences were tested, in which we also controlled for the points mentioned above (for example ‘I think he is sleeping’ versus ‘I think that he is sleeping’), except uniqueness of the object and presence of an adverb. This was done to be able to compare the ratings of presence/absence of the complementizer in *wh*-extraction contexts with those in declarative sentences.

3.2.1.2 The language specific section of the Icelandic questionnaire

As was already mentioned above, in the Icelandic questionnaire we added a second, language specific, section, to test expletive insertion and Stylistic Fronting constructions. For the test sentences with expletive insertion, we had the following categories of sentences:

a) *Active embedded clauses with an intransitive verb and wh-subject extraction*

Example sentence: (5) Hver heldur hann að það hafi sofið?
 Who think he that there has slept
 ‘Who does he think has slept?’

b) *Passive embedded clauses and wh-subject extraction*

Example sentence: (6) Hvað heldur hann að það sé skrifað?
 What think he that there is.PASS written
 ‘What does he think has been written?’

c) *Active embedded clauses with a transitive verb and wh-object extraction*

(7) Hvað heldur hann að það hann hafi smíðað?
 What think he that there he has built
 ‘What does he think that he has built?’

Both active and passive embedded clauses with *wh*-subject extraction and expletive insertion were tested to see whether expletive insertion would be rated better in one of those two conditions. In addition, *wh*-object extraction out of an active embedded clause and expletive insertion was tested, to check whether it is indeed the case that expletive insertion is only possible in *wh*-subject extraction contexts. All categories were tested with and without an overt complementizer, again to create minimal pairs and thus see the effect of the presence/absence of the complementizer in each type of test sentence.

To test Stylistic Fronting constructions, I used test sentences with transitive embedded verbs and *wh*-subject extraction. *Wh*-object extraction contexts were not tested, since SF requires a subject gap (see among others Franco (2007)). Two types of SF items were tested, namely past participles (8a) and negation (8b).

Example sentences: (8) a. Hver heldur hann að skrifað hafi bók?
 Who think he that written has book.INDEF
 ‘Who does he think has written a book?’

b. Hver heldur hann að ekki hafi skrifað bók?
 Who think he that not has written book.INDEF
 ‘Who does he think has not written a book?’

Two different types of SF items were tested in order to see whether both types of items would be rated equally well/badly. If one of the two types of SF items would turn out to be rated higher or lower than the other, this could reveal important insights in the nature of SF in general.

3.2.1.3. Format of the English and Icelandic questionnaire

The English questionnaire comprised 63 test sentences; the Icelandic questionnaire of 76 test sentences. After every block of six to eight test sentences a filler sentence was inserted. These filler sentences were all questions, but no subject/object *wh*-extraction questions (for example: ‘Why does he want to build a house?’). The entire list of test sentences can be found in the Dutch version of the questionnaire in Appendix A. The language specific English and Icelandic questionnaires are added in Appendix B and C.

3.2.2 Dutch

The Dutch data were gathered earlier in similar fashion by Klockmann & Wesseling (2015), as part of the VIDI project *The uniformity of linguistic variation: subject-predicate relations*. The design of their questionnaire was slightly different than the design of the English and Icelandic questionnaire. I will therefore briefly discuss their design.

The test sentences of this questionnaire consisted of both test sentences with only a matrix clause and test sentences with matrix and embedded clause. Only the test sentences with embedded clause are used in the data analysis for this thesis, I will therefore only describe the restrictions on the test sentences with an embedded clause. All test sentences had the overt complementizer *dat*. The effect of the absence of an overt complementizer was not tested, since complementizer omission in these contexts is not allowed in Dutch. Klockmann & Wesseling controlled for the following restrictions:

a) *Intransitive or transitive embedded verb*

Both test sentences with intransitive (9a) and transitive (9b) embedded verbs were tested, in order to see whether the (in)transitivity of the embedded clause would influence the ratings of the test sentences.

Example sentences: (9) a. *Wie denk je dat luistert?*

Who think you that listens

‘Who do you think is listening?’

b. *Wie denk je dat een taart bakt?*

Who think you that a cake bakes

‘Who do you think is baking a cake?’

b) *Object type of embedded clause*

Three types of objects of the embedded clause were tested, namely indirect objects (10a), direct objects (10b) and personal pronouns (10c).

Example sentences: (10) a. *Wie denk je dat een bos bloemen koopt?*

Who think you that a bunch.of flowers buys

‘Who do you think is buying a bunch of flowers?’

b. *Wie denk je dat de bos bloemen koopt?*

Who think you that the bunch.of flowers buys

‘Who do you think is buying the bunch of flowers?’

- c. *Wie denk je dat haar plaagt?*
 Who think you that her teases
 ‘Who do you think that is teasing her?’

Recall from Chapter 2 that the type of direct object seems to play a role in the occurrence of *er* in embedded clauses. Therefore, these three object types were tested to investigate this possible role.

c) *The main clause finite verb and subject*

In all test sentences, the main clause finite verb was the present tense of the verb ‘to think’ *denken*. The main clause subject was in all test sentences the weak form of the second person singular personal pronoun ‘you’ *je*.

d) *Presence of er*

All test sentences occurred once with and once without *er*, leading to minimal pairs such as the ones in (11a) and (11b).

- (11) a. *Wie denk je dat er een taart bakt?*
 Who think you that there a cake bakes
 ‘Who do you think is baking a cake?’
- b. *Wie denk je dat een taart bakt?*
 Who think you that a cake bakes
 ‘Who do you think is baking a cake?’

With these minimal pairs, the exact influence of *er* on the ratings of the test sentences could be investigated, while controlling for all other possible influences on the ratings.

e) *Presence of an adverb*

In this questionnaire, sentences with an adverb present were also tested, in order to see whether Dutch shows the adverb effect. However, only single adverbs (as opposed to adverbial phrases) were used. The adverbs that were tested were either temporal adverbs (‘tomorrow’ *morgen*) or frequency adverbs (‘often’ *vaak, geregeld*; ‘never’ *nooit*; ‘most of the times’ *meestal*). In addition, they also controlled for the transitivity of the verb, the definiteness of the object, the main clause finite verb and subject, and the presence of *er* (i.e. the restrictions (a)-(d)).

The Dutch questionnaire comprised of 42 test sentences⁶ and two fillers, which were *wh*-object extraction sentences. The complete questionnaire can be found in Appendix D.

3.3 Task and procedure

The questionnaires were presented in the form of a judgment-task, via the online platform SurveyMonkey©. The informants were asked to judge the test sentences using a 5-point Likert scale. On this scale, 1 meant ‘I would never say it (the sentence) like this’ and 5 meant ‘I would say it exactly like this’. The informants could also assign a 2, 3 or 4.

⁶ Note that the complete questionnaire comprised of 84 sentences, however only 42 of those had an embedded clause. For this research I only included those 42 sentences with embedded clauses.

The test sentences were presented in a randomized order. However, the English and Icelandic questionnaire started with the same declarative sentence ('I think he is sleeping.' for English; 'Ég held að hann sofi.' for Icelandic), that we expected to be rated with a '4/5' by all or at least most speakers. This was done to let all participants start with more or less the same standard for how to rate the rest of the sentences. The participants were asked to say each sentence out loud (except in the Dutch questionnaire) and immediately rate the sentence, to get the most spontaneous responses. The complete instruction text for the English and Icelandic questionnaires can be found in Appendix B; for the Dutch questionnaire in Appendix C.

At the end of the questionnaire, the participants were also asked to provide socio-economical information (i.e. highest level of education, current profession), their language background, whether they speak a dialect, and whether they have lived abroad (and if the answer was confirmative, to provide information about where and for how long they had lived abroad).

3.4 Informants

3.4.1 English informants

99 informants completed the English questionnaire. Of these 99 informants, two were excluded based on English not being their mother tongue. 68% of the informants are female and 32% are male. The mean age of the informants is 35 years old (*SD*: 13.4). The ages of the informants range from 19 to 72. The informants were recruited via social media, networks of English linguists and universities in English speaking countries.

3.4.2 Icelandic informants

142 informants completed the Icelandic questionnaire. One informant was excluded because his/her mother tongue was not Icelandic. 83% of the informants are female and 27% are male. The mean age of the informants is 44 years old (*SD*: 16.3). The ages of the informants range from 20 to 85. The informants were recruited via social media, networks of Icelandic linguists, universities in Iceland and via the network of the Icelandic Linguistic Society.

3.4.3 Dutch informants

427 informants completed the Dutch questionnaire. Six informants were excluded due to not having Dutch as their native language and two informants because they did not provide information about their native language. 63% of the informants are female and 37% are male. The mean age of the informants is 53 years old (*SD*: 15.8). The ages of the informants range from 19 to 88. The informants were recruited social media and 'De Taalpost', a newsletter from the society called 'Onze Taal', which has 22.000 subscribers.

3.5 Data preparation and statistical analyses

To prepare the collected data for statistical analyses, a number of categories were formed out of the test sentences. For example, one category 'All subject extractions with complementizer' consisted of all test sentences in which a *wh*-subject was extracted and in which there was an overt complementizer, whereas all test sentences with this type of extraction but without an overt complementizer constituted the category 'All subject extractions without complementizer' et cetera. Means and standard deviations were calculated for all categories. When two category means were to be compared, Univariate ANOVA's were carried out. An alpha level of 0.05 was used as the threshold for significance when comparing means of categories. When more than two categories were compared, for example the four object types, a Bonferroni post-hoc correction was applied. An effect size *r* was calculated to see how substantial the effect was of the type of sentence *category* on the

rating of the sentences. The benchmarks of the effect size were taken from Field (2009), with a value of .01 for a small effect, a value of .06 for a medium effect and a value of .14 for a large effect.

CHAPTER 4. RESULTS

4.1 Introduction

In this chapter I will present the results of the questionnaires of the three languages investigated here. I will first present the English results, then the Icelandic results and finally the Dutch results. For the English and Icelandic results, the following variables will be considered: 1) Overtness of the complementizer; 2) Transitivity; 3) Object type; 4) Presence of an adverb. For Icelandic, two extra variables are also discussed, namely 1) Expletive insertion; 2) Stylistic Fronting. For the Dutch results, the following variables will be discussed: 1) Presence of *er*; 2) Transitivity; 3) Object type; 4) Presence of an adverb. I will also divide the Dutch informants into different groups according to their preference for the presence/absence of *er*. At the end of each language specific results section, the results will be briefly summarized. Finally, an overview summarizing the results of this study is presented.

4.2 English results

4.2.1 Overtness of the complementizer

Let us start by comparing all test sentences with and without overt complementizer (example sentence (1) and (2) respectively).

- (1) Who does he think *that* is sleeping? *English*
 (2) Who does he think is sleeping?

Recall that the task was to rate using a 5-point Likert scale, with 1 ('I would never say it like this') being the minimum and 5 ('I will always say it like this') the maximum.

	Overt complementizer	No overt complementizer
Mean	2.03	4.01
SD	1.3	1.3

Table 1. Rating of test sentences with and without complementizer of all test sentences

We see that the test sentences without an overt complementizer are generally rated much higher than the test sentences with an overt complementizer. The means and standard deviations can be found in Table 1.

When we consider smaller categories, namely *wh*-subject extraction sentences on the one hand and *wh*-object extraction sentences on the other, we find that not only subject extractions, but also object extractions without an overt complementizer (example sentence (3a)) are rated higher than the same sentences with an overt complementizer (example sentence (3b)). Also, we see that *wh*-object extraction test sentences are in general rated higher than *wh*-subject extraction test sentences. This is shown in Table 2.

- (3a) What does he think she is drawing? *English*
 (3b) What does he think *that* she is drawing?

	Subject extraction		Object extraction	
	Overt comp	No overt comp	Overt comp	No overt comp
Mean	1.97	4.09	3.43	4.40
SD	1.1	1.1	1.3	0.9

Table 2. Ratings of test sentences with and without complementizer in subject vs. object extraction

Univariate ANOVA tests were carried out to test for significance between the ratings of the test sentences with and without an overt complementizer. To test the difference between *wh*-subject extraction sentences with and without overt complementizer, Rating was used as dependent variable and Category (Category 1 = All *wh*-subject extraction test sentences with complementizer; Category 2 = All *wh*-subject extraction test sentences without complementizer) as factor. Levene's test indicated that the assumption of homogeneity of variance had been violated, p -value = .001. Therefore, the F -ratio reported here is the Brown-Forsythe F^7 . The results show that there is a statistically significant difference between the *wh*-subject extraction test sentences with complementizer and the *wh*-subject extraction test sentences without complementizer, $F(1, 2180) = 20002.05$, p -value = .000, $r = .32$. The effect size indicates that there is a substantial effect of category on the rating of the test sentences.

In the same manner the difference between *wh*-object extraction sentences with and without overt complementizer was tested for statistical significance. Rating was used as dependent variable and Category (Category 3 = All *wh*-object extraction test sentences with complementizer; Category 4 = All *wh*-object extraction test sentences without complementizer) as factor. Levene's test showed that the assumption of homogeneity of variance had been violated, p -value = .000. Thus, the Brown-Forsythe F -ratio is reported. The results indicate that there is a statistically significant difference between the *wh*-object extraction test sentences with complementizer and the *wh*-object extraction test sentences without complementizer, $F(1, 664) = 134.86$, p -value = .000, $r = .12$. The effect of category on the rating of the test sentences is thus a medium effect.

4.2.2 Transitivity

When we consider the variable 'transitivity', we see that the intransitive sentences without complementizer (example sentence (4a)) are rated slightly lower than transitive sentences without complementizer (example sentence (4b)). However, no such difference can be found between the intransitives and transitives with complementizer (example sentences (5a) and (5b)). This is shown in Table 3.

- | | |
|--|----------------|
| (4a) Who does he think is sleeping? | <i>English</i> |
| (4b) Who does he think is writing a letter? | |
| (5a) Who does he think that is sleeping? | <i>English</i> |
| (5b) Who does he think that is writing a letter? | |

	Intransitives		Transitives	
	Overt comp	No overt comp	Overt comp	No overt comp
Mean	1.94	3.96	1.95	4.15
SD	1.0	1.2	1.1	1.1

Table 3. Ratings of test sentences with and without complementizer in intransitives versus transitives

⁷ The Brown-Forsythe F -ratio is a robust F -ratio even when the assumption of homogeneity of variances is violated (Field 2009: 380)

To see whether there is a significant difference between the intransitive test sentences without a complementizer and the transitive test sentences without a complementizer, a Univariate ANOVA was carried out, with Rating as dependent variable and Category (Category 5 = Intransitive test sentences without complementizer; Category 6 = Transitive test sentences without complementizer) as factor. Levene's test showed that the assumption of homogeneity of variance was met, p -value = 0.128. The results of the ANOVA showed that there is indeed a significant difference between the intransitive and transitive test sentences without complementizer, $F = 6.020$, p -value = 0.01, $r = .02$. The effect size is thus small. As expected from the means of the ratings, no significant difference was found between the intransitive test sentences with complementizer and the transitive test sentences with complementizer, $F = 0.04$, p -value = 0.84.

4.2.3 Object type

Let us now consider the variable 'object type'. Recall that there were four different object types tested, indefinite objects ('a letter'), unspecific definite objects ('the letter'), specific definite objects ('the bible') and pronouns ('him'). Comparing all object types in the transitive test sentences with and without complementizer, we see little to no effect of object type on the ratings of the transitive test sentences with complementizer. We do find effects of object type on the ratings of the transitive test sentences without complementizer, however. This is shown in Table 4.

	Transitives with complementizer		Transitives without complementizer	
	Mean	SD	Mean	SD
Indefinite	1.92	1.1	3.98	1.2
Definite				
<i>Unspecific</i>	2.04	1.1	4.12	1.1
<i>Specific</i>	1.90	1.1	3.92	1.3
Pronoun	2.02	1.1	4.39	1.0

Table 4. Ratings of transitives with and without complementizer; organized by object type

What we see here is that in the transitive test sentences without complementizer, the sentences with an unspecific definite object are rated the lowest, the sentences with a pronoun as a direct object the highest, and the sentences with an indefinite object and unspecific definite object in between.

In order to test whether these differences between transitive test sentences with different object types are significant, a Univariate ANOVA was carried out, with Rating as dependent variable, and Object type as fixed factor. A Bonferroni correction was applied. The ANOVA revealed significant differences between the test sentences with an indefinite object and a pronoun as direct object (p -value = 0.01), and between the test sentences with a specific definite object and a pronoun as direct object (p -value = 0.002).

4.2.4 Presence of an adverb

Considering the test sentences with an adverb intervening between the overt complementizer and the rest of the embedded clause (example sentences (6a) and (6b)), we find that these test sentences were rated rather badly, as is shown in Table 5. This is both the case for single adverbs (e.g. 'yesterday') and adverbial phrases (e.g. 'for his own pleasure').

(6a) Who does he think that yesterday has read a book?

English

(6b) Who does he think that for his own pleasure has written a book?

	Presence of an adverb	
	Single adverb	Adverbial phrase
Mean	1.32	1.86
SD	0.6	1.2

Table 5. Ratings of test sentences with fronted adverbs of both single adverbs and adverbial phrases

These results are thus no support for the existence of an adverb effect (in English).

4.2.5 Summary of English results

The results of the English questionnaire showed that in general the test sentences without an overt complementizer are rated much higher than the same test sentences with an overt complementizer. We saw that this is not only the case for *wh*-subject extractions, but also for *wh*-object extractions. This finding is rather surprising, since in the literature normally only the need for a null complementizer in *wh*-subject extractions in English is discussed. Also, we saw that *wh*-object extractions are in general rated higher than *wh*-subject extractions.

We found that intransitive sentences without complementizer are rated lower than transitive sentences without complementizer, and this difference was found to be significant. No such difference was found between intransitives and transitives with a complementizer. This is not surprising, since an overt complementizer in English is rather bad in general.

We found that the type of object affects the ratings of the test sentences without a complementizer, with a significant difference in ratings between test sentences with an indefinite object and a pronoun as direct object, and between test sentences with a specific definite object and a pronoun as direct object. It was found that in the transitive test sentences without complementizer, the sentences with an indefinite object are rated the lowest, the sentences with a pronoun as a direct object the highest, and the sentences with a definite object in between.

We also found that the test sentences with a fronted adverb intervening between the overt complementizer and the rest of the embedded clause were rated rather low. In other words, no evidence was found for an adverb effect in English with this research questionnaire.

4.3 Icelandic results

4.3.1 Overttness of the complementizer

Considering the overttness of the complementizer, we see that all test sentences with an overt complementizer (example sentence (7a)) are rated much better than these sentences without an overt complementizer (example sentence (7b)). This is illustrated in Table 6.

- (7) a. Hver heldur hann að sofi? *Icelandic*
 Who think he that sleeps
 ‘Who does he think is sleeping?’
- b. Hver heldur hann sofi? *Icelandic*
 Who think he sleeps
 ‘Who does he think is sleeping?’

	Overt complementizer	No overt complementizer
Mean	3.90	2.10
SD	1.5	1.4

Table 6. Rating of test sentences with and without complementizer in all test sentences

When we divide these two large groups of test sentences into *wh*-subject extraction test sentences with and without complementizer and *wh*-object extraction test sentences with and without complementizer, we find that *wh*-object extractions (example sentence (8a)) are generally rated slightly better than *wh*-subject extractions (example sentence (8b)), shown in Table 7.

- (8) a. Hvað heldur hann (að) hún teikni? Icelandic
 What think he (that) she draws
 ‘What does he think that she is drawing?’
- b. Hver heldur hann (að) hafi sofið? Icelandic
 Who think he (that) has slept
 ‘Who does he think has slept?’

	Subject extraction		Object extraction	
	Overt comp	No overt comp	Overt comp	No overt comp
Mean	3.83	1.88	4.33	2.30
SD	1.5	1.2	1.2	1.6

Table 7. Ratings of test sentences with and without comp in subject versus object extraction

To test whether the difference between *wh*-subject extraction test sentences with and without overt complementizer, is statistically significant, a Univariate ANOVA was carried out. Rating was used as dependent variable and Category (Category 1 = All *wh*-subject extraction test sentences with complementizer; Category 2 = All *wh*-subject extraction test sentences without complementizer) as factor. Levene’s test showed that the assumption of homogeneity of variance had been violated, p -value = .000. The Brown-Forsythe F -ratio is thus reported here. The ANOVA showed that there is a statistically significant difference between the *wh*-subject extraction test sentences with complementizer and the *wh*-subject extraction test sentences without complementizer, $F(1, 3030) = 1669.84$, p -value = .000, $r = .29$. The effect size thus indicates a substantial effect.

Similarly, the difference between *wh*-object extraction test sentences with and without overt complementizer was tested for statistical significance, with Rating as dependent variable and Category (Category 3 = All *wh*-object extraction test sentences with complementizer; Category 4 = All *wh*-object extraction test sentences without complementizer) as factor. Levene’s test indicated that the assumption of homogeneity of variance was not met, p -value .000. Therefore the F -ratio that is reported is the Brown-Forsythe F . The results showed that there is a statistically significant difference between *wh*-object extraction test sentences with complementizer and those without complementizer, $F(1, 670) = 489.68$, p -value = .000, $r = .28$. The effect of category on rating of the test sentences is thus substantial.

4.3.2 Transitivity

When we investigate the variable ‘transitivity’, we find that in general the intransitive test sentences (example sentences (9a) and (10a)) are rated a bit lower than the transitive test sentences (example sentences (9b) and (10b)), albeit the difference between those sentences with complementizer (10) being greater than between those sentences without complementizer (9). This is shown in Table 8.

- (9) a. Hver heldur hann sofi? *Icelandic*
 Who think he sleeps
 ‘Who does he think is sleeping?’
- b. Hver heldur hann skrifi bréf?
 Who think he writes letter.INDEF
 ‘Who does he think is writing a letter?’
- (10) a. Hver heldur hann að sofi? *Icelandic*
 Who think he that sleeps
 ‘Who does he think is sleeping?’
- b. Hver heldur hann að skrifi bréf?
 Who think he that writes letter.INDEF
 ‘Who does he think is writing a letter?’

	Intransitives		Transitives	
	Overt comp	No overt comp	Overt comp	No overt comp
Mean	3.30	1.87	4.13	1.95
SD	1.6	1.2	1.3	1.3

Table 8. Ratings of test sentences with and without complementizer of intransitives versus transitives

In order to find out whether there is a statistically significant difference between the intransitive test sentences with complementizer and the transitive test sentences with complementizer, a Univariate ANOVA was executed, with Rating as dependent variable and Category (Category 5 = All intransitive test sentences with complementizer; Category 6 = All transitive test sentences with complementizer) as factor. Since Levene’s test, p -value = .000, indicated that the assumption of homogeneity of variance was violated, the Brown-Forsythe F -ratio is reported. The results of the ANOVA showed that there is a statistically significant difference between intransitive test sentences with complementizer and the transitive test sentences with complementizer, $F(1, 826) = 100.36$, p -value = .000, $r = .09$. The effect size thus indicates a medium effect.

The same was tested for the difference between the intransitive test sentences without complementizer and the transitive test sentences without complementizer, Rating being dependent variable and Category (Category 7 = All intransitive test sentences without complementizer; Category 8 = All transitive test sentences without complementizer) as factor. Levene’s test indicated that the assumption of homogeneity of variance was met, p -value = .678. No significant difference was found, $F(1, 1541) = 1.52$, p -value = .217.

4.3.3 Object type

Let us move on to the variable ‘object type’ Recall that four different object types were tested: indefinite objects (‘a book’ *bréf*), unspecific definite objects (‘the book’ *bréfið*), specific definite

objects ('the bible' *bíblúna*) and pronouns ('him' *honum*). Comparing all object types in the transitive test sentences with and without complementizer, we see little to no effect of object type on the ratings of the transitive test sentences with complementizer, nor on the ratings of the transitive test sentences without complementizer. This is shown in Table 9.

	Transitives with complementizer		Transtives without complementizer	
	Mean	SD	Mean	SD
Indefinite	4.15	1.3	1.99	1.3
Definite				
<i>Unspecific</i>	4.15	1.3	1.92	1.3
<i>Specific</i>	4.11	1.3	1.97	1.2
Pronoun	3.98	1.3	1.91	1.2

Table 9. Ratings of transitives with and without complementizer; organized by object type

In order to test whether these very small differences between transitive test sentences with different object types are significant, a Univariate ANOVA was carried out, with Rating as dependent variable, and Object type as fixed factor. A Bonferroni correction was applied. The ANOVA revealed no significant differences.

4.3.4 Presence of an adverb

As for the test sentences with a fronted adverb (example sentences (11a) and (11b)), we find that these test sentences get very low ratings, as can be seen in Table 10. Both test sentences with single adverbs (e.g. 'yesterday' *í gær*) and adverbial phrases (e.g. 'for his own pleasure') are rated very badly.

- (11) a. Hver heldur hann að í gær hafi lesið bók? *Icelandic*
 Who think he that yesterday has read book.INDEF
 'Who does he think that yesterday has read a book?'
- b. Hver heldur hann að gamni sínu hafi skrifað bók? *Icelandic*
 Who think he that pleasure his has written book.INDEF
 'Who does he think that for his own pleasure has written a book?'

	Fronted adverb	
	Single adverb	Adverbial phrase
Mean	1.71	1.77
SD	1.2	1.2

Table 10. Ratings of test sentences with fronted adverbs of both single adverbs and adverbial phrases

This is no surprising finding, since Icelandic has strict V2 order in embedded clauses, and thus does not allow for additional material to intervene between the complementizer and the finite verb.

4.3.5 Expletive insertion

When we consider the test sentences with expletive insertion (example sentence (12)), we find that those sentences are rated extremely badly, irrespective of the presence of an overt complementizer. This can be seen in Table 11. We also see that the test sentences with passive voice are slightly less bad than the test sentences with active voice.

- (12) Hver heldur hann að það hafi sofið? *Icelandic*
 Who think he that there have slept
 ‘Who does he think has been sleeping?’

Expletive insertion				
Overt complementizer			Covert complementizer	
	Active voice	passive voice	Active voice	passive voice
Mean	1.11	1.43	1.08	1.18
SD	0.5	1.05	0.5	0.6

Table 11. Ratings of test sentences with expletive insertion with and without complementizer; active and passive voice

These results thus do not support the idea of expletive insertion winning ground in (young speakers of) Icelandic. Since all categories of test sentences with expletive insertion showed a Mean below 2, we can state that irrespective of the overtiness of the complementizer or the active/passive voice of the embedded finite verb, sentences with expletive insertion are rated as ungrammatical. Therefore, no tests for significant difference were carried out.

4.3.6 Stylistic Fronting

Finally, we consider the test sentences with Stylistic Fronting (example sentence (13)). The results show that all test sentences with Stylistic Fronting are rated very badly⁸, shown in Table 12. The test sentences with the fronted negation are slightly less bad than the ones with a fronted past participle.

- (13) Hver heldur hann að smíðað hafi hús? *Icelandic*
 Who think he that build has house.INDEF
 ‘Who does he think has built a house?’

Stylistic Fronting		
	Negation fronted	Past participle fronted
Mean	1.84	1.53
SD	1.2	1.0

Table 13. Ratings of test sentences with SF; negation fronted and past participle fronted

These results thus indicate that for these speakers of Icelandic, Stylistic Fronting is not preferred at all in *wh*-subject extractions. Instead, they suggest that Stylistic Fronting is no longer an option in these kinds of extraction contexts. Since the means of the ratings for all categories with Stylistic Fronting were below 2, we can state that irrespective the stylistically fronted item, the test sentences are rated as ungrammatical. Thus no tests for significance of the difference were conducted.

⁸ It is possible that these extremely low ratings are (partly) due to the fact that the participants were asked to judge the items with statements that test language use rather than acceptability of the structure in the language system. Recall that the participants were asked to rate with ‘1’ being ‘I would never say it like this’ and ‘5’ being ‘I would say it exactly like this’. However, if we had used statements like ‘This is not acceptable at all in my language’ for ‘1’ and ‘This is perfectly acceptable in my language’ for ‘5’ there would possibly have been a lot more normative pressure involved in the ratings. Since there is a very high degree of normative pressure on Icelandic, this way of rating would have given very skewed results. This is in line with the comment of my Icelandic translator that the use of SF is promoted in language lessons in schools, and that (old) Icelandic speakers are very conservative about their language.

4.3.7 Summary of Icelandic results

The Icelandic results showed that in general the test sentences with an overt complementizer are rated much higher than the test sentences without an overt complementizer. We saw the same pattern when we split these two big categories into *wh*-subject extraction test sentences and *wh*-object extraction test sentences. Also, it was found that *wh*-object extraction test sentences scored generally a bit higher than *wh*-subject extraction test sentences.

We saw that intransitive sentences were generally rated lower than transitive sentences, and that there was a statistically significant difference between the intransitive test sentences with complementizer and the transitive test sentences with complementizer. No significant effect was found between the intransitive test sentences without complementizer and the transitive test sentences without complementizer. This is not surprising, since the data in general show that an overt complementizer is needed to introduce the embedded clause.

No effect of object type on the rating of the transitive sentences with and without complementizer was found. We also saw that test sentences with a fronted adverb were rated very badly. This did not come as a surprise, since the strict V2 word order in the embedded clause in Icelandic would prohibit any intervening material between the overt complementizer and the finite verb. We also found that the test sentences with expletive insertion were rated very badly. These data are thus no support for the idea that expletive insertion might be winning ground in (younger speakers of) Icelandic.

We also found that the test sentences with Stylistic Fronting were in general rated very low. The fact that the sentences with SF are rated so low is surprising for two reasons. First, in the literature it is stated that SF is optional, but the findings of the current study suggest that the option of SF is in any case an extremely less used option compared to the same test sentences without SF. Second, these findings imply that in Icelandic *wh*-subjects can be extracted across an overt complementizer without there being any overt element needed to intervene between the complementizer and Spec,TP. This is unexpected, because in all other Germanic languages we see the need for either the deletion of the complementizer with *wh*-subject extraction or the intervention of an overt element in Spec,TP.

4.4 Dutch results

4.4.1 Presence of *er*

For Dutch, we start with comparing the test sentences in which *er* (example sentence (13a)) is present and the same test sentences without *er* (example sentence (13b)). We see that the test sentences with *er* are rated slightly lower than the test sentences without *er*. This is shown in Table 14.

- (13) a. Wie denk je dat er een taart bakt? *Dutch*
 Who think you that there a cake bakes
 ‘Who do you think is baking a cake?’
- b. Wie denk je dat een taart bakt?
 Who think you that a cake bakes
 ‘Who do you think is baking a cake?’

	<i>Er</i> present	<i>Er</i> not present
Mean	2.96	3.21
SD	1.7	1.6

Table 14. Rating of test sentences in which *er* is present versus not present

At first sight this finding might seem surprising. Recall from Chapter 2 however, that there are certain restrictions on the presence of *er*. Taking all test sentences with *er* and all without *er* together might obscure the exact picture. It is therefore important to make smaller categories of test sentences, which will be done in the following subsections. In the last subsection of the Dutch data, the ratings of sentences with and without *er* are also organized so as to create different groups of informants.

4.4.2 Transitivity

Let us first consider the variable transitivity. What we see is that the intransitives with *er* (example sentence (14a)) are rated much higher than the intransitives without *er* (example sentence (14b)). In the transitives we see the opposite, albeit to a lesser extent. That is, transitives with *er* (example sentence (15a)) are rated slightly lower than transitives without *er* (example sentence (15b)). The results are displayed in Table 15.

- (14) a. Wie denk je dat er luistert? *Dutch*
 Who think you that there listens
 ‘Who do you think is listening?’
- b. Wie denk je dat luistert?
 Who think you that listens
 ‘Who do you think is listening?’
- (15) a. Wie denk je dat er een taart bakt? *Dutch*
 Who think you that there a cake bakes
 ‘Who do you think is baking a cake?’
- b. Wie denk je dat een taart bakt?
 Who think you that a cake bakes
 ‘Who do you think is baking a cake?’

	Intransitives		Transitives	
	<i>Er</i> present	<i>Er</i> not present	<i>Er</i> present	<i>Er</i> not present
Mean	3.86	2.95	2.91	3.26
SD	1.5	1.6	1.7	1.6

Table 15. Ratings of test sentences with and without *er* in intransitives versus transitives

To see whether there is a significant difference between the intransitive test sentences with *er* and the intransitive sentences without *er*, a Univariate ANOVA was conducted, with Rating as dependent variable and Category (Category 1 = Intransitive test sentences with *er*; Category 2 = Intransitive test sentences without *er*) as factor. Levene’s test indicated that the assumption of homogeneity of variance was violated, p -value = .000. Therefore, the F-ratio that is reported here is the Brown-Forsythe F . The ANOVA showed that there is a statistically significant difference between the intransitive test sentences with *er* and without *er*, $F(1, 4958) = 435.54$, p -value = .000, $r = .28$. The effect size thus reveals a substantial effect of category on the ratings of the test sentences.

We also want to know whether there is a significant difference between the transitive test sentences with *er* and the transitive test sentences without *er*. Again, a Univariate ANOVA was carried out, with Rating as dependent variable and Category (Category 3 = Transitive test sentences with *er*; Category 4 = Transitive test sentences without *er*) as factor. As the Levene’s test showed that

the assumption of homogeneity of variance was not met, p -value = .000, again the F -ratio of Brown-Forsythe is mentioned. The results revealed a statistically significant difference between the transitive test sentences with *er* and the transitive test sentences without *er*, $F(1, 940) = 257.93$, p -value = .000, $r = .05$. The effect is thus a small effect.

4.4.3 Object type

We will now consider the variable object type. Recall that in the Dutch questionnaire three different object types were tested, namely indefinite objects ('a cake' *een taart*), definite objects ('the cake' *de taart*) and pronouns ('him' *hem*). The data show that for the transitive test sentences with *er*, the sentences with an indefinite object are rated the highest, with a pronoun as direct object are rated the lowest, and the sentences with a definite object are in between. For the transitive test sentences without *er* the test sentences with a definite object and with a pronoun as direct object, are rated equally, while the test sentences with an indefinite object are rated much lower. The results are shown in Table 16.

	Transitives with <i>er</i>		Transitives without <i>er</i>	
	Mean	SD	Mean	SD
Indefinite	3.53	1.6	2.96	1.6
Definite	2.80	1.6	3.46	1.6
Pronoun	1.87	1.3	3.44	1.62

Table 16. Ratings of transitives with and without *er*; organized by object type

In order to test whether these differences between transitive test sentences with different object types are significant, a Univariate ANOVA was carried out, with Rating as dependent variable, and Object type as fixed factor. A Bonferroni correction was made. The results showed statistically significant differences between all object types (p -value < .001 in all cases).

4.4.4 Presence of an adverb

Finally, we consider the test sentences with an adverb present. Recall from Chapter 2 that we would expect that the presence of an adverb might decrease the need for *er*. Recall also, that in the Dutch questionnaire only simple adverbs were tested, and no adverbial (as was done in the English and Icelandic questionnaire). Let us first look at the intransitive test sentences. There are four groups of test sentences, namely intransitives with *er* and with an adverb (example sentence (16a)), intransitives without *er* and with an adverb (16b), intransitives with *er* and without an adverb (16c) and intransitives without *er* and without an adverb (16d). The data indeed show that the intransitive test sentences without *er* and without an adverb are rated slightly lower than the intransitive test sentences without *er* and with an adverb. However, the difference is very small. Nevertheless, we want to know whether there is a significant difference between the two categories. A Univariate ANOVA was carried out with Rating as dependent variable, and Category (Category 5 = Intransitive test sentences without *er* and with an adverb; Category 6 = Intransitive test sentences without *er* and without an adverb). Levene's test indicated that the assumption of homogeneity of variance was met, p -value = .835. The test revealed a significant difference between the intransitive test sentences without *er* and with an adverb versus the intransitive test sentences without *er* and without an adverb, $F(1, 2481) = 18.363$, p -value = .000, $r = .09$. The effect size shows a medium effect.

Note however, that the four different types were not minimal pairs, as you can see in the example sentences (16a)-(16d). It is thus not impossible that the finite verb of the embedded clause has influenced the ratings. The data are shown in Table 17.

- (16) a. Wie denk je dat er morgen komt *Dutch*
 Who think you that there tomorrow comes
 ‘Who do you think will come tomorrow?’
- b. Wie denk je dat morgen komt
 Who think you that tomorrow comes
 ‘Who do you think will come tomorrow?’
- c. Wie denk je dat er luistert?
 Who think you that there listens
 ‘Who do you think is listening?’
- d. Wie denk je dat luistert?
 Who think you that there listens
 ‘Who do you think is listening?’

	Intransitive			
	Adverb present		No adverb present	
	<i>Er</i> present	<i>Er</i> not present	<i>Er</i> present	<i>Er</i> not present
Mean	3.87	3.08	3.85	2.81
SD	1.5	1.6	1.5	1.6

Table 17. Ratings of intransitive test sentences with and without *er* and fronted adverbs

We also want to see whether the presence of an adverb affects the transitive test sentences with and without *er*. Again, there are four groups of test sentences, namely transitives with *er* and with an adverb (example sentence (17a)), transitives without *er* and with an adverb (17b), transitives with *er* and without an adverb (17c) and transitives without *er* and without an adverb (17d). Similar as with the intransitive cases, these four types do not form minimal pairs. We thus again have to take into account the possibility of the finite verb of the embedded clause influencing the rating. Again, we would expect that the presence of an adverb would have a positive effect in the test sentences without *er*. The data are not in accordance with this expectation, that is, the test sentences without *er* and with an adverb are rated equally as the test sentences without *er* and without an adverb. This can be seen in Table 18.

- (17) a. Wie denk je dat er geregeld een wedstrijd verliest? *Dutch*
 Who think you that there often a match loses
 ‘Who do you think loses often a match?’
- b. Wie denk je dat geregeld een wedstrijd verliest?
 Who think you that often a match loses
 ‘Who do you think often loses a match?’
- c. Wie denk je dat er een taart bakt?
 Who think you that there a cake bakes

‘Who do you think is baking a cake?’

d. Wie denk je dat een taart bakt?

Who think you that a cake bakes

‘Who do you think is baking a cake?’

	Transitive			
	Adverb present		No adverb present	
	<i>Er</i> present	<i>Er</i> not present	<i>Er</i> present	<i>Er</i> not present
Mean	3.39	3.15	2.59	3.32
SD	1.6	1.6	1.6	1.6

Table 18. Ratings of intransitive test sentences with and without *er* and fronted adverbs

The Dutch transitive test sentences do thus not show an adverb effect.

4.4.5 Preference for the presence/absence of *er*

Recall also from Chapter 2 that there seem to be two types of Dutch speakers, one that needs the presence of *er* in *wh*-subject extraction contexts, and the other that does not. It is thus also likely that the Means for the test sentences with *er* and without *er* in Table 14 are a representation of these two types of Dutch speakers. For example, when we split up the ratings of intransitive test sentences into groups of informants showing a preference for the presence of *er*, not showing a preference for the presence of *er* and showing a preference for the absence of *er*, we get the results given in Table 19.

Number of informants	
Preference for <i>er</i> present	207
No preference for <i>er</i> present	106
Preference for <i>er</i> absent	15
Unknown	27
Other	64
Total	419⁹

Table 19. Informants divided into groups according to preference for the absence/presence of *er*¹⁰

The informants were divided into groups based on the following criteria. Both categories of test sentences, intransitive test sentences with *er* (= Category 1) and intransitive test sentences without *er* (= Category 2) consisted of three test sentences. Only intransitive test sentences without a fronted adverb were considered. If an informant rated two out of three sentences of category 1 higher than two out of three test sentences of category 2, the informant was assigned to the group *preference for er present*. If an informant rated two out of three sentences in category 1 the same as two out of three test sentences of category 2, he/she was assigned to the group *no preference for er present*. If an informant rated two out of three sentences in category 1 lower than two out of three from category 2, he/she was assigned to the group *preference for er absent*. Informants were assigned to the group *unknown* when one or more ratings were missing data. Informants were assigned to the group *other* for all other

⁹ These calculations were made before two extra participants were excluded from the data. Therefore a total number of 419 is reported here instead of 417. Since it is not a case of simply deleting the two extra excluded informants from the data-file, but rather a very time-consuming process of recalculations, I leave the calculations as presented in this Table.

¹⁰ Note that this division is based on the ratings of informants on intransitive test sentences, since the results show that intransitive sentences rely to a higher extent on the presence of *er* (see subsection 4.4.2).

scenarios, that is, when the ratings within and between category 1 and 2 did not conform to any of the criteria for assigning informants into one of the other groups.

What we see in Table 19 is that 207 out of 419 (49 percent) informants show a preference for the presence of *er* in intransitive test sentences. 15 informants (3 percent) show a preference for *er*, that is, 15 informants do not need *er* and even show a dispreference for *er*. 106 informants (25 percent) show no preference for *er*, although they do not show a preference for *er* being absent either. We can thus say that they are indifferent to the presence or absence of *er*. In other words, we can take the 15 informants from the dispreference group together with the 106 informants that do not show a preference for *er* into one group (28 percent) that does not need *er* to be present. The group that did not show any pattern consisted of 64 informants (15 percent), and 27 informants (6 percent) could not be assigned to one of the groups as some of their data was missing. Taken together, we see that the largest group of informants (49 percent) need *er* to be present in the intransitive test sentences, an also substantial group of informants (28 percent) do not need *er* to be present (some of which even prefer *er* to be absent) and finally a smaller group (5 percent) do not show a clear preference or dispreference for the presence of *er*.

4.4.6 Summary of Dutch results

For Dutch, it was found that the intransitive test sentences with *er* are rated much higher than the intransitive test sentences without *er*. This was the other way around for the transitive sentences. In both cases a statistically significant difference was found.

Also, we saw that there was an effect of object type on the rating of the test sentences. There were statistically significant differences between all three object types. In the transitive sentences with *er*, it was found that indefinite objects were rated the highest, pronouns as direct object lowest, and definite objects in between those two. For the transitive test sentences without *er*, it was found that definite objects and pronouns as direct object were rated equally, whereas indefinite objects were rated much lower.

Considering the test sentences with a fronted adverb, it was found that there was a small difference between the intransitive test sentences without *er* and a fronted adverb on the one hand and without a fronted adverb on the other hand. Although this difference was only small, it was statistically significant. This finding thus does suggest that the adverb effect (Culicover 1992) exists also in Dutch. No such difference was found in the transitive test sentences however. We should also take into account that the finite verb of the embedded clause might have influenced the ratings, since there were no minimal pairs of test sentences with and without *er* and with and without an adverb. Note also that only single adverbs were tested in the Dutch questionnaire. The small indication of a possible adverb effect might very well have been much larger when also adverbial phrase had been tested. Finally, we found that we can divide the Dutch informants into three groups when considering their preference for the presence/absence of *er*. The largest group (49 percent) consists of Dutch speakers that need *er* in embedded intransitive sentences. A second group (28 percent) comprises of Dutch speakers that do not need *er* in embedded intransitive sentences. The last group (5 percent) do not show any preference when it comes to the presence or absence of *er* in embedded transitive sentences. 6 percent of the participants could not be assigned to any of the groups, due to missing data for the embedded intransitive test sentences with and/or without *er*.

4.5 Overview of the results

The results of the current study are summarized below in Table 20. With ‘rated higher than’ it is meant that the mean of one type of test sentence is higher than the mean of the type of test sentence to which it is compared to.

	English	Icelandic	Dutch
1) Overt complementizer rated higher than no overt complementizer in:			
<i>wh</i> -subject extractions	×	✓	✓
<i>wh</i> -object extractions	×	✓	✓
2) Transitive embedded clauses rated higher than			
intransitive embedded clauses	✓	✓	✓
3) Pronouns and definite objects rated higher than indefinite direct objects	✓	×	✓ = in sentences with <i>er</i> × = in sentences without <i>er</i>
4) Sentences with a fronted adverb and an overt comp rater higher than without a fronted adverb	×	×	✓ = in intransitives without <i>er</i>
<i>Specifically for Icelandic</i>			
1) Sentences with expletive insertion rated higher than without expletive insertion		×	
2) Sentences with SF rated higher than without SF		×	
<i>Specifically for Dutch</i>			
1) Sentences with <i>er</i> rated higher than without <i>er</i> in:			
transitives			×
intransitives			✓

Table 20. Overview of the results found for English, Icelandic and Dutch in the present study

CHAPTER 5. THE SYNTACTIC ANALYSIS

5.1 Introduction

In this chapter, I will present the syntactic analysis for the results obtained in this study. This analysis will be embedded in the Phase Reference Model (Arsenijević & Hinzen (2012); Sheehan & Hinzen 2011; Hinzen 2012; Hinzen & Sheehan 2013), a model of the referentiality of syntactic phases. In this model, it is assumed that grammar plays a crucial role in deriving the semantic notion of *reference*. That is, how a certain sentence refers to the real world is derived by the grammar of that sentence. The model takes the three phases within Minimalism, DP, *v*P and CP, to correspond to the three basic notions of human language reference. That is, DP phases refer to objects, *v*P phases to the events, and CP phases to propositions. Within this model, the three phases are all capable of different degrees of reference. Phases can refer in a maximally unspecific way, a maximally specific way and in an intermediate way with an intermediate degree of specific reference. In DPs for example, *a man* refers in a maximally unspecific way: the DP phase refers to any constitution of the kind ‘man’. Proper names, such as *Peter*, are cases of maximally specific degree of reference: such a DP phase refers to one specific man, namely Peter. In between for example is the DP phase *the man*. This DP phase refers to one specific man, but in a less specific way as in the case of *Peter*, since the point of reference of *the man* can change in different contexts, whereas proper names always refer to the same individual, regardless of the context. The degree of reference is determined by the phase-interior and the phase-edge (1).

(1) [EDGE [INTERIOR]]

The degree of reference of a certain phase increases when material from the phase-interior moves to the phase edge. In addition, the degree of reference is determined by the *descriptiveness* of the phase-interior, meaning that when the interior of a phase involves material with a high level of descriptiveness, the phase itself is evaluated as having a higher degree of reference.

I will argue that in the case of embedded *wh*-extraction clauses, verb movement and the richness of verb morphology play a crucial role in the descriptiveness of the CP phase. I will show that Icelandic, which has both V-to-T movement and rich verbal morphology, is capable of giving the CP phase enough descriptiveness to refer with the right degree of reference. Dutch, which also has V-to-T movement but no rich verbal morphology, needs an extra element in *wh*-subject extractions to give the the CP the right degree of reference. This extra element is *er*, which signals information about the extracted *wh*-subject. English, not having V-to-T movement or rich verbal morphology, is left with a descriptive content of CP that is incapable of referring in the right degree. English cannot use the strategy of Dutch, because expletive insertion in *wh*-subject extraction contexts is not available in this language. Therefore, I will argue that English has to opt for a different strategy: using an agreeing complementizer to provide the CP phase with an inherent link with the extracted subject. In line with Rizzi (1990), Roussou (2002) and Van Craenenbroeck & Van Koppen (2002), I will assume that the English null complementizer is an agreeing complementizer, whereas the complementizer *that* is not.

The outline of this chapter is as follows. I will first discuss the PR model in more detail in section 5.2, as well as the extension of this model to the verbal domain by Diercks, Van Koppen and Putnam (to appear). In section 5.3, I will then discuss the syntactic analysis for the subject/object asymmetries in *wh*-extractions in English, Icelandic and Dutch within the Phase Reference Model. After showing how the PR model can account for Icelandic and Dutch not exhibiting the *that*-trace effect, and English exhibiting this effect, I will also discuss the transitivity effect and the definiteness effect of the direct object within this model. Finally, in section 5.4 I will briefly discuss previous

accomplished by a bit of both (non)movement strategies from the interior to the edge of the phase. How this works exactly for each phase is discussed in the next three sections.

5.2.2 The nominal domain

Sheehan and Hinzen (2011) start their theory of the referential capacities of DPs with the work of Longobardi (1994, 2005). In his work, Longobardi proposes that there are two strategies for reference in the nominal domain. The first is reference mediated by a quantifier or descriptive predicate (*every cat* or *some cat*), the second is direct reference to an object, i.e. a proper name. Longobardi states that in the first strategy, a determiner functions as a quantifier that binds a ‘variable’ – the lexical root. In the second strategy however, reference is reached by means of N-to-D raising:

(4) $[_{DP} \text{Sofia } [_{NP} \text{Sofia}]] \rightarrow \text{reference}$

Sheehan and Hinzen (2011) state however, that definite DPs are not quantificational, and thus do not seem to fall under any of the two strategies for reference. They claim that definite DPs behave as pronouns, or free variables that are bound by the context. Therefore, they have less rigid reference than proper names. They illustrate this by a contrast between the behavior of the definite DP and the pronoun on the one hand and proper name on the other in the following examples (taken from data in Elbourne (2008)):

- (5) The Pope is usually Italian.
- (6) (Pointing at the Pope) He is usually Italian.
- (7) #Joseph Aloisius Ratzinger is usually Italian.

These examples show that both definite DPs and pronouns can refer to different individuals in different contexts, whereas this is not possible in the case of proper names.

Thus, according to Sheehan and Hinzen (2011) there is not a two-way but a three-way distinction between the strategies for reference of DPs. The scale as given in (3) is applicable to this three-way distinction. That is, DPs with maximally unspecific reference such as indefinite DPs, show no movement of the interior of the phase to the edge, and have an underspecified or empty edge. DPs with maximally specific reference such as proper names show N-to-D raising, and the interior of the phase remains empty. In between these two extremes are definite DPs, with an obligatory filled edge but no movement from the interior to that edge. Taken together, arrive at the following three-way distinction of the referentiality of DPs:

Referentiality of DPs

- (I) Indefinite DPs: Existential reference – Phase edge is unfilled
Reference to any instance of the kind cat $[_{DP} [_{NP} \text{cats}]]$
- (II) Definite DPs: Specific reference – Phase edge is filled with a pronominal determiner
Reference to a single individual in that context $[_{DP} \text{the } [_{NP} \text{cat}]]$
- (III) Proper names: Rigid reference – N-to-D raising, phase interior is discarded
Rigid reference to a single individual in all contexts $[_{DP} \text{Sofia } [_{NP} \text{Sofia}]]$

As Sheehan and Hinzen (2011) state, reference is thus an ‘edge-phenomenon’; the more the edge of the phase is filled, the more specific the reference of the phase becomes. In other words, the more the edge of the phase is filled and the less the interior plays a part, the more is referred to the extensional world.

5.2.3 The clausal domain

Recall from the introduction of the PR model that in the clausal domain, the CP phase corresponds to the semantic category of propositions. Similarly to the nominal domain then, TP is the descriptive core of the proposition, and CP makes the proposition a referring one to the extensional world (8):

(8) [_{CP} specificity of reference [_{TP} descriptiveness of the phase]]

Sheehan and Hinzen (2011) propose for the clausal domain also a three-way distinction, now between CP phases. The most specific referring CPs are matrix clauses, which can only refer to extensional truth:

(9) Sofia has a cat.

Someone could not utter a sentence such as (9) when he/she at the same time means that the sentence is false. Matrix clauses are rigidly referring to the truth. Matrix clauses thus correspond to proper names in the nominal domain. Therefore, Sheehan and Hinzen (2011) state that in these truth-denoting CPs, C is substituted by V/T (overtly or covertly), in analogy with N-to-D raising in proper names. Examples such as (10) in which an overt complementizer is banned support this idea of (covert) V/T-to-C substitution in matrix clauses.

(10) (*that) Sofia has a cat.

In this sentence, the complementizer is banned from C because it is already occupied by V/T being covertly moved to C. In other Germanic languages that have V2, this movement is not covert but overt.

Indefinite CPs, as Sheehan and Hinzen (2011) call them, are the opposite of matrix clauses, and are maximally unspecific in reference. They refer to propositions; sentences such as (11) can be possibly true, but the speaker has not yet evaluated whether they are true or false.

(11) Sofia thinks [(that) owning a cat is the best thing in the world].

The truth-value of the embedded CP phase is not relevant for the truth value of the whole sentence; it is rigidly true that Sofia *thinks* owning a cat is the best thing in the world, no matter if it is indeed the case that owning a cat is the best thing in the world. In that sense, indefinite CPs are necessarily embedded clauses, because they have an unvalued truth-value and matrix clauses are referring rigidly to the truth. In the given model, in English indefinite CPs, the C head is then optionally null – the edge is empty or underspecified as was the case in indefinite DPs. This is indeed the case:

(12) I believe [_{CP} (that) Mary will come].

Finally, we have definite CPs. As was the case in the nominal domain, definite CPs are in between the indefinite CPs and matrix clauses. According to Sheehan and Hinzen (2011), these definite CPs are factive CPs and are presupposed by the speaker to be true (13).

(13) I regret [_{CP} that Mary will come].

When uttering this sentence, the speaker presupposes ‘that Mary will come’ to be true. This implies that contradiction of definite CPs is impossible, which was not the case with indefinite CPs:

(14) Indefinite CP: Sofia thinks that animals are always cute, but they’re not.

(15) Definite CP: #Sofia realizes that animals are always cute, but they’re not.

In factive CPs, the complementizer is no longer optionally null in English, but obligatory:

(16) Sofia realizes [*_i(that) animals are always cute].

We thus come to the following three-way distinction for the referentiality of CPs:

Referentiality of CPs

- (I) Indefinite CPs: Reference to a proposition – Phase edge is underspecified or unfilled
Proposition is possibly true or false - ‘Sofia thinks [(that) cats are cute]’
- (II) Definite CPs: Reference to a fact – Phase edge is filled with a proform C
Proposition evaluated as true - ‘Sofia regrets [that she hasn’t got a pet]’
- (III) Matrix clauses: Reference to a truth – V/T-to-C substitution (overtly or covertly)
Rigid interpretation – ‘Sofia loves cats’

We therefore see that the specificity of reference of CPs is in the same way correlated with the make-up of the phase, that is, its edge and its interior.

5.2.4 The verbal domain

In their paper, Sheehan and Hinzen (2011) mention that their three-way distinction for referentiality should also work for the third phase, *vP*. They note that the referentiality of *vP* probably involves the aspectual properties of predicates, but do not develop this any further. Diercks et al. (to appear) use the suggestion of Sheehan and Hinzen (2011) that the specificity of reference of the *vP* has to do with the aspectual properties of predicates, and develop this idea in more depth. They argue that the three-way distinction made for DP phases and CP phases can be made for *vP* phases as well. Similarly to Sheehan and Hinzen (2010) did for the DP and CP phase, Diercks et al. (to appear) start out with the claim that the referentiality of *vP* phases is modeled by both the phase edge and the phase interior. Recall from the introduction to the PR model that *vP* phases refer to ‘events’. Since it is hard to refer to an event without also referring to the participants of that event, Diercks et al. (to appear) argue that it is likely that movement of DP objects to the edge of *vP* plays a role in the creation of a more specific reference of the phase.

They point out that movement of either a verb or a DP object to the edge of the *vP* phase should in fact be expected as part of greater specificity of phase reference. For example, in a sentence such as (17), both the verb *eat* and the object DP *strawberries* form the interior of the *vP*.

(17) The rabbits [_{vP} [ate strawberries]].

Since the interior of a phase forms the descriptive content of that phase, both *ate* and *strawberries* play a part in the degree of reference of the *vP* phase. Thus, raising either the verb or the object DP to the phase edge will create a more specific reference.

Moreover, they state that the degree of the reference of the *vP* phase is determined by two factors. First, the degree of reference to an event is determined by whether all participants (object DPs)

in the event are included in the phase. Not only whether but also how these participants are included is of importance. The degree of specific reference of the participants themselves contributes to the degree of specific reference of the phase as a whole. Second, as Sheehan and Hinzen (2011) already suggested, the aspectual properties of the predicate determine the degree of specific reference of the vP phase. What follows from this claim is the intuition that vP phases in which not all participants are included, refer in an incomplete way to an event. Let us consider the example in (18).

- (18) a. Sofia [read].
 b. Sofia [read a book].
 c. Sofia [read the book].
 d. Sofia [read *The Picture of Dorian Grey*].

When we refer to an event of *reading*, but not all participants are included, in this case (17a) the object being read is left out; the degree of specific reference of the vP is very low. When we refer to the event of reading, but mention the object that is being read, without specifying the object (*a book*) as in (17b), the degree of specific reference increases. It increases even more when the object is specified in a more definite way (*the book*) (17c); (*The Picture of Dorian Grey*) (17d). The degree of reference of the vP phase is the highest when all participants are included, thus the object DP, and the degree of specific reference of this object is maximal – a proper name. The first factor that determines the degree of specific reference of the vP phase: the participants of the event and the degree of specific reference of these participants, is thus clear. Let us now turn to the second part: the aspectual properties of the predicate, or the *telicity* of the predicate.

The term *aspect* refers to the internal temporal structure of events (Thompson 2006). For example, the contrast we see in (19) is an *aspectual* difference.

- (19) a. Sofia is reading a book.
 b. Sofia read a book.

In (18a) the event of reading is continuous, whereas in (18) the event of reading is finished. Within possible aspectual properties of predicates falls the *telicity* of a predicate. *Telic* events are events with a distinct, definite and inherent end point, *atelic* events are events of which no specific end point is specified (Thompson 2006). Consider for example the difference between (20a) and (20b).

- (20) a. Sofia put the bottle on the table.
 b. Sofia carried the bottle.

In (20a), the point when the event ends is known; the moment that the bottle stands on the table, the event of putting is finished. In (20b) however, there is no such distinct end point given. One famous test for English to see whether a predicate is telic or atelic is by adding *in/for* modifying PPs, illustrated in (21). PPs such as *in an hour* only go with telic events, whereas PPs such as *for an hour* are only compatible with atelic events.

- (21) a. Mary ate an apple *in an hour*/**for an hour*
 b. Mary walked **in an hour*/*for an hour*

[Thompson, 2006: 213]

In (21a), we see that only the PP *in an hour* is compatible with the event of eating an apple. Therefore, we can conclude that this event is a telic event. In (21b), we see the opposite: the event of walking is only compatible with the PP *for an hour*, and we can thus say that this is an atelic event.

Not only the verb determines the telicity of the predicate however, but also other material of the verb phrase, such as DPs and PP adjuncts (Verkuyl 1972, 1989, 1993, 1999; Jackendoff 1991; Pustejovsky 1991; Zagana 1993). For example, in (22) we see how the direct object can influence the telicity of the predicate.

- (22) a. Mary ate the apple.
 b. Mary ate apples. [Thompson, 2006: 212]

In (22a), the event is telic; the end point is when the apple is eaten. When the definite singular object is substituted by a bare plural, as in (22b), the aspectual properties of the predicate change: the event is now no longer an accomplishment but rather an activity without a specified endpoint. What this example shows is that the degree of specificity of direct object has a substantial effect on the telicity of the predicate. Thompson (2006) proposes that the direct object of telic events moves to a specific position at the edge of *vP*, which she refers to as *Spec,Asp(ect)P*, while a direct object of an atelic event does not. She argues that this movement of the telic direct object is done in order to check a [bounded] feature. Other verb phrase material, such as PP adjuncts, which also influence the aspectual properties of the predicate want to get this [bounded] feature checked as well. In other words, direct objects and adjunct PPs of telic predicates are in competition to move to the edge of *vP* to check their [bounded] feature. Evidence for this competition for movement to the edge of *vP* is the fact that they cannot co-occur in one sentence, as (22) shows.

- (23) a. John ate bagels until 3:00.
 b. *John ate the bagel until 3:00. [Thompson, 2006: 218]

In (23a), the sentence is fine since only the adjunct PP competes for the position at the edge of *vP* (recall that bare plurals are compatible with atelicity). In (23b) however, the direct object and adjunct PP are in competition for this position, and since only one element can move and get its [bounded] feature checked, the derivation crashes

Consider now again the idea of Diercks et al. (to appear) that telicity is one of the factors that influence the degree of specific reference of the *vP* phase. Examples like (23) show that telicity in turn is influenced by movement of a DP or PP to the edge of *vP*. The only adjustment Diercks et al. (to appear) make to Thompspon's (2006) proposal is that the movement of the direct object of a telic predicate does not happen in order to get a [bounded] feature checked, but to make the degree of reference of the *vP* phase *more specific*. It is important to note here, that the idea of specific DP objects moving to a higher position (such as the edge of *vP*) is not new at all. In many analyses of object shift/scrambling but also clitic doubling or differential object marking, these processes are the result of the movement of the specific DP object to the edge of *vP* (Diercks et al. to appear).

We therefore see that raising an object DP from the phase-interior to the edge of *vP* can play an important role in specifying the degree of reference of the phase. The degree of reference of a phase is partly determined by its phase-interior, and as the DP phase is part of the descriptive content of the interior, it is necessarily involved in determining the degree of reference of the higher *vP* phase. This is not surprising, as objects (to which DP phases refer) are the participants of events (to which *vP* phases refer). Of course, these events are in turn the foundation of a proposition, to which CP phases refer. It follows that the degree of specific reference of both the DP and the *vP* phase influence the

degree of specific reference of the highest phase, the CP phase. At this point we need to ask the question when the degree of reference for each phase is calculated, since the degrees of reference for all phases seems to rely on the degree of reference of the previous phase. In the PR model, reference gets determined when the next-higher phase is merged. The degree of reference can only be calculated for one phase at a time, leading to the situation in which the previously built phase is interpreted in the context of the current phase (Arsenijević & Hinzen 2012). The degree of reference of the entire embedded clause then, is the culminated result of the degrees of reference of all phases in that clause.

Diercks et al. (to appear) argue that the fact that embedded CPs are incapable of referring to the *truth*, therefore being intensional rather than extensional, directly follows from the process of building a derivation by phase and from the claim that preceding phases become part of the descriptive content of the next-higher phase. That is, intensionality effects arise precisely when phases are embedded phases, because then the lower phase becomes part of the interior and the degree of reference of the next phase is thus partly determined by the descriptiveness of this interior. As maximally specific reference can only be reached when the interior is moved to the phase-edge and the phase- interior is left empty, phases that are embedded in other phases can never show rigid reference – in the case of CPs never referring to the truth. This means that when a CP shows a connection with the higher phase in which it is embedded, the CP phase can necessarily only have less specific reference (Diercks et al. to appear).

We now arrive at the proposed three-way distinction of the referentiality of vP phases. Since in telic events the direct object moves to the edge of the vP phase, phases that refer to telic events are the most rigid in their reference. In atelic events, the direct object does not move to the edge of the phase and thus the reference of the phase is less specific. Events with the maximally unspecific form of reference are existential or presentational clauses. These do not refer to a bounded event at all, but rather to a state of some sort (Diercks et al. to appear). This is captured below.

Referentiality of vPs

- (I) Maximally unspecific vPs: Existential event reference – No movement to phase edge
No reference to a bounded event but to a state
'Sofia knew Spanish.'
- (II) Specific non-rigid vPs: Atelic events – No movement to phase edge
Reference to a bounded event but is not rigid
'Sofia learned Spanish.'
- (III) Maximally specific vPs: Telic events – Movement to phase edge
Rigid reference to a bounded event
'Sofia read the Spanish book (in an hour).'

With the three-way distinction of referentiality of the DP, CP and vP phase in place, we now move on to see how the PR model can be used to account for the data of the current study.

5.3 A PR model account of variation in *wh*-extractions in Germanic

5.3.1 Recapitulation of the results

Before applying the PR model to the data of *wh*-extractions in Icelandic, Dutch and English, let us first briefly revisit the results of the questionnaires again. The summarizing overview of the results of the previous chapter is repeated here below in Table 1. Recall that with 'rated higher than' it is meant that the mean of one type of test sentence is higher than the mean of the type of test sentence to which it is compared to.

	English	Icelandic	Dutch
1) Overt complementizer rated higher than no overt complementizer in:			
<i>wh</i> -subject extractions	×	✓	✓
<i>wh</i> -object extractions	×	✓	✓
2) Transitive embedded clauses rated higher than intransitive embedded clauses	✓	✓	✓
3) Pronouns and definite objects rated higher than indefinite direct objects	✓	×	✓ = in sentences with <i>er</i> × = in sentences without <i>er</i>
4) Sentences with a fronted adverb and an overt compiler higher than without a fronted adverb	×	×	✓ = in intransitives without <i>er</i>
<i>Specifically for Icelandic</i>			
1) Sentences with expletive insertion rated higher than without expletive insertion		×	
2) Sentences with SF rated higher than without SF		×	
<i>Specifically for Dutch</i>			
1) Sentences with <i>er</i> rated higher than without <i>er</i> in:			
transitives			×
intransitives			✓

Table 1. Overview of the results found for English, Icelandic and Dutch in the present study

In addition, we saw that there are two types of Dutch speakers, those who need *er* in (intransitive) test sentences, and those who do not need *er* in the same sentences. Now that the results are recapitulated, we can move on to the actual proposed analysis for these results.

5.3.2 One step further: the referentiality of an interrogative indefinite CP

In order to be able to apply the PR model to the cross-Germanic variation investigated in the current study, we first have to consider some abstract notions and less specific parts of the PR model. The indefinite CP phase is of special interest for us here, since the embedded *wh*-extraction sentences that are investigated in this study are extractions out of an indefinite CP phase. This paragraph therefore focuses on the referentiality of indefinite CPs.

First, there are some important notions in the model that need a clear definition. As discussed in section 5.2.3, indefinite CPs refer to propositions, and their reference is maximally unspecific. That is, the proposition is possibly true or false, and not yet evaluated as either one by the speaker. The example that was given is repeated here in (24).

(24) Sofia thinks [(that) cats are cute].

The phase edge of an indefinite CPs is underspecified or unfilled, as can be seen by the optionality of the complementizer in (23). Therefore, the descriptive content of the CP phase, TP, determines the degree of referentiality. However, Sheehan and Hinzen (2011) do not give strict definitions of these notions, *referentiality*, *degree of specific reference* and *the descriptiveness of the phase-interior*, in their work on the PR model. Henceforth, I will work with the following definitions for these notions:

- (A) *Referentiality*: The capacity of a phase to refer to the real world.
- (B) *Degree of specific reference*: The degree in which a phase refers in a specific way to the real world.
- (C) *Descriptiveness of the phase-interior*: The extent to which the phase-interior gives valuable information for the reference of the phase to the real world.

Second, Sheehan and Hinzen (2011) do not elaborate on the role of the complementizer in determining the reference of the indefinite CP phase; they only state that the complementizer is underspecified. Since the complementizer is located in the edge of the CP phase however, as can be seen in (25), we must consider a possible role of the complementizer in determining the reference of the phase.

- (25) $[_{\text{Spec,CP}} \text{C complementizer } [_{\text{TP}} \text{phase-interior}]]$

I will assume that the only role the complementizer plays in the reference of the indefinite CP phase is that it signals the type of reference: reference to a proposition which is not yet evaluated as true or false. The complementizer itself does not make the degree of specific reference higher or lower. It is proposed that certain embedded infinitive clauses in English lack a CP layer (Tappe 1984; Fanselow 1989; Li 1990; Rooryck 1994 and Wurmbrand 2001). For example, in a sentence such as (26), the structure of the embedded clause has no CP layer, as illustrated in (27).

- (26) John tried [to sing a song].

English

- (27) John tried $[_{\text{Spec,TP}} \text{pro } [_{\text{T}} \text{T } [_{\text{vP}} [_{\text{v}} \text{to sing [a song]}]]]]$.

[Wurmbrand 2006 :318]

The embedded clause [to sing a song] does not refer to any proposition however. That is, with this embedded clause, it cannot be referred to the proposition that someone in the real world is singing a song. In light of the PR model, we can say that this is caused by the missing of a CP layer. More precisely, it is caused by the lack of a complementizer, which in turn is caused by the missing of a CP layer. Without a complementizer, the embedded clause cannot signal the type of reference that is made.

Let us now move back to embedded clauses that have an indefinite CP phase. When the indefinite CP phase is evaluated in the next phase, the role of the complementizer is to indicate what type of reference is made. This means that the degree of reference of an indefinite CP phase is solely determined by the phase-interior. Sheehan and Hinzen (2011) state that extraction out of a phase becomes easier the more the interpretation is determined by the phase-interior. The more the edge is filled, the harder this extraction is (Sheehan & Hinzen 2011). In other words, it is easier to extract out of an indefinite CP phase than out of a definite CP phase. Let us consider the complete distinction of referentiality of CPs again:

Referentiality of CPs

- (I) Indefinite CPs: Reference to a proposition – Phase edge is underspecified or unfilled
Proposition is possibly true or false - ‘Sofia thinks [(that) cats are cute]’
- (II) Definite CPs: Reference to a fact – Phase edge is filled with a proform C
Proposition evaluated as true - ‘Sofia regrets [that she hasn’t got a pet]’
- (III) Matrix clauses: Reference to a truth – V/T-to-C substitution (overtly or covertly)
Rigid interpretation – ‘Sofia loves cats’

Since in indefinite CP phases the degree of reference is determined by the phase-interior, and in definite CP phases both the phase edge and the phase-interior play a role, it must be easier to extract out of an indefinite CP phase than a definite CP phase. This is indeed the case. Consider the extraction out of an indefinite CP phase in (26), which is allowed, and the ungrammaticality of (27) – an extraction out of a definite CP phase. The matrix clause in (27) is a factive clause, which, according to Sheehan and Hinzen (2011) always selects a definite CP.

- (26) Who do you think [is walking]?
- (27) *Who do you regret [that is walking]?

We could thus say that the unspecificity of the complementizer in indefinite CPs (in English optionally null) makes it possible for extraction to occur. When the complementizer is more specific as is the case in definite CPs, this extraction is no longer possible. Taken together, the complementizer has two functions:

- (I) Signaling the type of proposition to which the CP phase refers
- (II) Determining whether extraction is possible or not

Third, we have to make explicit within the PR model what the role of the descriptiveness of the phase-interior is in determining the reference of the phase. Sheehan and Hinzen (2011) state that ‘*TP constitutes the descriptive core of the proposition*’ (p. 419), but do not elaborate on how this core can contribute to the degree of reference of the CP phase. The assumption I will make is that when the descriptiveness of the phase-interior is high, the interior signals information that is valuable for the reference of the phase to the real world. Let us consider an example. In case of the CP phase, the phase-interior is TP. The TP can signal information that is valuable for the reference to the real world in two ways :1) movement of the finite verb to T, and 2) rich verbal morphology on T. In the first case, the finite verb gives valuable information about the event in the real world that is referred to. Consider an example from Icelandic, in which V-to-T movement occurs. The example sentence is given in (28) and the structure of its embedded clause is given in (29).

- (28) Hver heldur hann [að gangi]? *Icelandic*
Who thinks he that walks.3.sg
'Who does he think is walking?'

- (29) [_{Spec,CP} ~~wh-subject~~ C að [_{TP} [_{Spec,TP} ~~wh-subject~~ T gangi]] [_{VP} [_{VP} gangi]]]?

The finite verb *gangi* ‘walks.3.sg’ has moved from its position in V to T. Now this finite verb is part of the phase-interior of the embedded CP phase. Therefore, it is part of the descriptive content of the CP phase. The finite verb gives information about the event of *someone who is walking* in the real

world. This is valuable information for the reference of the CP phase to the real world. That is, the interrogative indefinite CP phase refers to a proposition: *that there is someone in the real world who is doing something*, and the finite verb in T adds information about what this someone is doing: walking. I assume here that an auxiliary, such as *is* in the English sentence in (30) and the structure of its embedded clause in (31) does not add this kind of information to the descriptive core of the CP phase. It does not give any information about the event to which is referred to, and therefore does not add valuable information to the descriptive core of the CP phase.

(30) Who does he think [is walking]?

(31) [_{Spec,CP} ~~wh-subject~~ C null C [_{TP} [_{Spec,TP} ~~wh-subject~~ T is][_{VP} [_{VP} walking]]]]?

For structures such as (31), I thus say that the T is underspecified.

Now consider the second strategy for the TP to signal information that is valuable for reference of the CP phase: rich verbal morphology on T. When we look at the example sentence (28) and its structure in (29), we see that there is rich verbal morphology on T in Icelandic: the *-i* affix shows that the subject of the clause is third person singular. The verbal morphology on T therefore signals information about the number and person of the subject of the proposition that is referred to. It makes the degree of reference more specific: it is easier for the CP to refer to the real world when the number and person of the subject are known. When the degree of reference of the CP is too low, the clause fails to refer to the world. Since the purpose of a clause is to refer, the derivation crashes when the degree of reference comes below a certain threshold of a meaningful clause. When this happens, a sentence becomes ungrammatical. Of course, also before the degree of reference of a CP phase is below the threshold, there is a continuum of grammaticality. The hearer will evaluate the clause which CP phase has exactly the right degree of reference necessary to refer to its type of proposition as completely grammatical. In contrast, clauses of which the CP phase has a lower or higher degree of reference than needed for that type of CP phase will be rated as less grammatical, but not necessarily as ungrammatical.

In addition, the descriptiveness of the TP is in turn also determined by the edge of the preceding phase: vP. As Arsenijević & Hinzen (2012) state:

Reference can only be determined for any syntactic structure at the point that the next-higher phase is merged – the idea that only one sort of reference (i.e. one phase) is calculated at a time, so that any previously-built phases are interpreted in the context of the current phase (Arsenijević & Hinzen 2012: 30)

When the vP phase is sent to Spell-Out, all the material inside it is no longer available to add information to the descriptiveness of the next phase. The material in Spec,vP however, is still available. Therefore, a third way to come to a more descriptive core of the CP phase is by having a vP with material in its edge. We will come back to this below.

The final step that needs to be made is from the referentiality of declarative indefinite CP phases to the referentiality of interrogative indefinite CP phases. This is needed since the types of clauses that are investigated in the current study are *wh*-extractions out of embedded clauses with an indefinite CP, for example the *wh*-subject extraction sentence in (32) and the *wh*-object extraction sentence in (33).

(32) Who do you think [is walking]?

(33) What do you think [(that) she is drawing]?

In the PR model, no specific mention is made of the referentiality of interrogative CPs. However, since declarative indefinite CPs refer to propositions, we can state that interrogative indefinite CPs are *questions about the proposition that is referred to*, and this proposition is not yet evaluated as true or false. In *wh*-extraction sentences such as (32), the subject is extracted, which would normally be situated in Spec,TP. This is illustrated in (34).

(34) I think [_{CP} (that) [_{Spec,TP} Sofia _T is [_{VP} [_V walking]]].

In (34) we see that the subject *Sofia* is still part of the descriptive core of the indefinite CP phase, which determines the degree of reference of the CP phase. When the subject is extracted, the subject is no longer part of the descriptive core of the CP phase, as shown in (35).

(35) Who do you think [_{Spec,CP} ~~wh-subject~~ C [_{Spec,TP} ~~wh-subject~~ [_T is [_{VP} [_V walking]]]]?

The degree of reference of the interrogative indefinite CP phase is thus even less than that of the declarative indefinite CP, and relies completely on the descriptive content of TP.

A question that arises at this point is why the copy of the *wh*-subject does not play any part in the descriptiveness of the phase-interior. That is, why is the subject in non-extraction part of the descriptive content of the CP phase, whereas the copy of the *wh*-subject is not? I will argue that this is because the phase to which the *wh*-subject will move is not yet merged in the derivation at the point that the degree of reference of the embedded interrogative CP phase is calculated. Recall that the degree of reference of each phase is calculated after the next phase is merged. Thus, the degree of reference of the embedded CP phase is calculated at the moment when the next phase of the matrix clause is merged, as illustrated in (36) for the sentence in (35).

(36) [_{VP} [_{VP} _V think [_{Spec,CP} ~~wh-subject~~ C [_{Spec,TP} ~~wh-subject~~ [_T is [_{VP} [_V walking]]]]]?
merge

The *wh*-subject copy in the embedded CP however, is dependent on the completion of the syntactic *wh*-movement chain for the checking of its phi-features. This syntactic *wh*-movement chain is only completed when the CP phase of the matrix clause is merged and the complete syntactic structure of the sentence has been built. As long as the *wh*-movement chain is not completed, the intermediate links of the chain – the *wh*-copies – are incapable to contribute to the descriptiveness of the phase in which they are located, assuming that phi-features play a part in the ability of DPs to refer. Thus, in a language in which T is underspecified or empty in interrogative indefinite CPs, and the *wh*-subject is extracted from the interior of this phase, nothing is left that adds any valuable information to the descriptive content of the phase. As was already stated above, two ways to make the descriptiveness of the TP higher is by movement of the finite verb to T and by rich verbal morphology on T. In that way, the CP phase can still – albeit in a maximally unspecific manner – refer. However, what happens in a language in which T is underspecified or empty as well, resulting in the almost completely underspecified CP phase in (37)?

(37) [_{Spec,CP} ~~wh-subject~~ C underspecified or empty C [_{Spec,TP} ~~wh-subject~~ [_T underspecified or empty]]

As interrogative indefinite CPs rely for the degree of specificity of their reference on the descriptiveness of T, the degree of reference for the CP phase can by no means be specified when T is also underspecified or empty. This means that in such a case the degree of reference of the CP phase is below the threshold to make the phase able to refer. When a phase cannot refer to the world, it has failed its sole purpose as speech act and therefore a non-referring phase cannot be derived and interpreted.

How can this problem be solved, then? It is clear that languages without V-to-T movement and rich verbal morphology can still create *wh*-extraction sentences. I will argue that there are two possibilities for these languages. One possibility is to move or insert some overt material to the interior of the CP phase – TP – to increase the descriptiveness of the phase interior. An example is the insertion of an expletive pronoun, which is, as we will see below, done in Dutch. A second possibility is to make use of a different complementizer than the default complementizer. This different complementizer needs to have an inherent link with some element of the phase-interior, for example a complementizer that shows agreement with the extracted *wh*-subject. Let us now see whether these predictions hold when we consider the data from English, Icelandic and Dutch.

5.3.3 Account for the cross-Germanic variation

5.3.2.1 Icelandic

Let us first consider the case of Icelandic. The results of the research questionnaires showed that sentences with the complementizer *að* are always rated higher than the same sentences without the complementizer. This was the case for both *wh*-subject extractions and *wh*-object extractions. To illustrate, sentences such as (38) and (39) are rated higher than sentences such as (40) and (41).

- | | |
|--|------------------|
| (38) Hver heldur hann [að gangi]?
Who thinks he that walks
'Who does he think is walking?' | <i>Icelandic</i> |
| (39) Hvað heldur hann [að hún teikni]?
What thinks he that she draws
'What does he think (that) she is drawing?' | <i>Icelandic</i> |
| (40) Hver heldur hann [gangi]?
Who thinks he walks
'Who does he think is walking?' | <i>Icelandic</i> |
| (41) Hvað heldur hann [hún teikni]?
What thinks he she draws
'What does he think (that) she is drawing?' | <i>Icelandic</i> |

In addition, it was found that sentences with a Stylistically Fronted (SF) item or the insertion of an expletive were rated lower than those sentences without an SF item or an expletive. For example, sentences such as (42) and (43) were rated higher than sentences such as (44) and (45).

- | | |
|---|------------------|
| (42) Hver heldur hann [að skrifi bréf]?
Who thinks he that writes letter.INDEF
'Who does he think is writing a letter?' | <i>Icelandic</i> |
|---|------------------|

- (43) Hver heldur hann [að gangi]? *Icelandic*
 Who thinks he that walks
 'Who does he think is walking?'
- (44) Hver heldur hann [að skrifað hafi bók]? *Icelandic*
 Who thinks he that written has book.INDEF
 'Who does he think has written a book?'
- (45) Hver heldur hann [að það hafi gengið]? *Icelandic*
 Who thinks he that there has walked
 'Who does he think has been walking?'

Let us first see how we can account for the fact that *wh*-subject extraction sentences with the default complementizer *að* are rated higher than these sentences without this complementizer. Consider again the fact that Icelandic has V-to-T movement as well as rich morphology on T. The descriptiveness of the interior of the CP phase is determined by TP. As the inflectional morphology in Icelandic indicates number and person of the (extracted) subject, we can thus say that this morphology increases the descriptiveness of the interior. Since V moves to T in Icelandic, and this finite verb shows rich morphology, the descriptiveness of the CP interior is very high, as illustrated in (46):

- (46) [_{Spec,CP} ~~*wh*-subject~~_{CP} complementizer [_{Spec,TP} ~~*wh*-subject~~ [_{TP} T + inflectional morphology]]

The degree of specific reference in the case of an interrogative indefinite CP completely relies on the descriptiveness of the phase-interior. Since the descriptiveness of the phase-interior in Icelandic is high, the interrogative indefinite CP is able to refer with the correct degree of reference. Recall that the role of the complementizer is to signal the type of reference of the clause: a proposition in this case. When the complementizer is not present, such as in sentence (40), it cannot refer the type of reference, which is problematic for the derivation of the rest of the sentence. This explains why *wh*-subject extraction sentences without the complementizer *að* are rated lower than those sentences with the complementizer. In the same way, we can account for the fact that *wh*-object extraction sentences without the complementizer *að* are rated lower than those with the complementizer.

In Chapter 4, it was discussed that *wh*-object extractions with the complementizer *að*, such as sentence (39) in Icelandic were rated even better than *wh*-subject extractions with the complementizer, such as sentence (38). In the current analysis this is exactly what we would expect: in *wh*-object extractions the subject remains in Spec,TP of the embedded clause and thus contributes to the descriptiveness of the CP's phase-interior. This is illustrated in (48) for the embedded clause of sentence (39), repeated here in (47).

- (47) Hvað heldur hann [að hún teikni]? *Icelandic*
 What thinks he that she draws
 'What does he think (that) she is drawing?'
- (48) [_{Spec,CP} ~~*wh*-object~~_{CP} að [_{Spec,TP} hún [_T teikn-i]] [_{VP} [_{VP} teikni [~~*wh*-object~~]]]]?

In other words, the descriptiveness of the phase-interior of the CP phase is in *wh*-object extractions higher than in *wh*-subject extractions, leading to a slightly higher degree of reference for the interrogative indefinite CP. This means that the CP phase can refer better to the real world.

Let us now turn to the fact that sentences with a SF item such as (44), repeated here as (49), are rated lower than sentences such as (42), repeated here as (50).

- (49) Hver heldur hann [að skrifað hafi bók]? *Icelandic*
 Who thinks he that written has book.INDEF
 ‘Who does he think has written a book?’

- (50) Hver heldur hann [að skrifi bréf]? *Icelandic*
 Who thinks he that writes letter.INDEF
 ‘Who does he think is writing a letter?’

In line with Franco (2009), I assume that an SF item targets a position in the CP layer, namely Spec,FinP. As this is part of the edge of the CP phase, the movement of a SF item to its target position makes the phase edge heavier. The structure of the embedded clause of (49) is given in (51).

- (51) [_{Spec,ForceP} ~~wh-subj~~ _{Force,CP} að [_{Spec,FinP} skrifi [_{Spec,TP} ~~wh-subj~~ [_T hafi-i]] [_{VP} [_{VP} ~~hafi-skrifi~~ [bók]]]]?

Recall that in the case of an indefinite CP phase, the phase-edge must be underspecified or unfilled. In the case of (51), the SF item *skrifi* has made the phase-edge specified. Therefore, the CP phase is no longer capable of referring in a maximally unspecific way.

An important question at this point is why SF in *wh*-subject extraction contexts is optional in Icelandic – as reported in the literature (see Franco 2009 and Holmberg 2001 for an overview) – although the results of the current study does not reveal this optionality. One possible answer lies outside the realm of syntactic theory, but rather in the field of sociolinguistics. Iceland is known for its very conservative language policy. For example, loan words are actively banned from the language. Icelandic is often referred to as almost the same language as Old Norse, the ancestor of both Modern Norwegian and Modern Icelandic. This is reflected in the fact that Icelandic has retained a lot of syntactic properties that are lost in Mainland Scandinavian, such as rich verbal morphology and case-marking. There is much normative pressure on the language use and it is hard to speak of any dialectal variation – we could even say there are no dialects of Icelandic at all. The use of SF is actively taught at schools (personal communication with Heimir van der Feest-Viðarsson; native speaker of Icelandic). It might well be that the use of SF in *wh*-extraction contexts in (earlier stages of) Icelandic is caused by normative pressure on the language use, as a generalization that SF must be possible in all contexts with a subject gap. It would thus be of great interest to collect contemporary data of other constructions in which SF is reported to be possible. In addition, a more sociolinguistic approach to the SF phenomenon could also give more insight into when and in what constructions SF is still possible and to what extent normative pressure plays a role in the use of SF. I leave this for future research.

Let us now turn to the fact that sentences with expletive insertion, such as (45), repeated here in (52), are rated lower than sentences without expletive insertion, such as (43), repeated here in (53).

- (52) Hver heldur hann [að það hafi gengið]? *Icelandic*
 Who thinks he that there has walked
 ‘Who does he think has been walking?’

- (53) Hver heldur hann [að gangi]? *Icelandic*
 Who thinks he that walks

'Who does he think is walking?'

As Icelandic has V-to-T movement and rich verbal morphology, the descriptiveness of the phase-interior has the correct degree of reference for the indefinite CP phase to refer to a proposition. There is thus no need for the insertion of overt material to make the phase-interior more descriptive. Moreover, I will state that it is even prohibited to insert the expletive *það* in *wh*-subject extractions – therefore accounting for the extremely low ratings (Mean always below 2) of the Icelandic test sentences with *það* insertion. This is prohibited because, as Franco (2009) states, the expletive *það* does not target the Spec,TP position, but rather the Spec,FinP position. As an illustration, consider the structure of the embedded clause of (52) given in (54).

(54) [_{Spec,ForceP} ~~wh-subj~~ _{Force,CP} að [_{Spec,FinP} það [_{Spec,TP} ~~wh-subj~~ [_T hafi-i]] [_{VP} [_{VP} hafi gengið]]]]?

The insertion of the expletive *það* in the CP layer makes the edge of the CP phase heavier and therefore increases the degree of reference of the phase in such a way that the phase can no longer refer in a maximally unspecific way. In addition, as Sheehan and Hinzen (2011) state, the more the phase of an edge is filled, the harder it becomes to extract out of this phase. These two facts combined, allow us to account for the very low ratings of *wh*-extraction sentences with an inserted expletive in the CP layer.

5.3.2.2 Dutch

Let us now move on to the case of Dutch *wh*-extractions. In Dutch, the complementizer *dat* needs to be present in both *wh*-subject and *wh*-object extraction sentences. For example, sentences such as (55) and (56) are grammatical, whereas sentences such as (57) and (58) are not.

- | | |
|---|--------------|
| (55) Wie denkt hij [dat er loopt]?
Who thinks he that there walks
'Who does he think is walking?' | <i>Dutch</i> |
| (56) Wat denk hij [dat zij tekent]?
Who thinks he that she draws
'What does he think (that) she draws?' | <i>Dutch</i> |
| (57) *Wie denkt hij [er loopt]?
Who thinks he there walks
'Who does he think is walking?' | <i>Dutch</i> |
| (58) *Wat denk hij [zij tekent]?
Who thinks he she draws
'What does he think (that) she draws?' | <i>Dutch</i> |

How can we account for this within the PR model? As was already mentioned in Chapter 2, in line with Den Besten (1989) and Bennis & Hoekstra (1989), I assume that in Dutch embedded clauses, the finite verb moves to T and is in head-final position. In other words, in Dutch embedded clauses there is V-to-T movement. This means that the finite verb is part of the descriptive content of the CP phase. This structure illustrated in (59) for the embedded clause of sentence (55).

(59) [_{Spec,CP} ~~wh-subject~~ _{CP} dat [_{Spec,TP} ~~wh-subject~~ [_T loopt] [_{VP} [_{VP} ~~loopt~~]]]]?

However, there is no rich inflectional morphology on the finite verb in Dutch. I will therefore assume that the interior of Dutch interrogative indefinite CP phase is, due to lack of rich inflectional morphology, too low to give the CP phase enough degree of reference to refer to a proposition. As was mentioned above, in such cases a language can choose between two options: 1) the movement or insertion of overt material in the CP phase-interior, or 2) making a closer link between C and the extracted subject, such as with complementizer agreement. In the case of Dutch, the insertion of *er* takes place in *wh*-subject extractions in order to increase the descriptiveness of the phase-interior – enough for the CP to refer. I assume that the expletive *er* is inserted in the Spec,TP position. Furthermore, I assume that *er* signals information about the degree of reference of the extracted subject, namely that the extracted subject is indefinite. This idea that *er* signals information about the degree of reference of the extracted subject is supported by Dutch expletive constructions such as declarative sentences with a preverbal expletive *er*. Such sentences are only possible when the thematic postverbal subject is *indefinite*. This is shown in example (60) and (61).

(60) *Er* staat een paard op de gang. Dutch
 There stands a horse on the hall
 ‘There is a horse standing in the hall.’

(61) **Er* staat het paard op de gang. Dutch
 There stands the horse on the hall
 ‘The horse is standing in the hall.’

In (60), we see that the thematic postverbal subject *een paard* ‘a horse’ is indefinite and can co-occur with the preverbal *er*. In (61), we see that, now the thematic postverbal subject *het paard* ‘the horse’ is definite, it can no longer co-occur with preverbal *er*.

Let us now go back to the *wh*-subject extraction sentences in which *er* is inserted. The structure of such an embedded clause is given in (62).

(62) [_{Spec,CP} ~~*wh*-subject~~_{CP} dat [_{Spec,TP} *er* [_T loopt] [_{VP} [_{VP} ~~loopt~~]]]]?

The inserted *er* signals that the extracted subject is indefinite, which adds information to the descriptive core of the CP phase. Note also that in this way the second possibility of choosing a different complementizer is not necessary in Dutch, as was also the case in Icelandic. The default complementizer *dat* is therefore needed, to signal the type of CP phase. This explains why in Dutch the complementizer *dat* is always present in embedded *wh*-extraction sentences.

We can now explain why *er* is not needed in *wh*-object extraction sentences such as (56), repeated here as (63).

(63) Wat denk hij [dat zij tekent]? Dutch
 Who thinks he that she draws
 ‘What does he think (that) she draws?’

The structure of the embedded clause of (63) is given in (64).

(64) [_{Spec,CP} ~~*wh*-object~~_{CP} dat [_{Spec,TP} zij [_T tekent] [_{VP} [_{VP} ~~loopt~~]]]]?

In this kind of sentences the subject is in the Spec,TP position and adds valuable information to the descriptive content of the phase-interior. The finite verb in T does that as well. This is enough for the CP phase to refer in a maximally unspecific way and no expletive has to be inserted.

There arises an immediate problem with this account for Dutch however. How is it possible for both a *wh*-subject copy and *er* to be in Spec,TP? The answer is that this is in fact not possible, but rather that the *wh*-subject directly moves from its *v*P-internal position to Spec,CP of the embedded clause, thus allowing *er* to be positioned in Spec,TP. The structure we derive at is given in (66) for the embedded clause of (55), repeated here as (65).

- (65) Wie denkt hij [dat er loopt]? Dutch
 Who thinks he that there walks
 ‘Who does he think is walking?’

- (66) [_{Spec,CP} ~~*wh*-subject~~_{CP} dat [_{Spec,TP} *er* [_T loopt] [_{VP} [_{VP} ~~loopt~~]]]]?

Note that this idea of *wh*-subject movement not moving via Spec,TP is not new (see amongst others Erlewine 2014, Bošković 2008, Rizzi & Shlonsky 2007; Holmberg & Hróarsdóttir 2003, Rizzi 1990, Rizzi 1982). This idea is for example supported by sentences with floating quantifiers in Brazilian Portuguese (Menuzzi 2000), henceforth BP, as discussed by Rizzi & Shlonsky (2007). Consider the examples in (67).

- (67) a. Que rapazes o Paulo desconfia [que tenham beijado *todos* a Maria]? BP
 Which boys DET Paulo suspects that have kissed all DET Maria
 ‘Which boys does Paulo suspect have all kissed Maria?’
 b. *Que rapazes o Paulo descondfia [que *todos* tenham beijado a Maria]?
 Which boys DET Paulo suspects that all have kissed DET Maria
 ‘Which boys does Paulo suspect have all kissed Maria?’ [Rizzi & Shlonsky 2007: 42]

Before extraction, the quantifier *todos* ‘all’ is part of the DP *todos rapazes* ‘all boys’. In (67) we see that when *rapazes* is extracted and moved to the Spec,CP of the matrix clause, the quantifier *todos* is left behind in the site *rapazes* is extracted from. Example (67a) shows that the quantifier *todos* appears in a lower position than the preverbal Spec,TP position. However, *todos* cannot appear in preverbal position, shown by the ungrammaticality of (67b). Rizzi & Shlonsky (2007) take these BP examples as evidence that the subject *rapazes* is extracted from a lower position than Spec,TP, arguably the *v*P internal position, and moves directly to the Spec,CP position of the matrix clause.

There is also evidence in Dutch for the *wh*-subject skipping the Spec,TP position and moving directly to Spec,CP. Consider for example Dutch *wh*-extraction sentences with the so-called *wat voor* ‘what kind of X’ split (Zwart, 2011). An example of this *wat voor* split is given in (68).

- (68) *Wat* had Cook *voor* (*een*) *journaal* gelezen? Dutch
 What had Cook for a log read
 ‘What kind of log had Cook read?’ [Zwart 2011: 212]

As can be seen in this example, the *wat voor* (*een*) *journaal* ‘what kind of log’ can be split, with only *wat* fronted. Now consider a Dutch embedded *wh*-subject extraction sentence with this *wat voor* split:

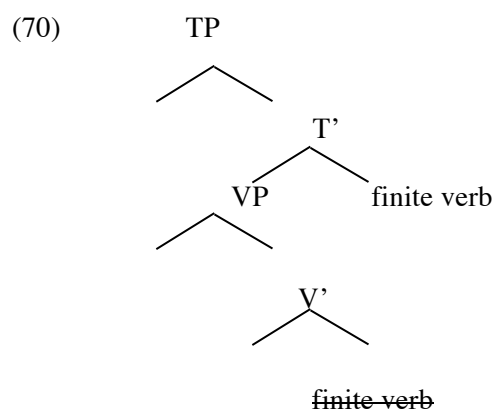
(69) *Wat denkt hij [dat er voor boeken zijn gekocht]?*

Dutch

What thinks he that there for books are bought

‘What type of books does he think are bought?’

In this sentence, we see that *wat* is fronted, and the rest of the subject *voor boeken* is left in its position in the embedded clause. In the Spec,TP of the embedded clause the expletive *er* appears, and the stranded part of the subject *voor boeken* appears on the right of *er*. Since not both *er* and *voor boeken* can be situated in Spec,TP, I assume that *wat* has moved directly from its *vP* internal position to the Spec,CP position of the embedded clause, leaving the rest of the DP in place. The structure of the embedded clause of sentence (69) is given in (71). Recall from Chapter 2 that I assume the Dutch structure in (70).



(71) [_{Spec,CP} ~~wat~~_{CP} dat [_{Spec,TP} *er* [_T zijn] [_{VP} ~~wat~~ voor boeken [_{VP} zijn-gekocht]]]]?

These type of sentences thus support the statement that in Dutch the *wh*-subject in embedded *wh*-extraction sentences directly moves from its *vP* internal position to the Spec,CP position of the embedded clause. Recall that the Dutch results showed that a large group of the Dutch informants needed *er* to be present in *wh*-subject extraction sentences such as (72), whereas the other group of Dutch informants did not need *er*, such as in sentence (73).

(72) *Wie denk je [dat er luistert]?*

Dutch

Who think you that there listens

‘Who do you think is listening?’

(73) *Wie denk je [dat luistert]?*

Dutch

Who think you that listens

‘Who do you think is listening?’

In light of this idea of a *wh*-subject skipping the Spec,TP position, I want to propose that there are two types of Dutch grammar. In the first type of grammar, sentences such as (72) are derived. In this grammar, the *wh*-subject can directly move to Spec,CP and *er* is inserted to attain the right degree of reference of the interrogative indefinite CP phase. The embedded clause of this type of structure is given in (74).

(74) [_{Spec,CP} ~~wie~~_{CP} dat [_{Spec,TP} *er* [_T luistert] [_{VP} ~~wie~~ [_{VP} luistert-]]]]?

The second type of grammar derives sentences such as (73). In this grammar, the *wh*-subject has to move to Spec,CP via Spec,TP. Since a *wh*-subject copy then occupies the Spec,TP position, *er* cannot be inserted. The embedded clause of this type of structure is given in (75).

(75) [_{Spec,CP} ~~*wie*~~_{CP} dat [_{Spec,TP} ~~*wie*~~_{TP} [T luistert] [_{VP} ~~*wie*~~_{VP} [_{VP} ~~luistert~~]]]?

This assumption of two types of grammars explains the fact that we found two types of Dutch speakers; one type that needs *er* in *wh*-subject extraction sentences and one that does not. One prediction that this proposal makes, is that Dutch speakers who have the type of grammar in which the *wh*-subject directly moves from the vP internal position to the Spec,CP position, should allow for *wat voor* split constructions (69), repeated here as (76).

(76) *Wat denkt hij [dat er voor boeken zijn gekocht]?* *Dutch*
 What thinks he that there for books are bought
 ‘What type of books does he think are bought?’

Dutch speakers with the other type of grammar in which the *wh*-subject moves via Spec,TP to Spec,CP should not allow for constructions such as (76). Future research is needed to investigate this kind of predictions.

5.3.2.3 English

Finally, we will address the case of English. The English research questionnaires revealed that both *wh*-subject extraction sentences and *wh*-object extraction sentences without the complementizer *that* are rated higher than those sentences with the complementizer *that*. For example, sentences such as (77) and (78) are rated higher than sentences such as (79) and (80).

(77) Who does he think [is walking]? *English*
 (78) What does he think [she is drawing]? *English*
 (79) Who does he think [that is walking]? *English*
 (80) What does he think [that she is drawing]? *English*

Recall from Chapter 2 that English has no V-to-T movement. I argued above that auxiliaries located in T do not contribute valuable information to the descriptiveness of the CP phase-interior, as they do not refer to any event in the real world in the way a lexical verb does. Therefore, in English *wh*-subject extraction sentences such (79) both the phase-edge and the phase-interior of the interrogative indefinite CP phase is underspecified. The structure of the embedded clause of sentence (79) is given in (81).

(81) [_{Spec,CP} ~~*wh subject*~~_{CP} that [_{Spec,TP} ~~*wh subject*~~_{TP} [T is] [_{VP} [_{VP} walking]]]?

The degree of reference for indefinite CPs is determined solely by the descriptive content of the phase-interior. In the case of English interrogative indefinite CPs out of which the *wh*-subject is extracted,

the phase-interior consists only of the auxiliary *is*. As this auxiliary does not add valuable information about the event to which is referred, to the descriptive core, the descriptiveness of the phase-interior is too low. That is, it is too low to make the CP phase refer to its proposition.

In the previous section, two predictions were made for possible strategies to solve this problem. The first possibility was that of movement of overt material to the phase-interior, but this strategy is not used in English. This can be seen in example (82).

(82) *Who does he think [that *there* is writing a letter?]

In (82), we see that the insertion of the expletive *there* in the embedded clause leads to an ungrammatical sentence. Why this is the case is beyond the scope of this thesis, but the reader is referred to Vikner (1995) for an overview of expletive subjects in Germanic.

As expletive insertion is not a strategy that is used in English, I want to propose that English opts for the second possibility to increase the descriptiveness of the CP phase-interior. This second option is using a different C that has some inherent link with the phase-interior. Such an inherent link with the phase-interior is for example agreement between the C head and the extracted *wh*-subject. When a language uses a C that has an inherent link with the phase-interior, it adds valuable information about the subject that is extracted out of Spec,TP to the descriptiveness of the phase-interior. I want to propose that this information about the subject is enough information for the descriptiveness of the phase-interior to make the indefinite CP phase refer to its proposition. An example of the structure of an indefinite CP phase of which the phase-interior is otherwise underspecified is given in (83).

(83) [_{Spec,CP} ~~*wh*-subject~~_{CP} Agreeing C [_{Spec,TP} ~~*wh*-subject~~ [_T underspecified]]
< ----- >

In line with Rizzi (1990), Roussou (2002) and Van Craenenbroeck & Van Koppen (2002), I assume that the null complementizer in English is a form of *that* which agrees in phi-features with the subject, whereas the overt complementizer *that* does not. Below I will discuss these proposals in turn, after which I will show how this idea of an agreeing complementizer exactly works within the PR model.

Rizzi (1990) proposed that there are two instances of C in English: one realized as *that* and one as Agr, to account for the *wh*-subject/object asymmetries in English extraction sentences. In his account, he assumes the Empty Category Principle (ECP). The ECP states that every trace must be properly governed. Within the GB framework in which Rizzi's work was written, it was assumed that *wh*-extracted elements leave a trace at the location from which they are extracted. This is shown in the example sentences in (84) and (85).

(84) Who_i does he think [_{Spec,CP} t_i [_C*(that)][_{Spec,TP} t_i [_T is [walking]]? *English*

(85) What_i does he think [_{Spec,CP} t_i [_C(that)][_{Spec,TP} she [_T is [drawing [t_i]]?

Rizzi (1990) argues that the subject-trace in sentences such as (84) cannot be properly governed, because C does not qualify as a proper governor when *that* is present. Agr, however, is a C head which carries agreement that is triggered by the intermediate trace in Spec,CP. Therefore, it counts as a proper governor. When the lexical C head *that* is deleted, Agr can properly govern the subject-trace in Spec,TP, and thus is the sentence grammatical. In the case of *wh*-object extraction, such as (85), the object-trace is properly governed by the V head. There is no need to delete the complementizer *that*.

As was already mentioned in Chapter 1, however, with the abandonment of notions such as proper government in the Minimalist framework (Chomsky 1995, 1998), account such as that of Rizzi (1990) for English *wh*-subject/object asymmetries were abandoned as well.

The idea of an agreeing null complementizer in English *wh*-extraction sentences is also used by Roussou (2002) to account for sentences such as (84) and (85). Her proposal is embedded within the Minimalist framework. She assumes that lexical items are directly merged in the position where they surface. In the case of embedded *wh*-subject extraction sentences, this means that the *wh*-phrase is directly merged in the Spec,CP of the matrix clause. Moreover, she assumes that the English null complementizer in the embedded clause is a morphological reflex of the Agree relation between T and C. In declarative sentences such as (86), the phi-features on T are valued by the subject that enters in an Agree relation with T.

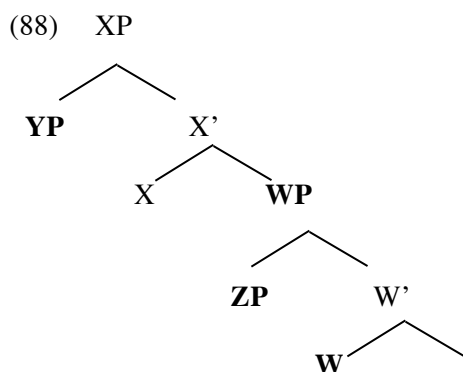
(86) I think [(that) he is walking]. *English*

In a sentence such as (87), the *wh*-subject is directly merged into the Spec,CP position of the matrix clause.

(87) Who does he think [**(that)* is walking]? *English*

The subject can no longer enter in an Agree relation with T, and the phi-features on T cannot be checked. Roussou (2002) then argues that a relation between T and C in the embedded clause solves this problem. The presence of the lexical C *that*, blocks this relation between T and C. Therefore, as Roussou (2002) argues, is *wh*-subject extraction across the complementizer *that* ungrammatical in English. The idea of the complementizer *that* blocking an Agree relation with T is in my opinion an less elegant account than Rizzi's (1990) proposal of *that* and an agreeing C as two different complementizers in English. This latter proposal is also supported by Van Craenenbroeck & Van Koppen (2002), however, in Minimalism. Let us therefore move on to the discussion of their work.

Van Craenenbroeck & Van Koppen (2002) argue that checking in the local domain of a head can trigger richer agreement morphology on that head than checking at a distance (cf. Bobaljik 2001; Chomsky 2001a,b; Guasti & Rizzi 1999; McCloskey 2001) and apply this to agreement phenomena in the CP-domain. They specify the local domain of a head as including its specifier, its complement, the specifier of that complement and the head of that complement. This is illustrated in the tree in (26), in which the local domain is given in bold:



They specify richer agreement as the number of features overtly expressed on a head, which is in local configuration, as being a superset of the features expressed on that head when it is in a non-local configuration. When the checking of a head takes place at a distance, the XP that checks the head is

not in the local domain of the head (Van Craenenbroeck & Van Koppen 2002). They also assume that the locality of an XP is determined at Output. That is, after the derivation is completed. To illustrate their claim that checking of a head in its local domain triggers richer agreement than checking at a distance, they consider several agreement phenomena in the CP-domain, such as complementizer agreement. Note that complementizer agreement is taken to indicate the presence of phi-features on the C head (Koppen & Van Craenenbroeck 2002; Bennis & Haegeman 1984; Haegeman 1992; Law 1991). An example of complementizer agreement in the Dutch variety of Katwijk is given in (89).

- (89) Datt-e we komm-e *Katwijk Dutch*
 That-PL we come-PL
 ‘That we are coming’ [Van Craenenbroeck & Van Koppen 2002: 3]

They claim that this complementizer agreement is triggered by the local checking of the uninterpretable phi-feature on the C head against the interpretable phi-feature of the subject. This subject is in the specifier of the complementizer of the C head, and therefore in the local checking domain.

Their analysis thus predicts that when the uninterpretable phi-feature on the C head is not checked in the local domain but at a distance, no complementizer agreement is attested. This prediction is borne out, as can be seen in (90).

- (90) Dat / *darr-e allichte wiej de westrijd winnen zölt *Hellendoorn Dutch*
 That / that-PL probably we the game win will
 ‘That we will probably win the game.’ [Van Craenenbroeck & Van Koppen 2002: 3]

In this example we see that when an adverb intervenes between the complementizer and the subject, complementizer agreement is ruled out. This is exactly what Van Craenenbroeck & Van Koppen (2002) predict, as the subject is now not in the local domain of the C head¹¹.

Let us now return to the claim that the null complementizer in English is an instance of rich agreement morphology on the C head, whereas the complementizer *that* is an instance of poor agreement morphology on the C head (cf. Rizzi 1990; Roussou 2002). This proposal succeeds at explaining a declarative sentence in English with a null complementizer, such as (91):

- (91) I think [_{CP} [_{C°} \emptyset [_{TP} [_{SPEC, TP} John] will come]]].
[Van Craenenbroeck & Van Koppen, 2002:14]

The uninterpretable phi-feature on C° is checked against the interpretable phi-feature of the subject, which is in the local domain of C°. Therefore, the null complementizer appears. Again, the prediction is that when the subject is not in the local domain of C°, the null complementizer is ruled out. This prediction is correct, as can be seen in (92).

- (92) I think that / * \emptyset for all intents and purposes John was the mayor of the city.
[Van Craenenbroeck & Van Koppen, 2002:14]

We thus see the same pattern as in the Dutch complementizer agreement data. That is, when an adverb intervenes and the subject is no longer in the local domain of C°, an agreeing complementizer is impossible. Furthermore, Van Craenenbroeck & Van Koppen (2002) predict that the appearance of the

¹¹ Note that Van Koppen (2005) in her dissertation gives a different account for the data of Hellendoorn Dutch.

complementizer *that* correlates with the splitting up of the CP in ForceP and FinP. They follow Bolinger (1972), who observed that the complementizer *that* signals known or understood information. For example, expressions that comment on something that is assumed to be already known information for the hearer, require the complementizer *that*:

(93) a. It's insane *that* he said that.

b. *It's insane he said that.

[Bolinger, 1972: 68]

According to Van Craenenbroeck & Van Koppen (2002) then, whenever an embedded clause is viewed as known information, this forces the CP-domain to split up. Whenever the CP is split, they argue that the uninterpretable phi-feature of C is in Force°. Since the CP is split up into ForceP and FinP, the subject *not* is in the local domain of Force° and the uninterpretable phi-feature in Force° cannot be locally checked. This means that there is no rich morphology on C°, and the null complementizer is ruled out.

We can now turn to *wh*-subject extraction contexts. Recall that Van Craenenbroeck & Van Koppen (2002) assume that the locality of the subject is determined after the completion of the derivation. At that point, all copies of the *wh*-subject share the same phi-features, and one of the copies can check the uninterpretable phi-feature on C°, as long as that copy is in the local domain of C°. In example (94), the higher copy locally checks the uninterpretable phi-feature on C°, and the null complementizer is attested.

(94) Who_i do you think [_{CP} [C° \emptyset] [_{TP} [_{SPEC, TP} who_i] has won the race]]

[Van Craenenbroeck & Van Koppen 2002: 15]

We thus see that in English the null complementizer agrees in phi-features with the subject, whereas the complementizer *that* does not. Van Craenenbroeck & Van Koppen (2002) thus present convincing arguments for the idea that there is an agreeing null complementizer in English

For the current analysis for English within the PR model, I will use the proposal of Van Craenenbroeck & Van Koppen (2002) for the existence of an agreeing null complementizer in English. Let us move back to the structure of English embedded indefinite CP phases to see how this idea can be used to account for the English data within the PR model. The structure of the embedded indefinite CP phase of the sentence in (95) is given in (96).

(95) Who do you think [is walking]?

English

(96) [_{SPEC, CP} ~~wh-subject~~_{CP} Agreeing C [_{SPEC, TP} ~~wh-subject~~ [_T is] [_{VP} [_{VP} walking]]]?

As was already mentioned above, an Agreeing C makes an inherent link with the subject that is extracted out of the phase-interior. This link is made by C, agreeing in phi-features with the subject. In this way, the Agreeing C can add valuable information about the person and number of the extracted subject to the descriptive core of the phase-interior. This descriptive core in turn is able to give the CP phase the right degree of reference. Therefore, the CP phase can refer to its proposition, and the rest of the derivation can be build.

Let us now turn to *wh*-object extraction sentences in English. Recall that the results of the English research questionnaire showed that *wh*-object extraction sentences were rated higher without the complementizer *that*, such as the sentence in (97), than with this complementizer, such as the sentence in (98).

(97) What does he think [she is drawing]?

English

(98) What does he think [that she is drawing]?

Within the PR model we can account for the finding that, although both sentences are grammatical, sentence (97) is still rated higher than sentence (98). Consider the structures of the embedded clause of these sentences in respectively (99) and (100).

(99) [_{Spec,CP} ~~wh-object~~_{CP} Agreeing C [_{Spec,TP} she [_T is] [_{VP} [_{VP} drawing [~~wh-object~~]]]]?]

(100) [_{Spec,CP} ~~wh-object~~_{CP} that [_{Spec,TP} she [_T is] [_{VP} [_{VP} drawing [~~wh-object~~]]]]?]

In both cases, there is no V-to-T movement of the finite verb and no rich verbal morphology on T. Only the embedded subject *she*, then, adds valuable information to the descriptiveness of the phase-interior of the CP phase. In the case of (99) however, the agreeing complementizer makes an inherent link between itself and the phase-interior. As the agreeing complementizer is in the phase-edge, this inherent link increases the degree of reference of the CP phase. This is not the case in (100), since the complementizer *that* is not an agreeing complementizer. Furthermore, I assume that only the subject as descriptive content of the phase-interior, as in (99), results in a degree of reference that is *just enough* for the CP to refer to its proposition. In the case of (100), then, the degree of reference of the CP phase is slightly higher because of the agreeing complementizer. Therefore, also in *wh-object* extraction sentences in English, those sentences with an agreeing null complementizer are rated slightly higher than those with the (non-agreeing) complementizer *that*.

5.3.3 Account for the transitivity effect

Recall from Chapter 4 that a transitivity effect was found in *wh*-extraction contexts in English, Icelandic and Dutch. That is, transitive sentences were rated higher than intransitive sentences in all languages. For example, in English, sentences such as (101) are rated higher than sentences such as (102).

(101) Who does he think [is writing a letter]?

English

(102) Who does he think [is walking]?

This can be explained within the PR model in the following way. Recall that in the PR model, we can distinguish between three categories of human language reference, corresponding to the three phases in syntax. DPs refer to objects, *vP* to events and CPs to propositions:

- (I) ‘objects’ in the nominal domain; which correspond to the DP phase
- (II) ‘events’ in the verbal domain; which correspond to the *vP* phase
- (III) ‘propositions’, in the clausal domain; which correspond to the CP phase.

The objects are the participants of events, and the events in turn are the foundation of propositions. Take for example the sentence in (103).

(103) Sofia regrets [_{CP} that she [_{vP} finished [_{DP} her lunch]]]

In (103), the object *her lunch* is part of the event of *finishing*. In turn, the event of *finishing her lunch* is part of the proposition *that she finished her lunch*. Therefore, object DPs are involved in the degree of reference of the vP phase, and the vP in turn in the degree of reference of the CP phase. Consider for example the sentence in (104).

(104) Sofia gives her book.

In this sentence, one of the participants of the event of *giving* is missing: the person to which Sofia gives the book. When one of the participants of the event is missing, the event is incomplete (Diercks et al. to appear). Therefore, in sentences such as (104), the vP cannot refer in a complete way. In *wh*-extraction sentences, one of the participants of the event is always missing as either the subject or the object is extracted. Consider the examples in (105) and (106).

(105) Who do you think [is writing a letter]?

(106) What do you think [(that) she is drawing]?

In (105), the subject of the embedded clause is missing. This means that the event of *writing a letter* misses one participant, namely the person who writes the letter. In (106), the object of the embedded clause is missing. In other words, the event of *drawing something* misses one participant: the object being drawn. Recall that the degree of reference of the entire embedded clause is the culminated result of the degrees of reference of all phases in that clause. Now take a sentence with an intransitive embedded clause, such as (107).

(107) Who do you think [is walking]?

In (107), again, the subject of the embedded clause is missing. This means that the event of walking misses one participant, namely the one who is walking. In this case however, the *only* participant of the event is extracted; there is no object. Since DP objects contribute to the degree of reference of the vP phase, the vP phase in an intransitive clause is lower than a vP phase in a transitive clause. As the vP phase in turn contributes to the degree of reference of the CP phase, we can say that the CP phase of an intransitive clause has a lower degree of reference than the CP phase of a transitive clause.

From these facts we can derive why intransitive *wh*-extraction sentences are rated lower than transitive *wh*-extraction sentences. In intransitive *wh*-extraction sentences, no participant of the event is left to contribute to the degree of reference. The degree of reference of the entire embedded clause is much lower than that of transitive *wh*-extraction sentences, in which one participant of the event can still contribute. Since transitivity is a property that is the same in all languages, it is completely expected within the PR model that intransitive *wh*-extraction sentences are rated lower than transitive *wh*-extraction sentences in the three languages under study.

5.3.4 Account for the definiteness effect of the embedded object

Finally, let us consider the definiteness effect of the embedded object that was found in English and Dutch *wh*-subject extraction sentences. In English, the results showed that transitive *wh*-subject extraction test sentences without complementizer were rated lower when the object DP was indefinite

than when the object DP was definite or a personal pronoun. For example, sentences such as (108) were rated lower than sentences such as (109) and (110).

(108) Who does he think [is writing *a letter*]? *English*

(109) Who does he think [is writing *the letter*]? *English*

(110) Who does he think [is teasing *him*]? *English*

Within the PR model, the degree of reference of the ν P phase is the highest when all participants are included, one of them being the the object DP, and when the degree of specific reference of this object is maximal. Furthermore, the degree of reference of ν P influences the degree of reference of the CP. Recall from the introduction to the PR model that indefinite DP objects do not move to the edge of the ν P phase, whereas definite DP objects and pronominal objects do. Let us now consider how this works in the examples given above. The structure of the embedded clause of sentences (108)-(110) is given in (111)-(113).

(111) [_{Spec,CP} ~~wh-subject~~ _{CP} [_{Spec,TP} ~~wh-subject~~ [T is] [_{VP} [_{VP} writing [_{DP} a letter]]]]?]

(112) [_{Spec,CP} ~~wh-subject~~ _{CP} [_{Spec,TP} ~~wh-subject~~ [T is] [_{VP} the letter [_{VP} writing [_{DP} ~~the letter~~]]]]?]

(113) [_{Spec,CP} ~~wh-subject~~ _{CP} [_{Spec,TP} ~~wh-subject~~ [T is] [_{VP} him [_{VP} teasing [_{DP} ~~him~~]]]]?]

When a DP object moves to the edge of the ν P phase, this phase becomes more edge-heavy and thus the degree of reference of the ν P becomes higher. In (111), the indefinite DP object does not move to the edge of the ν P phase. In contrast, in (112) and (113) the definite DP object and pronominal DP object respectively move to this edge. This means that the degree of reference of the ν P phase in (112) and (113) is higher than in (111).

Now we can account for the English data. These showed that sentences with an indefinite DP object in the embedded clause are rated lower than sentences with a definite DP object or pronominal DP object. These facts can be explained by the movement of the definite and pronominal DP object to the ν P phase. This movement makes the edge of the ν P heavier and increases the degree of reference of the ν P. In the case of an embedded clause with an indefinite DP object, this object does not move to the edge of the ν P. The degree of reference of this ν P phase is therefore lower than that of the ν P phase in which an object is moved to its edge. The edge of the ν P phase in turn is part of the descriptive content of the next phase: the CP phase. An embedded clause with an indirect DP object does not have anything in its ν P edge, as can be seen in (111). The edge of this ν P cannot contribute to the descriptiveness of the CP phase-interior. This means that it does not play a part in the determination of the degree of reference of the CP phase. Contrastively, an embedded clause with a direct DP object or pronominal DP object does have this object in its ν P edge, as is shown in (112) and (113). This ν P edge is therefore part of the descriptive core of the CP phase; it contributes to the degree of reference of this CP phase. As such a CP phase refers to the world in a more specific degree, the hearer evaluates the sentence as better than a CP phase that refers to the world in a less specific degree. Taken together, the definiteness effect we see in English embedded clauses can be accounted for within the PR model.

Let us now move on to the definiteness effect of the embedded object in *wh*-subject extractions in Dutch. The definiteness effect found in Dutch was twofold. On the one hand, transitive *wh*-subject

extraction sentences without *er* showed a similar pattern as in English. That is, the sentences with an indefinite object DP were rated lower than the sentences with a definite or pronoun DP. For example, sentences such as (114) were rated lower than sentences such as (115) and (116).

- (114) Wie denk je [dat *een portemonnee* vond]? *Dutch*
 Who think you that a wallet found
 ‘Who do you think has found a wallet?’
- (115) Wie denk je [dat *de portemonnee* vond]? *Dutch*
 Who think you that the wallet found
 ‘Who do you think has found the wallet?’
- (116) Wie denk je [dat *hem* slaat]? *Dutch*
 Who think you that him hits
 ‘Who do you think hits him?’

This definiteness effect can thus be accounted for in the same way as was just done for English. On the other hand, transitive *wh*-subject extraction sentences with *er* showed the reverse pattern. That is, sentences in which *er* co-occurred with an indefinite object DP were rated higher than sentences in which *er* co-occurred with a definite or pronoun DP. Consider the examples below. Sentences such as (117) were rated higher than sentences such as (118) and (119).

- (117) Wie denk je [dat *er een portemonnee* vond]? *Dutch*
 Who think you that there a wallet found
 ‘Who do you think has found a wallet?’
- (118) Wie denk je [dat *er de portemonnee* vond]? *Dutch*
 Who think you that there the wallet found
 ‘Who do you think has found the wallet?’
- (119) Wie denk je [dat *er hem* slaat]? *Dutch*
 Who think you that there him hits
 ‘Who do you think hits him?’

This is also expected within the PR model, as *er* is inserted as a remedy for the low descriptiveness of the CP phase-interior. The structures of the embedded clauses of sentences (117)-(119) are given below in (120)-(122).

- (120) [_{Spec,CP} ~~wh-subject~~ _{CP} [_{Spec,TP} *er* [_T vond] [_{vP} [_{vP} ~~vond~~ [_{DP} een portemonnee]]]]?
 (121) [_{Spec,CP} ~~wh-subject~~ _{CP} [_{Spec,TP} *er* [_T vond] [_{vP} de portemonnee [_{vP} vond [_{DP} ~~de portemonnee~~]]]]?
 (122) [_{Spec,CP} ~~wh-subject~~ _{CP} [_{Spec,TP} *er* [_T slaat] [_{vP} hem [_{vP} slaat [_{DP} hem]]]]?

When the degree of reference of the vP increases by means of movement of the definite or pronominal object DP to the edge of vP, this higher degree of reference of vP in turn increases the degree of reference of the next phase – CP. In such cases, the insertion of *er* is no longer needed. When *er* still

gets inserted, the degree of reference of the CP becomes too high to refer to its proposition. This explains the fact that in Dutch *wh*-subject extraction sentences with an embedded definite DP object (121) and pronominal DP object (122) in co-occurrence result in a less acceptable sentence than such sentences with an indefinite DP object. This indefinite DP object does not move to the edge of vP, as can be seen in (120), and does not increase the degree of reference of the CP phase. Therefore, the insertion of *er* is still needed. This explains why sentences such as (117) are rated higher than sentences such as (118) and (119).

5.4 Previous accounts

5.4.1 Introduction

In this section, I will briefly discuss previous accounts of the *that*-trace effect. Due to reasons of space however, I will limit myself to the specific accounts by Pesetsky & Torrego (2001) for English and by Lohndal (2007) for Scandinavian.

5.4.3 English: Pesetsky & Torrego (2001)

Pesetsky & Torrego (2001) came up with a radically new account for the *that*-trace effect in English. They argue that the underlying principle for this effect can also explain other asymmetries, such as T-to-C asymmetry in English (123):

- (123) a. What did Mary buy?
 b. *What Mary bought?
 c. *Who did buy the book? [unless *did* is focused]
 d. Who bought the book? [Pesetsky & Torrego 2001: 2]

In (123a), we see that in matrix clauses with *wh*-object extraction, *do*-support occurs, while without this support the sentence becomes ungrammatical (123b). The examples (123c) and (123d) show exactly the reverse pattern for *wh*-subject extractions in matrix clauses. That is, (123c) shows that in a matrix clause in which the *wh*-subject is extracted, *do*-support renders the sentence ungrammatical. (123d) shows that this sentence without *do*-support is grammatical.

Their core claim of Pesetsky & Torrego (2001) is that the manifestation of *that* in *wh*-extraction clauses is an instance of T-to-C raising. The motivation for T to raise to C is that C bears a *uT* feature with an EPP property. Furthermore, they assume that nominative case on D is also *uT*. When the *wh*-object is extracted, T has to move to C to check the *uT* feature on C. In the case of *wh*-subject extraction however, the *wh*-subject checks this feature. There is thus no T-to-C raising and consequently no *that*.

Pesetsky and Torrego (2001) argue that these facts also explain (123). That is, in the case of a *wh*-subject, this subject checks the *uT* feature on C, and no T-to-C movement is necessary (123c/d). As English has no V-to-T movement, T-to-C movement manifests itself in the form of *do*-support. In the case of a *wh*-object then, the *uT* needs to be checked by means of T-to-C movement, and thus *do*-support is attested (123a/b). Pesetsky and Torrego (2001) thus elegantly account for both *do*-support asymmetries and the *that*-trace effect. A problematic part of this account however, is that it assumes that nominative *wh*-phrases should show a different behavior compared to non-nominative *wh*-phrases. As was revealed by the current study, Icelandic does not conform to this pattern (note also that Icelandic does show T-to-C movement). That is, both *wh*-subject extractions, such as the sentence in (124) and *wh*-object extractions, such as the sentence in (125) across the complementizer *að* are allowed without any other process taking place.

(124) Hver heldur hann [að gangi]? *Icelandic*
 Who thinks he that walks
 'Who does he think is walking?'

(125) Hvað heldur hann [að hún teikni]? *Icelandic*
 What thinks he that she draws
 'What does he think (that) she is drawing?'

The account of Pesetsky & Torrego does not predict this similar behavior of *wh*-objects and *wh*-subjects in Icelandic.

5.4.3 Scandinavian: Lohndal (2007)

Lohndal (2007) is the first and, as far as I am aware of, the only one to propose a unified account for the variation in Scandinavian with respect to *that*-trace effects. Lohndal's account is inspired by Boeckx's (2008) analysis for the difference between Standard English and some varieties of English not showing the *that*-trace effect, which was originally discussed by Sobin (1987). For example, in these varieties, sentences such as (126) are allowed.

(126) Who does he think [*that* is walking]?

Boeckx (2008) further develops the analysis that the complementizer *that* corresponds to Fin and the null complementizer to Force, as first suggested by Rizzi & Shlonsky 2007. Lohndal (2007) uses Boeckx's proposal to assume that different complementizers lexicalize different positions, and that these positions have different properties. That is, the states that complementizers that lexicalize Fin, agree in phi-features with T. In contrast, complementizers that lexicalize Force do not agree in phi-features with T. Lohndal (2007) argues that in this way we can account for the difference between Standard English that shows the *that*-trace effect and the varieties of English who do not show this effect. He states that in Standard English, *that* lexicalizes Fin. This means that an agreement relation between Fin and T is made, and according to Lohndal (2007) this means that the subject becomes frozen in place. Unfortunately, he does not elaborate on why the subject becomes frozen in place, and how this is done. In the varieties of English in which no *that*-trace effect is observed, Lohndal (2007) states that the complementizer lexicalizes Force. Therefore, no agreement is obtained between Force and T, and the subject can be freely extracted. However, this analysis lacks strength as it relies on stipulations rather than empirical evidence supporting it. For example Lohndal (2007) does not make a proposal for why the complementizer of one language lexicalizes Fin, and that of another language Fin. Moreover, it fails to explain phenomena such as expletive insertion in Dutch, as in the sentence in (127).

(127) Wie denk jij [dat *er* loopt]? *Dutch*
 Who think you that there walks
 'Who do you think is walking?'

Lohndal's (2007) account for the *that*-trace effect therefore does not capture the Dutch data.

CHAPTER 6. EXTENSION TO MAINLAND SCANDINAVIAN

6.1 Introduction

In this chapter, I will try to extend the analysis of the current study to two Mainland Scandinavian languages, namely Danish and Swedish. First, I will discuss what predictions the current analysis makes for these languages. Then, I will check these predictions against the Danish and Swedish data. The data for these languages were gathered with the same research questionnaire as the one used for English and Icelandic (see Appendix E and F for both questionnaires). For each language, I will first present the group of informants that filled in the questionnaire. Then, I will discuss the results of these questionnaires, focusing on the predictions that are made at the beginning of this chapter. Note however, that only descriptive statistics are reported to reveal the tendencies of the data. Finally, I will discuss whether and to what extent the current analysis is applicable to these two languages, based on the predictions being borne out or not.

6.2 Predictions for Mainland Scandinavian

The current analysis makes predictions concerning the behavior of other Germanic languages with respect to *wh*-extraction contexts. As extending the analysis to all other Germanic languages is beyond the scope of this thesis, the extension will be limited to two of the Mainland Scandinavian languages: Danish and Swedish¹². In Chapter 2, it was already briefly mentioned that both these languages show the same pattern as English with respect to verb movement, verbal morphology and the complementizer. That is, Danish and Swedish have no V-to-T movement, no rich verbal morphology and need an overt complementizer when a *wh*-subject is extracted. Let us consider these three statements each in turn.

Danish and Swedish both do not show V-to-T movement in embedded clauses. Consider the example sentences below.

(1) ... at Peter <ofte> havde <*ofte> læst den. *Danish*
 that Peter often had often read it
 ‘... that Peter had often read it.’

(2) ... att Jan <ofta> kisser <*ofta> Maria *Swedish*
 that Jan often kisses often Maria
 ‘... that Jan often kisses Maria.’ [Koeneman 2000: 14]

In these examples, the finite verb appears to the right of the adverb ‘often’. Assuming that this adverb is left-adjoined to VP, these examples show that Danish and Swedish has no V-to-T movement in embedded clauses.

Next, let us consider the verbal morphology of Danish and Swedish. They both show poor verbal morphology, shown for Danish in Table 1 and for Swedish in Table 2. In fact, there is only one form for all six forms. The verbal morphology of these languages are thus clear cases of poor verbal morphology.

Singular	Plural
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¹² These languages are chosen as opposed to Norwegian, as Norwegian shows so much variation that it would be as if extending it to several languages. Moreover, as was discussed in Chapter 2, in spoken language, Norwegians mostly opt for cleft constructions rather than embedded complementizer constructions. German is left out of the analysis since it has two types of embedded clauses, which makes the German data more complicated to analyse. The analysis of German data is beyond the scope of this thesis. However, future research could test whether the analysis proposed in this thesis can also account for the German data.

1 st person	baga-r	baga-r
2 nd person	baga-r	baga-r
3 rd person	baga-r	baga-r

Table 1. Danish declension system of the finite verb *baga* 'to bake'

	Singular	Plural
1 st person	baka-r	baka-r
2 nd person	baka-r	baka-r
3 rd person	baka-r	baka-r

Table 2. Swedish declension system of the finite verb *baka* 'to bake'

Finally, we have to consider the exhibition of the *that*-trace effect. As was already mentioned in Chapter 2, in the literature Danish and Swedish are reported to exhibit the *that*-trace effect. Examples of this are given in (3) and (4).

- (3) a. *Hvilken kok tror du [at __ har kogt de her grønsager]? *Danish*
 Which cook think you that __ has cooked these here vegetables
 'Which cook do you think that has cooked these vegetables?'

- b. Hvilken kok tror du [__ har kogt de her grønsager]?
 Which cook think you has cooked these here vegetables
 'Which cook do you think has cooked these vegetables?' [Vikner, 1995: 12]

- (4) a. *Vilken elev trodde ingen [att __ skulle fuska]? *Swedish*
 Which pupil thought nobody that __ would cheat
 'Which pupil didn't anyone think would cheat?'

- b. Vilken elev trodde ingen [__ skulle fuska]?
 Which pupil thought nobody __ would cheat
 'Which pupil didn't anyone think would cheat?' [Engdahl, 1982: 166]

Taken together, we can conclude that Danish and Swedish are the same as English when it comes to 1) not showing V-to-T movement in embedded clauses, 2) having poor verbal morphology, and 3) exhibiting the *that*-trace effect.

With the PR model at hand then, it is predicted that Danish and Swedish display the same patterns as English:

- (1) It is expected that in declarative clauses the overt complementizer is not obligatory but optional.
- (2) it is predicted that not only *wh*-subject clauses but also *wh*-object clauses are rated higher without the overt complementizer.
- (3) it is expected that both languages show a definiteness effect of the embedded object DP.

Furthermore, the analysis predicts that in line with English, Icelandic and Dutch, both Danish and Swedish exhibit the transitivity effect – the effect that intransitive sentences are in general rated lower than transitive sentences. In this chapter, I will check whether these predictions for Danish and Swedish are borne out.

6.3 Danish

6.3.1 Informants

101 informants completed the questionnaire. Two of the informants were excluded from the data analysis due to their mother tongue not being Danish. 77% of the informants are female and 23% are male. The mean age of the informants is 37 years old (SD : 10.7). The age range of the informants is 20-63. The informants were recruited via social media, networks of Danish linguists and Danish universities.

6.3.2 Danish results

6.3.2.1 Declarative clauses

Recall that Danish was expected to pattern with English in showing an optional complementizer in declarative test sentences. This prediction is borne out, as shown in Table 3.

	Declarative with comp	Declarative without comp
Mean	4.36	4.85
SD	1.1	0.6

Table 3. Ratings for declarative clauses with and without overt complementizer

Here we see that Danish declarative clauses are acceptable both with and without overt complementizer.

6.3.2.2 *Wh*-subject versus *wh*-object extraction

Based on the analysis of the current thesis, it was predicted that not only *wh*-subject extraction sentences but also *wh*-object extraction sentences would be better without the overt complementizer. Again the prediction holds, as can be seen in Table 4.

	Subject extraction		Object extraction	
	Overt comp	No overt comp	Overt comp	No overt comp
Mean	1.45	3.70	3.28	3.78
SD	1.2	1.6	1.7	1.7

Table 4. Ratings for subject extraction and object extraction with and without complementizer

6.3.2.3 Definiteness of the embedded object DP

The current analysis predicts that Danish shows the same definiteness effect of the embedded object DP on the rating of the transitive *wh*-subject extraction test sentences as English. That is, sentences without an overt complementizer and with an indefinite object DP are expected to get lower ratings than those sentences with a definite or pronominal object DP. This pattern is not found in the Danish data however. Moreover, we even see that the sentences with an indefinite object are rated the highest. This is shown in Table 5.

	Indefinite object	Definite unspecific object	Definite specific object	Pronoun
Mean	4.57	4.43	3.47	4.16
SD	0.9	1.1	1.6	1.2

Table 5. Ratings for transitive sentences without complementizer with different object types

These data are thus the opposite to what was predicted.

6.3.2.4 Transitivity effect

It was expected that Danish shows the same transitivity effect as English, Icelandic and Dutch in the test sentences without a complementizer. This expectation is borne out, shown in Table 6.

	Intransitive without comp	Transitive without comp
Mean	3.57	4.18
SD	1.7	1.2

Table 6. Ratings for intransitive and transitive test sentences without complementizer.

6.3.3 Evaluation of application

In the previous section, we have seen that three out of four predictions made by the analysis of this thesis are borne out in the Danish data. First, it was found that in declarative sentences the overt complementizer is optional. Second, the results revealed that not only *wh*-subject extraction sentences but also *wh*-object extraction sentences are rated better without complementizer as opposed to with complementizer. Third, a transitivity effect was found, showing that intransitive sentences without complementizer are rated lower than transitive sentences without complementizer. The only prediction that was not borne out was that of a definiteness effect of the embedded object DP. It must be noted however, that this finding is probably caused by the very different internal structure of definite DPs in Danish as opposed to English and Dutch. That is, the definite determiner in Danish is placed *after* the noun rather than before it. For example, the indefinite DP ‘a letter’ is in Danish *et brev* ‘a letter’. The definite DP ‘the letter’ is *brevet* ‘letter.the’. Although a systematic investigation into the internal structure of Danish definite DPs is necessary before making strong claims, we can tentatively suggest it is likely that the definite determiner moves *towards the interior of the DP* rather than the edge. This movement would account for the fact that the sentences with indefinite object DPs are rated higher than those with definite object DPs.

6.4 Swedish

6.4.1 Informants¹³

136 informants completed the questionnaire. Three informants were excluded because their mother tongue was not Swedish, and one because she/he did not provide information about his/her mother tongue. The mean age of the informants is 42 (*SD*: 13.6). The age range of the informants is 19-90. The informants were recruited via social media, networks of Swedish linguists and Swedish Universities.

6.4.2 Swedish results

6.4.2.1 Declarative clauses

For the declarative clauses it was predicted that Swedish would show optionality of the overt complementizer. When we consider the data, we see that this prediction is borne out. The results are presented in Table 7.

¹³ No information is available with respect to gender for the Swedish informants. This was due to the fact that one of the Swedish linguists that helped distribute the questionnaire said the binary gender division in the questionnaire would offend some of his connections. Considering the fact that I was not planning to investigate the effect of gender on the ratings, I decided it would be best to delete this question from the questionnaire.

	Declarative with comp	Declarative without comp
Mean	4.80	4.24
SD	0.5	1.0

Table 7. Ratings for declarative clauses with and without overt complementizer in Danish

These data thus show that in declarative clauses in Swedish both an overt and no overt complementizer is allowed.

6.4.2.2 *Wh*-subject versus *wh*-object extraction

Considering *wh*-subject versus *wh*-object extractions, it was expected that both sentence types are rated higher without complementizer. For the *wh*-subject extractions we indeed find that the sentences are much better without a complementizer. However, for the *wh*-object extraction sentences, we see the opposite pattern, although both sentences with and without complementizer are still grammatical. These findings are reported in Table 8.

	Subject extraction		Object extraction	
	Overt comp	No overt comp	Overt comp	No overt comp
Mean	1.59	3.39	4.66	3.41
SD	1.1	1.4	0.8	1.3

Table 8. Ratings for subject extraction and object extraction with and without complementizer

These data are thus only partly in accordance with the predictions made at the end of the previous chapter.

6.4.2.3 Definiteness of the embedded object DP

With respect to the effect of the embedded object DP, it was predicted that Swedish would show the same definiteness effect as was found in English test sentences without complementizer. When we look at the data, we see that this prediction is borne out except for the case of pronoun objects. The results are presented in Table 9.

	Indefinite object	Definite unspecific object	Definite specific object	Pronoun
Mean	3.42	3.74	3.56	3.24
SD	1.2	1.3	1.4	1.5

Table 9. Ratings for transitive sentences without complementizer with different object types

The results show that transitive test sentences without complementizer and with an indefinite object DP are rated lower than those with a definite object DP. However, the sentences with a pronoun as object DP are rated even lower than those with an indefinite object DP, which is unexpected.

6.4.2.4 Transitivity effect

Finally, we consider whether in Swedish also a transitivity effect is found (i.e. that transitive test sentences are rated higher than intransitive test sentences) in the test sentences without complementizer. The data show that this is the case, although the difference between the two categories is only marginal. The results are given in Table 10.

	Intransitive without comp	Transitive without comp
Mean	3.34	3.42
SD	1.4	1.2

Table 10. Ratings for intransitive and transitive test sentences without complementizer.

6.4.2 Evaluation of application

In the previous sections, we saw that three out of four predictions made for Swedish by the proposed analysis were borne out. First, the overt complementizer in Swedish declaratives is indeed optional. Second, intransitive sentences without complementizer and with an indefinite object DP are rated lower than those with a definite object DP. Note however that this is different from the findings for Danish transitive test sentences, which complicates a unified explanation. I leave this here for future research. Third, a (small) transitivity effect was found. Fourth, with respect to both *wh*-subject and *wh*-object extractions, it was predicted that sentences without a complementizer would be rated better than those with a complementizer. This was indeed found for the *wh*-subject extraction sentences, but not for the *wh*-object sentences. Note however that this unexpected finding is not a *problematic* finding for the current analysis within the PR model. Since in *wh*-object extraction sentences the subject remains in Spec,TP, the subject can still contribute to the descriptive content of the CP phase-interior. Therefore, the CP phase is able to refer. This finding can thus still be explained within the PR model.

In short, the application of the analysis on the Swedish successful, although the definiteness effect of the object found in Swedish is not in line with the Danish data. An in depth analysis of the internal structure of Danish and Swedish is thus needed to solve this problem. This is a topic for future studies.

CHAPTER 7. CONCLUSION

In this thesis subject/object asymmetries in *wh*-extraction contexts in Germanic were investigated. Although these asymmetries have been the research topic of many (generative) studies, there is thus far no successful analysis that can account for the cross-Germanic variation. The empirical focus of this study was on English, Icelandic and Dutch. Data was gathered for each language with the use of research questionnaires. This data collection was needed to answer the research questions formulated in this thesis, which are repeated below.

The research questions of this thesis:

- I. What is the exact variation of *wh*-subject/object asymmetries in English, Dutch and Icelandic?
- II. How can we account for the variation in subject/object asymmetries in *wh*-extraction contexts in English on the one hand and Dutch and Icelandic on the other? Can this account also be extended to other Germanic languages?
- III. How can we account for the optionality of the insertion of the expletive pronoun *er* in *wh*-subject extractions in Dutch and for the optionality of SF in *wh*-subject extractions in Icelandic?
- IV. How can we account for the definiteness effect of the embedded object on the insertion of *er* in Dutch? Do we find a similar effect in English and Icelandic, and if so, can this effect be explained in the same way for all three languages?

With the data that were gathered using the research questionnaires, we can answer the first research question. The exact variation of *wh*-subject/object asymmetries in English, Dutch and Icelandic is as follows. In English, extractions out of an embedded clause without the complementizer *that* are rated higher than those with this complementizer. This is both the case for *wh*-subject extraction sentences and *wh*-object extraction sentences. Transitive sentences are rated higher than intransitive sentences. For transitive sentences, it is the case that *wh*-extraction is easier when the direct object is a definite DP object or a pronominal DP object, while this extraction is less acceptable with an indefinite object. In Dutch, the complementizer is always needed in case of extractions out of an embedded clause. This is both the case for *wh*-subject and *wh*-object extraction sentences. Transitive sentences with *er* are rated lower than without *er*, whereas in intransitive sentences this is reversed. In transitive sentences with *er*, those sentences with an indefinite object are rated higher than those with a definite or pronominal object. In Icelandic, *wh*-extraction sentences with the complementizer are rated higher than those sentences without complementizer. This holds for *wh*-subject and *wh*-object extractions. Transitive sentences are rated higher than intransitive sentences. Sentences with an inserted expletive or a Stylistically Fronted item are rated lower than those sentences without either of the two.

The results of the research questionnaires were interpreted within the Phase Reference (PR) model of Hinzen and colleagues (Arsenijević & Hinzen (2010); Sheehan & Hinzen 2011; Hinzen 2012; Hinzen & Sheehan 2013). This model assumes that the semantic notion of reference is derived by grammar. The three phases of Minimalism, DP, *v*P and CP, correspond to the three basic notions of human language reference, namely objects, events and propositions. All three phases show a similar distinction in the degree of reference of that phase. On the one hand, grammar allows maximally unspecific reference and on the other maximally specific/rigid reference. This degree of reference is determined by the phase-interior and the phase-edge, as illustrated in (1).

(1) [EDGE [INTERIOR]]

For maximally specific reference, all material is moved to the phase edge and the phase interior is left empty. For maximally unspecific reference, the edge of the phase is underspecified or empty, and the degree of reference of the phase is determined by the (descriptiveness of) the phase-interior. In between these two ends of the scale there is room for both referring strategies. The data of English, Icelandic and Dutch were accounted for with an analysis within this PR model.

As an answer to the first part of the second research questionnaire we can state that we can account for the variation in subject/object asymmetries in *wh*-extraction contexts in English on the one hand and Dutch and Icelandic on the other by interpreting this variation within the PR model. By assuming that the *wh*-extraction sentences have an interrogative indefinite CP which depends on its degree of reference on the descriptiveness of its phase-interior – TP – it was shown that the overt complementizer in Icelandic and Dutch is possible due to V-to-T movement and rich verbal morphology in Icelandic and V-to-T movement and expletive insertion in Dutch. Since English has neither V-to-T movement, rich verbal morphology nor the possibility of inserting an expletive, it was argued that English opts for a different complementizer that has an inherent link with the extracted subject. This is the English agreeing null complementizer. In this way, the variation in subject/object asymmetries between English on the one hand and Icelandic and Dutch on the other, can be accounted for. In Chapter 6, the new analysis was also applied to two Mainland Scandinavian languages. This revealed that the analysis of this thesis could successfully be extended to subject/object asymmetries in Danish and Swedish.

Concerning the third research question, I have argued that there are two Dutch grammars. One grammar allows the *wh*-subject to move directly to Spec,CP: in this grammar expletive *er* is attested – which is inserted to contribute information about the degree of reference of the extracted subject. The other grammar does not allow the *wh*-subject to move directly to Spec,CP, rather, the *wh*-subject has to move to Spec,TP first. In this grammar *er* is not attested since the position for *er* (Spec,CP) is already filled by a copy of the *wh*-subject. These two strategies are employed by the two groups of Dutch speakers (one needing *er* in *wh*-subject extractions and one not needing *er*) were explained.

The results of the Icelandic research questionnaire revealed that there is no optionality of SF, rather SF seems not to be an option anymore in *wh*-subject extraction contexts. This was explained by assuming, in line with Franco (2009), that a SF item targets a position in the CP-layer, Spec,FinP. As the C of an interrogative indefinite CP phase must be underspecified, i.e. its phase-edge must be empty, it is not surprising within the PR model that SF is not an option.

The fact that *er* in Dutch extraction contexts is most needed with an indefinite object DP and the least with a pronoun object DP can be explained with the PR model analysis as well. Since indefinite object DPs do not move to the edge of *v*P, whereas definite and pronoun object DPs do, the degree of reference of *v*P, and therefore also CP, is higher with definite and pronoun object DPs than with indefinite object DPs. This means that there is only need for *er* in the case of indefinite object DPs – therefore answering the first part of the third research question. With respect to the second part of this question, it can be said that English shows a definiteness effect of the embedded object DP as well, but Icelandic does not. Within the PR model this is not surprising: Icelandic has V-to-T movement and rich morphology, and thus does not have to rely on the degree of reference of the lower phases to make sure that the interrogative indefinite CP can refer.

In conclusion, we can state that this new analysis of subject/object asymmetries in *wh*-extraction contexts within the PR model has brought us very fruitful insights in both the phenomenon itself and in the role of the reference of phases in syntax in general. My hope is that this model will be expanded as to make more contributions to syntactic research.

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Appendix A

VRAGENLIJST NEDERLANDSE ALGEMENE VERSIE

Introductietekst

Beste deelnemer,

Hartelijk dank voor uw deelname aan dit onderzoek.

Zodadelijk krijgt u een aantal zinnen te zien. Het is de bedoeling dat u van iedere zin aangeeft of u die zin ook zo zou zeggen. Dit doet u aan de hand van een schaal, waarbij 1 staat voor ‘Deze zin zou ik helemaal niet zo zeggen’ en 5 voor ‘Deze zin zou ik ook zo zeggen’. U kunt de zinnen ook een 2, 3, of 4 toekennen. Probeer iedere zin hardop te zeggen en dan direct uw keus aan te klikken; uw eerste reactie is voor ons het belangrijkste. Er zijn geen goede of slechte antwoorden; het gaat er enkel om hoe u de zin vindt klinken.

Het invullen van de vragenlijst duurt ongeveer 10-15 minuten. Waarschijnlijk is het invullen een niet heel interessante taak, maar uw reacties zijn desondanks erg belangrijk voor ons onderzoek. Wij hopen dan ook dat u de tijd neemt om de gehele vragenlijst in te vullen.

Ik ben zeer blij dat u meedoet aan mijn onderzoek!

Cora Pots

Algemeen

Declaratieve zinnen

- 1) Ik denk dat hij slaapt
- 2) Ik denk dat hij een brief schrijft
- 3) Ik denk dat hij de brief schrijft
- 4) Ik denk dat hij hem plaagt

Subject extractie - intransitief

- 1) Wie denkt hij dat er slaapt?
- 2) Wie denkt hij dat er loopt?
- 3) Welke man denkt hij dat er liegt?
- 4) Welke man denkt hij dat er trouwt?

Subject extractie – transitief – indefiniete NP

- 5) Wie denkt hij dat er een brief schijft?
- 6) Welke man denkt hij dat er een huis bouwt?

Subject extractie –transitief – definiete NP

- 7) Wie denkt hij dat de brief schrijft?
- 8) Wie denk hij dat de paus heeft ontmoet?
- 9) Welke man denkt hij dat het huis bouwt?
- 10) Welke man denkt hij dat de bijbel koopt?

Subject extractie – transitief – pronomen

- 11) Wie denkt hij dat hem plaagt?
- 12) Welke man denk hij dat hem haat?

Object extractie - transitief

- 13) Wat denkt hij dat zij schrijft?
- 14) Wat denkt hij dat zij bouwt?

15) Wat denkt hij dat zij tekent?

16) Wat denkt hij dat zij kookt?

-Al deze zinnen precies hetzelfde maar dan zonder overt complementizer

-Voor Deens: met en zonder 'der'+at voor subject extracties

-Voor Zweeds: voor objectextractie: met 'som', 'att' en zonder

Adverb effect

Intransitief

1) Wie denkt hij dat er daar slaapt?

2) Wie denkt hij dat er ondanks de kou loopt?

3) Welke man denkt hij dat er makkelijk liegt?

4) Welke man denkt hij dat er over een paar dagen trouwt?

Transitief – indefiniet object

1) Wie denkt hij dat gisteren een boek heeft geschreven?

2) Wie denkt hij dat ondanks de crisis een huis heeft gebouwd?

3) Wie denkt hij dat snel een bloem heeft getekend?

4) Wie denkt hij dat voor zijn eigen plezier een boek heeft geschreven?

Transitief – definiert object

1) Wie denkt hij dat gisteren het boek heeft geschreven?

2) Wie denkt hij dat ondanks de crisis het huis heeft gebouwd?

3) Wie denkt hij dat snel de bloem heeft getekend?

4) Wie denkt hij dat voor zijn eigen plezier het boek heeft geschreven?

Sectie IJslands

Subject extractie - Pað-insertie

1) Wie denkt hij dat er heeft geslapen?

2) Wie denkt hij dat er heeft gelopen?

Subject extractie - Pað-insertie passieve zin

5) Wat denkt hij dat er is geschreven?

6) Wat denkt hij dat er is gebouwd?

Object extractie - Pað-insertie

9) Wat denkt hij dat er hij heeft geschreven?

10) Wat denkt hij dat er hij heeft gebouwd?

-Met en zonder að

Subject extractie – SF – gefronte element is onderstreept

9) Wie denkt hij dat geschreven heeft een boek?

10) Wie denkt hij dat gebouwd heeft een huis?

13) Wie denkt hij dat niet een boek heeft geschreven?

14) Wie denkt hij dat niet een huis heeft gebouwd?

Object extractie hoeft niet getest te worden – voor SF is een subject gap nodig

Sectie Noors

Subject extractie – complementizer 'som'

Object extractie – complementizer 'som'

-Precies dezelfde zinnen als in de algemene sectie maar dan met 'som'

Sectie Deens

Subject extractie - der-insertie

- 1) Wie denkt hij dat er heeft geslapen?
- 2) Wie denkt hij dat er heeft gelopen?

Subject extractie-passieve zin-der-insertie

- 3) Wat denkt hij dat er is geschreven?
- 4) Wat denkt hij dat er is gebouwd?

Object extractie - der-insertie

- 5) Wat denkt hij dat er hij heeft geschreven?
- 6) Wat denkt hij dat er hij heeft gebouwd?

-Met en zonder at

Sectie Zweeds

Object extractie – met ‘som’

Sectie Duits

Subject extractie – vooropplaatsing van datieve experiencers

- 5) Wie denkt hij dat bij de bushalte aan het wachten is?
- 6) Wie denkt hij dat met de trein gegaan is?
- 7) Wie denkt hij dat op het feest geweest is?
- 8) Wie denkt hij dat uit het huis gegaan is?

Subject extractie – vooropplaatsing participle

- 9) Wie denkt hij dat slapen had moeten?
- 10) Wie denkt hij dat lopen had moeten?
- 11) Wie denkt hij dat liggen had moeten?
- 12) Wie denkt hij dat trouwen had moeten?

Fillers

- 1) Hoeveel dagen in de week gaat hij naar school?
- 2) Waarom wil hij een huis bouwen?
- 3) Welke tekeningen heeft hij gemaakt?
- 4) Wanneer gaat hij beginnen met koken?
- 5) Van wat voor maaltijden houdt hij het meest?
- 6) Wat voor opleiding doet hij nu?
- 7) Waarom wil hij niet slapen?
- 8) Hoeveel kost deze tafel?
- 9) Van wie moet hij naar huis gaan?
- 10) Welk huis is van hem?
- 11) Wie gaat er vandaag met hem mee?
- 12) Wanneer gaat hij op vakantie?
- 13) Waarom wil hij niet helpen met koken?
- 14) Wie willen graag met de bus gaan?
- 15) Op welke dagen werkt hij het liefst?
- 16) Hoeveel huiswerk heeft hij vandaag?

Gegevens participant

- 1) Wat is uw leeftijd?
- 2) Wat is uw geslacht? -man -vrouw
- 3) Waar bent u geboren?
- 4) Waar woont u?
- 5) Wat is uw beroep?
- 6) Wat is uw hoogst afgeronde opleiding?
- 7) Wat is uw moedertaal/moedertalen?
- 8) Spreekt u nog andere talen dan uw moedertaal, zo ja, welke?
- 9) Spreekt u een dialect? Zo ja, welke?
- 10) Heeft u wel eens langer dan een jaar in het buitenland gewoond? Zo ja, hoeveel jaar: ___ In welk land: ___

Extra vragen voor Noorse sprekers:

- 11) Hoeveel jaren van uw jeugd (tot de leeftijd van 18 jaar) heeft u in uw geboorteplaats gewoond?
- 12) Heeft u na de leeftijd van 18 jaar langere tijd buiten uw woonplaats gewoond? Zo ja, hoeveel jaar?
- 13) Wanneer spreekt u uw dialect? - thuis; - met familie; - op werk; - met vrienden/mensen uit de buurt; - anders, namelijk: ___

Eindpagina

Bedankt voor het afmaken van de vragenlijst!

Als u vragen heeft met betrekking tot deze vragenlijst, kunt u ons een e-mail sturen naar het volgende e-mail adres: c.pots@uu.nl

Appendix B

ENGLISH QUESTIONNAIRE

Introductietekst

Dear participant,

Thank you very much for participating in this study.

Shortly, you will see a number of sentences. We want to ask you to indicate for each sentence whether you would say this sentence in the same way as it is displayed. Please do this using a 1 to 5 scale. 1 stands for 'I would say this sentence in an entirely different way' and 5 for 'I would say this sentence exactly in this way'. You can also rate sentences with a 2, 3 or 4. Try to say each sentence out loud and then rate the sentence with a number directly; your first reaction is the most important one. There are no right or wrong answers; the only thing that is important is your judgment about how the sentence sounds.

Filling in the questionnaire will take 10-15 minutes. It might not be the most interesting questionnaire for those who fill it in, but your responses are very important for our research. We hope you are willing to finish it.

We are very grateful that you are willing to participate in this study!

Cora Pots

Testitems

Algemeen – met complementizer

Declaratieve zinnen

1) I think that he is sleeping.

Ik denk dat hij slaapt

2) I think that he is writing a letter.

Ik denk dat hij een brief schrijft

3) I think that he is writing the letter.

Ik denk dat hij de brief schrijft

4) I think that he is teasing him.

Ik denk dat hij hem plaagt

Subject extractie - intransitief

1) Who does he think that is sleeping?

Wie denkt hij dat er slaapt?

2) Who does he think that is walking?

Wie denkt hij dat er loopt?

3) Which man does he think that is lying?

Welke man denkt hij dat er liegt?

- 4) Which man does he think that is getting married?
Welke man denkt hij dat er trouwt?

Subject extractie – transitief – indefiniete NP

- 5) Who does he think that is writing a letter?
Wie denkt hij dat er een brief schijft?
- 6) Which man does he think that is building a house?
Welke man denkt hij dat er een huis bouwt?

Subject extractie – transitief – definiete NP

- 7) Who does he think that is writing the letter?
Wie denkt hij dat de brief schrijft?
- 8) Who does he think that has met the pope?
Wie denk hij dat de paus heeft ontmoet?
- 9) Which man does he think that is building the house?
Welke man denkt hij dat het huis bouwt?
- 10) Which man does he think that is buying the bible?
Welke man denkt hij dat de bijbel koopt?

Subject extractie – transitief – pronomen

- 11) Who does he think that is teasing him?
Wie denkt hij dat hem plaagt?
- 12) Which man does he think that hates him?
Welke man denk hij dat hem haat?

Object extractie - transitief

- 13) What does he think that she is writing?
Wat denkt hij dat zij schrijft?
- 14) What does he think that she is building?
Wat denkt hij dat zij bouwt?
- 15) What does he think that she is drawing?
Wat denkt hij dat zij tekent?
- 16) What does he think that she is cooking?
Wat denkt hij dat zij kookt?

Algemeen – zonder complementizer

Declaratieve zinnen

- 1) I think he is sleeping.
Ik denk dat hij slaapt
- 2) I think he is writing a letter.
Ik denk dat hij een brief schrijft
- 3) I think he is writing the letter.
Ik denk dat hij de brief schrijft
- 4) I think he is teasing him.
Ik denk dat hij hem plaagt

Subject extractie - intransitief

- 1) Who does he think is sleeping?
Wie denkt hij dat er slaapt?
- 2) Who does he think is walking?
Wie denkt hij dat er loopt?
- 3) Which man does he think is lying?
Welke man denkt hij dat er liegt?
- 4) Which man does he think is getting married?
Welke man denkt hij dat er trouwt?

Subject extractie – transitief – indefiniete NP

- 5) Who does he think is writing a letter?
Wie denkt hij dat er een brief schijft?
- 6) Which man does he think is building a house?
Welke man denkt hij dat er een huis bouwt?

Subject extractie – transitief – definiete NP

- 7) Who does he think is writing the letter?
Wie denkt hij dat de brief schrijft?
- 8) Who does he think has met the pope?
Wie denk hij dat de paus heeft ontmoet?
- 9) Which man does he think is building the house?
Welke man denkt hij dat het huis bouwt?
- 10) Which man does he think is buying the bible?
Welke man denkt hij dat de bijbel koopt?

Subject extractie – transitief – pronomen

- 11) Who does he think is teasing him?
Wie denkt hij dat hem plaagt?
- 12) Which man does he think hates him?
Welke man denk hij dat hem haat?

Object extractie - transitief

- 13) What does he think she is writing?
Wat denkt hij dat zij schrijft?
- 14) What does he think she is building?
Wat denkt hij dat zij bouwt?
- 15) What does he think she is drawing?
Wat denkt hij dat zij tekent?
- 16) What does he think she is cooking?
Wat denkt hij dat zij kookt?

Adverb effect

Intransitief

- 1) Who does he think that over there sleeps?
Wie denkt hij dat er daar slaapt?
- 2) Who does he think that despite the cold walks?

Wie denkt hij dat er ondanks de kou loopt?

3) Which man does he think that easily lies?

Welke man denkt hij dat er makkelijk liegt?

4) Which man does he think that in a few days is getting married?

Welke man denkt hij dat er over een paar dagen trouwt?

Transitief - indefiniet object

1) Who does he think that yesterday has written a book?

Wie denkt hij dat gisteren een boek heeft geschreven?

2) Who does he think that despite the crisis has built a house?

Wie denkt hij dat ondanks de crisis een huis heeft gebouwd?

3) Which man does he think that quickly has drawn a flower?

Wie denkt hij dat snel een bloem heeft getekend?

4) Which man does he think that for his own pleasure has written a book?

Wie denkt hij dat voor zijn eigen plezier een boek heeft geschreven?

Transitief – definiert object

1) Who does he think that yesterday has written the book?

Wie denkt hij dat gisteren het boek heeft geschreven?

2) Who does he think that despite the crisis has built the house?

Wie denkt hij dat ondanks de crisis het huis heeft gebouwd?

3) Which man does he think that quickly has drawn the flower?

Wie denkt hij dat snel de bloem heeft getekend?

4) Which man does he think that for his own pleasure has written the book?

Wie denkt hij dat voor zijn eigen plezier het boek heeft geschreven?

Fillers

1) How many days in the week does he go to school?

Hoeveel dagen in de week gaat hij naar school?

2) Why does he want to build a house?

Waarom wil hij een huis bouwen?

3) Which drawings has he made?

Welke tekeningen heeft hij gemaakt?

4) When will he begin cooking?

Wanneer gaat hij beginnen met koken?

5) What kind of meals does he like the most?

Van wat voor maaltijden houdt hij het meest?

6) What is he studying at the moment?

Wat voor opleiding doet hij nu?

7) Why doesn't he want to sleep?

Waarom wil hij niet slapen?

8) How much does this table cost?

Hoeveel kost deze tafel?

9) Who claims he must go home?

Van wie moet hij naar huis gaan?

10) Which house is his?

Welk huis is van hem?

11) Who will accompany him today?

Wie gaat er vandaag met hem mee?

12) When will he go on holiday?

Wanneer gaat hij op vakantie?

Gegevens participant

1) What is your age?

2) Are you: -male -female

3) What is your place of birth?

4) Where do you live?

5) What is your current profession?

6) What is your highest level of education?

7) What is your native language/languages?

8) Do you speak other languages aside from your native language? If yes, which one(s)?

9) Do you speak a dialect? If yes, which one(s)?

10) Have you lived abroad for a period longer than a year? If yes, how many years? In which country?

Eindpagina

Thank you very much!

If you have any questions regarding this questionnaire, you can send an e-mail to the following e-mail address: c.pots@uu.nl

Appendix C

ICELANDIC QUESTIONNAIRE

Introductietekst

Ágæti þátttakandi!

Kærar þakkir fyrir að leggja rannsókninni lið.

Innan skamms verða þér sýndar nokkrar setningar. Ætlunin er að þú gefir til kynna við hverja setningu hvort þú myndir líka segja setninguna á þann hátt. Þú munt nota skala á bilinu 1-5 þar sem 1 merkir 'Þessa setningu myndi ég alls ekki segja svona' og 5 merkir 'Þessa setningu myndi ég líka segja svona'. Setningunum geturðu líka gefið 2, 3, eða 4.

Reyndu að segja hverja setningu upphátt og velja strax tiltekið gildi; þín fyrstu viðbrögð eru mikilvægust fyrir okkur. Það eru engin rétt eða röng svör; þetta snýst eingöngu um hvernig þér finnst setningin hljóma.

Það tekur 10-15 mínútur að svara spurningalistanum. Þeim sem fylla spurningalistann út finnst hann ef til vill ekkert sérstaklega áhugaverður, en svörin eru mjög mikilvæg fyrir rannsóknir okkar. Við vonum að þú hafir tök á að klára hann.

Ég er mjög glöð yfir að þú skulir taka þátt í rannsókninni minni!

Cora Pots

Testitems

Algemeen – met complementizer

Declaratieve zinnen

1) Ég held að hann sofi.

Ik denk dat hij slaapt

2) Ég held að hann skrifi bréf.

Ik denk dat hij een brief schrijft

3) Ég held að hann skrifi bréfið.

Ik denk dat hij de brief schrijft

4) Ég held að hann stríði honum.

Ik denk dat hij hem plaagt

Subject extractie - intransitief

1) Hver heldur hann að sofi?

Wie denkt hij dat er slaapt?

2) Hver heldur hann að gangi?

Wie denkt hij dat er loopt?

3) Hvaða maður heldur hann að ljúgi?

Welke man denkt hij dat er liegt?

4) Hvaða maður heldur hann að giftist?

Welke man denkt hij dat er trouwt?

Subject extractie – transitief – indefiniete NP

5) Hver heldur hann að skrifi bréf?

Wie denkt hij dat er een brief schijft?

6) Hvaða maður heldur hann að smíði hús?

Welke man denkt hij dat er een huis bouwt?

Subject extractie – transitief – definiete NP

7) Hver heldur hann að skrifi bréfið?

Wie denkt hij dat de brief schrijft?

8) Hver heldur hann að hafi hitt páfínn?

Wie denk hij dat de paus heeft ontmoet?

9) Hvaða maður heldur hann að smíði húsið?

Welke man denkt hij dat het huis bouwt?

10) Hvaða maður heldur hann að kaupi biblíuna?

Welke man denkt hij dat de bijbel koopt?

Subject extractie – transitief – pronomen

11) Hver heldur hann að stríði honum?

Wie denkt hij dat hem plaagt?

12) Hvaða maður heldur hann að hati hann?

Welke man denk hij dat hem haat?

Object extractie - transitief

13) Hvað heldur hann að hún skrifi?

Wat denkt hij dat zij schrijft?

14) Hvað heldur hann að hún smíði?

Wat denkt hij dat zij bouwt?

15) Hvað heldur hann að hún teikni?

Wat denkt hij dat zij tekent?

16) Hvað heldur hann að hún eldi?

Wat denkt hij dat zij kookt?

Algemeen – zonder complementizer

Declaratieve zinnen

1) Ég held hann sofi.

Ik denk dat hij slaapt

2) Ég held hann skrifi bréf.

Ik denk dat hij een brief schrijft

3) Ég held hann skrifi bréfið.

Ik denk dat hij de brief schrijft

4) Ég held hann stríði honum.

Ik denk dat hij hem plaagt

Subject extractie - intransitief

1) Hver heldur hann sofi?

Wie denkt hij dat er slaapt?

2) Hver heldur hann gangi?

Wie denkt hij dat er loopt?

3) Hvaða maður heldur hann ljúgi?

Welke man denkt hij dat er liegt?

4) Hvaða maður heldur hann giftist?

Welke man denkt hij dat er trouwt?

Subject extractie – transitief – indefiniete NP

5) Hver heldur hann skrifi bréf?

Wie denkt hij dat er een brief schijft?

6) Hvaða maður heldur hann smíði hús?

Welke man denkt hij dat er een huis bouwt?

Subject extractie – transitief – definiete NP

7) Hver heldur hann skrifi bréfið?

Wie denkt hij dat de brief schrijft?

8) Hver heldur hann hafi hitt páfínn?

Wie denk hij dat de paus heeft ontmoet?

9) Hvaða maður heldur hann smíði húsið?

Welke man denkt hij dat het huis bouwt?

10) Hvaða maður heldur hann kaupi biblíuna?

Welke man denkt hij dat de bijbel koopt?

Subject extractie – transitief – pronomen

11) Hver heldur hann stríði honum?

Wie denkt hij dat hem plaagt?

12) Hvaða maður heldur hann hati hann?

Welke man denk hij dat hem haat?

Object extractie - transitief

13) Hvað heldur hann hún skrifi?

Wat denkt hij dat zij schrijft?

14) Hvað heldur hann hún smíði?

Wat denkt hij dat zij bouwt?

15) Hvað heldur hann hún teikni?

Wat denkt hij dat zij tekent?

16) Hvað heldur hann hún eldi?

Wat denkt hij dat zij kookt?

Adverb effect

Intransitief

- 1) Hver heldur hann að þar sofi?
Wie denkt hij dat er daar slaapt?
- 2) Hver heldur hann að þrátt fyrir kuldann gangi?
Wie denkt hij dat er ondanks de kou loopt?
- 3) Hvaða maður heldur hann að auðveldlega ljúgi?
Welke man denkt hij dat er makkelijk liegt?
- 4) Hvaða maður heldur hann að eftir nokkra daga giftist?
Welke man denkt hij dat er over een paar dagen trouwt?

Transitief

- 1) Hver heldur hann að í gær hafi lesið bók?
Wie denkt hij dat gisteren een boek heeft geschreven?
- 2) Hver heldur hann að þrátt fyrir kreppuna hafi smíðað hús?
Wie denkt hij dat ondanks de crisis een huis heeft gebouwd?
- 3) Hver heldur hann að fljótt hafi teiknað blóm?
Wie denkt hij dat snel een bloem heeft getekend?
- 4) Hver heldur hann að gamni sínu hafi skrifað bók?
Wie denkt hij dat voor zijn eigen plezier een boek heeft geschreven?

Sectie IJslands

Met complementizer

Subject extractie - Pað-insertie

- 1) Hver heldur hann að það hafi sofið?
Wie denkt hij dat er heeft geslapen?
- 2) Hver heldur hann að það hafi gengið?
Wie denkt hij dat er heeft gelopen?

Subject extractie - Pað-insertie passieve zin

- 5) Hvað heldur hann að það sé skrifað?
Wat denkt hij dat er is geschreven?
- 6) Hvað heldur hann að það sé smíðað?
Wat denkt hij dat er is gebouwd?

Object extractie - Pað-insertie

- 9) Hvað heldur hann að það hann hefur skrifað?
Wat denkt hij dat er hij heeft geschreven?
- 10) Hvað heldur hann að það hann hafi smíðað?
Wat denkt hij dat er hij heeft gebouwd?

Zonder complementizer

Subject extractie - Pað-insertie

- 1) Hver heldur hann það hafi sofið?
Wie denkt hij dat er heeft geslapen?
- 2) Hver heldur hann það hafi gengið?

Wie denkt hij dat er heeft gelopen?

Subject extractie - Það-insertie passieve zin

5) Hvað heldur hann það sé skrifað?

Wat denkt hij dat er is geschreven?

6) Hvað heldur hann það sé smíðað?

Wat denkt hij dat er is gebouwd?

Object extractie - Það-insertie

9) Hvað heldur hann það hann hefur skrifað?

Wat denkt hij dat er hij heeft geschreven?

10) Hvað heldur hann það hann hafi smíðað?

Wat denkt hij dat er hij heeft gebouwd?

Subject extractie – SF – gefronte element is onderstreept

9) Hver heldur hann að skrifað hafi bók?

Wie denkt hij dat geschreven heeft een boek?

10) Hver heldur hann að smíðað hafi hús?

Wie denkt hij dat gebouwd heeft een huis?

13) Hver heldur hann að ekki hafi skrifað bók?

Wie denkt hij dat niet een boek heeft geschreven?

14) Hver heldur hann að ekki hafi smíðað hús?

Wie denkt hij dat niet een huis heeft gebouwd?

Fillers

1) Hve marga daga í viku fer hann í skóla?

Hoeveel dagen in de week gaat hij naar school?

2) Hvers vegna vill hann byggja hús?

Waarom wil hij een huis bouwen?

3) Hvaða teikningar hefur hann gert?

Welke tekeningen heeft hij gemaakt?

4) Hvenær ætlar hann að byrja að elda?

Wanneer gaat hij beginnen met koken?

5) Hvaða máltíð heldur hann mest upp á?

Van wat voor maaltijden houdt hij het meest?

6) Í hvaða námi er hann núna?

Wat voor opleiding doet hij nu?

7) Af hverju vill hann ekki sofa?

Waarom wil hij niet slapen?

8) Hvað kostar þetta borð?

Hoeveel kost deze tafel?

9) Hver biður hann að fara heim?

Van wie moet hij naar huis gaan?

10) Hvaða hús á hann?

Welk huis is van hem?

11) Hver fer með honum í dag?

Wie gaat er vandaag met hem mee?

12) Hvenær fer hann í frí?

Wanneer gaat hij op vakantie?

Gegevens participant

1) Hvað ertu gamall/gömul?

2) Hvers kyns ertu? -karl -kona

3) Hvar fæddistu?

4) Hvar býrðu?

5) Hvað starfarðu?

6) Hver er mesta menntun sem þú hefur lokið?

7) Hvaða mál er/eru móðurmál þitt/þín?

8) Talarðu önnur mál en móðurmál þitt, og ef svo er, hvaða?

9) Talarðu einhverja mállýsku? Ef svo er, hvaða?

10) Hefurðu búið lengur en eitt ár erlendis? Ef svo er, hve mörg ár: ___ Í hvaða landi: ___

Eindpagina

Takk fyrir að ljúka könnuninni okkar!

Ef spurningar vakna í tengslum við spurningalistann geturðu sent okkur tölvupóst á eftirfarandi netfang: c.pots@uu.nl

Appendix D

DUTCH QUESTIONNAIRE

Introductietekst

Bedankt dat u mee wilt doen! Dit is een taalkundig onderzoek naar mogelijke formuleringen van vragen. U krijgt 86 zinnen te zien. Sommige zinnen zullen natuurlijker aandoen dan andere. Wij willen u vragen om alle zinnen te beoordelen. U kunt kiezen uit waardes tussen 1 en 5, waarbij 1 betekent "Zou ik nooit zo zeggen" en 5 "Prima, zo zou ik het ook zeggen"; 2, 3, en 4 liggen hier tussen in.

Uw antwoord is sowieso goed. U kunt het niet verkeerd doen. Nogmaals bedankt voor uw hulp!

Testitems

All testitems are given here, however, only the items with an embedded clause are used in the data analysis of the current study (see Chapter 3 for the methodology).

Matrix zinnen

Testzinnen met er zonder bijwoord

- 1) Wie las er een boek?
- 2) Wie zocht er haar?
- 3) Wie schreef er een verhaal?
- 4) Wie belde er jou?
- 5) Wie at er het koekje?
- 6) Wat pakt hij er altijd?
- 7) Wie las er het boek?
- 8) Wie spijbelde er?
- 9) Wie schreef er het verhaal?
- 10) Wie werkte er?
- 11) Wie juichte er?
- 12) Wie at er een koekje?
- 13) Wie kookt er vanavond een maaltijd?

Testzinnen met er met bijwoord

- 1) Wie valt er vaak?
- 2) Wie lacht er graag?
- 3) Wie huilt er snel?
- 4) Wie floot er gisteren een liedje?
- 5) Wie floot er gisteren het liedje?
- 6) Wie kookt er vanavond de maaltijd?
- 7) Wie smeert er dagelijks de boterham?

Testzinnen zonder er zonder bijwoord

- 1) Wie las een boek?
- 2) Wie juichte?
- 3) Wie schreef het verhaal?

- 4) Wie las het boek?
- 5) Wie werkte?
- 6) Wie denk je dat luistert?
- 7) Wie schreef een verhaal?
- 8) Wie at het koekje?
- 9) Wie at een koekje?
- 10) Wie riep jou?
- 11) Wie zocht haar?
- 12) Wie spijbelde?
- 13) Wie belde jou?

Testzinnen zonder er met bijwoord

- 1) Wie lacht graag?
- 2) Wie floot gisteren het liedje?
- 3) Wie smeert dagelijks de boterham?
- 4) Wie kookt vanavond de maaltijd?
- 5) Wie kookt vanavond een maaltijd?
- 6) Wie floot gisteren een liedje?
- 7) Wie smeert dagelijks een beschuitje?
- 8) Wie valt vaak?

Ingebedde zinnen

Testzinnen met er zonder bijwoord

- 1) Wie denk je dat er haar plaagt?
- 2) Wie denk je dat er luistert?
- 3) Wie denk je dat er het cadeau geeft?
- 4) Wie denk je dat er de portemonnee vond?
- 5) Wie denk je dat er een bos bloemen koopt?
- 6) Wie denk je dat er schaatst?
- 7) Wie denk je dat er een cadeau geeft?
- 8) Wie denk je dat er bloost?
- 9) Wie denk je dat er een portemonnee vond?
- 10) Wie denk je dat er hem slaat?
- 11) Wie denk je dat er mij haat?
- 12) Wie denk je dat er de bos bloemen koopt?

Testzinnen met er met bijwoord

- 1) Wie denk je dat er meestal een was ophangt?
- 2) Wie denk je dat er geregeld de wedstrijd verliest?
- 3) Wie denk je dat er vaak de taart bakt?
- 4) Wie denk je dat er vaak struikelt?
- 5) Wie denk je dat er meestal de was ophangt?
- 6) Wie denk je dat er nooit fietst?
- 7) Wie denk je dat er geregeld een wedstrijd verliest?
- 8) Wie denk je dat er vaak een taart bakt?
- 9) Wie denk je dat er morgen komt?

Testzinnen zonder er zonder bijwoord

- 1) Wie denk je dat mij haat?
- 2) Wie denk je dat een portemonnee vond?
- 3) Wie denk je dat bloost?
- 4) Wie denk je dat het cadeau geeft?
- 5) Wie denk je dat hem slaat?
- 6) Wie denk je dat haar plaagt?
- 7) Wie denk je dat een bos bloemen koopt?
- 8) Wie denk je dat schaatst?
- 9) Wie denk je dat de portemonnee vond?
- 10) Wie denk je dat de bos bloemen koopt?
- 11) Wie denk je dat een cadeau geeft?

Testzinnen zonder er met bijwoord

- 1) Wie denk je dat morgen komt?
- 2) Wie denk je dat vaak de taart bakt?
- 3) Wie denk je dat geregeld een wedstrijd verliest?
- 4) Wie denk je dat geregeld de wedstrijd verliest?
- 5) Wie denk je dat meestal een was ophangt?
- 6) Wie denk je dat nooit fietst?
- 7) Wie denk je dat vaak een taart bakt?
- 8) Wie denk je dat meestal de was ophangt?
- 9) Wie denk je dat vaak struikelt?

Fillers

- 1) Wat tekende hij er gisteren?
- 2) Wat pakt hij er altijd?

Gegevens participant

- 1) Leeftijd:
- 2) Geslacht:
- 3) Waar bent u opgegroeid?
- 4) Heeft u wel eens langer dan één jaar ergens anders gewoond?
- 5) Zo ja, waar?
- 6) Moedertaal:
- 7) Spreekt u een dialect?
- 8) Zo ja, welk?

Appendix E

DANISH QUESTIONNAIRE

Introductietekst

Kære deltager,

Tusind tak for din deltagelse i denne undersøgelse!

Du kommer til at se nogle sætninger og så må du angive i hvilket omfang du mener, at du ville sige denne sætning på en skala fra 1 til 5. 1 er lig med 'Denne sætning ville jeg aldrig sige' og 5 med 'Denne sætning ville jeg også sige'. Du kan også sæt kryds i 2, 3 eller 4.

Prøv at sige hver sætning højt og sæt kryds i kassen som du synes passer bedst til sætningen. Der findes ikke rigtige eller forkerte svar; det handler om hvordan du synes at sætningen lyder.

Det tager 10-15 minutter at udfylde spørgeskemaet. Måske er det ikke det mest interessante spørgeskema at udfylde, men dine svar er meget vigtige for vores forskning. Vi håber, at du kan hjælpe os ved at udfylde hele spørgeskemaet!

Cora Pots

Testitems

Algemeen – met complementizer

Declaratieve zinnen

1) Jeg tror at han sover.

Ik denk dat hij slaapt

2) Jeg tror at han skriver et brev.

Ik denk dat hij een brief schrijft

3) Jeg tror at han skriver brevet.

Ik denk dat hij de brief schrijft

4) Jeg tror at han driller ham.

Ik denk dat hij hem plaagt

Subject extractie - intransitief

1) Hvem tror han at sover?

Wie denkt hij dat er slaapt?

2) Hvem tror han at går?

Wie denkt hij dat er loopt?

3) Hvilken mand tror han at lyver?

Welke man denkt hij dat er liegt?

4) Hvilken mand tror han at gifter?

Welke man denkt hij dat er trouwt?

Subject extractie – transitief – indefiniete NP

5) Hvem tror han at skriver et brev?

Wie denkt hij dat er een brief schijft?

6) Hvem tror han at bygger et hus?

Wie denkt hij dat er een huis bouwt?

Subject extractie – transitief – definiete NP

7) Hvem tror han at skriver brevet?

Wie denkt hij dat de brief schrijft?

8) Hvem tror han at har mødt paven?

Wie denk hij dat de paus heeft ontmoet?

9) Hvilken mand tror han at bygger huset?

Welke man denkt hij dat het huis bouwt?

10) Hvilken mand tror han at køber Bibelen?

Welke man denkt hij dat de bijbel koopt?

Subject extractie – transitief – pronomer

11) Hvem tror han at driller ham?

Wie denkt hij dat hem plaagt?

12) Hvilken mand tror han at hader ham?

Welke man denk hij dat hem haat?

Object extractie - transitief

13) Hvad tror han at hun skriver?

Wat denkt hij dat zij schrijft?

14) Hvad tror han at hun bygger?

Wat denkt hij dat zij bouwt?

15) Hvad tror han at hun tegner?

Wat denkt hij dat zij tekent?

16) Hvad tror han at hun laver mad?

Wat denkt hij dat zij kookt?

Algemeen – zonder complementizer

Declaratieve zinnen

1) Jeg tror han sover.

Ik denk dat hij slaapt

2) Jeg tror han skriver et brev.

Ik denk dat hij een brief schrijft

3) Jeg tror han skriver brevet.

Ik denk dat hij de brief schrijft

4) Jeg tror han driller ham.

Ik denk dat hij hem plaagt

Subject extractie - intransitief

1) Hvem tror han sover?

Wie denkt hij dat er slaapt?

2) Hvem tror han går?

Wie denkt hij dat er loopt?

3) Hvilken mand tror han lyver?

Welke man denkt hij dat er liegt?

4) Hvilken mand tror han gifter?

Welke man denkt hij dat er trouwt?

Subject extractie – transitief – indefiniete NP

5) Hvem tror han skriver et brev?

Wie denkt hij dat er een brief schijft?

6) Hvem tror han bygger et hus?

Welke man denkt hij dat er een huis bouwt?

Subject extractie – transitief – definiete NP

7) Hvem tror han skriver brevet?

Wie denkt hij dat de brief schrijft?

8) Hvem tror han har mødt paven?

Wie denk hij dat de paus heeft ontmoet?

9) Hvilken mand tror han bygger huset?

Welke man denkt hij dat het huis bouwt?

10) Hvilken mand tror han køber Bibelen?

Welke man denkt hij dat de bijbel koopt?

Subject extractie – transitief – pronomem

11) Hvem tror han driller ham?

Wie denkt hij dat hem plaagt?

12) Hvilken mand tror han hader ham?

Welke man denk hij dat hem haat?

Object extractie - transitief

13) Hvad tror han hun skriver?

Wat denkt hij dat zij schrijft?

14) Hvad tror han hun bygger?

Wat denkt hij dat zij bouwt?

15) Hvad tror han hun tegner?

Wat denkt hij dat zij tekent?

16) Hvad tror han hun laver mad?

Wat denkt hij dat zij kookt?

Adverb effect

Intransitief

1) Hvem tror han at derover sover?

Wie denkt hij dat er daar slaapt?

2) Hvem tror han at trods kulden går?

Wie denkt hij dat er ondanks de kou loopt?

3) Hvilken mand tror han at nemt lyver?

Welke man denkt hij dat er makkelijk liegt?

4) Hvilken mand tror han at om et par dage gifter sig?

Welke man denkt hij dat er over een paar dagen trouwt?

Transitief - indefiniet object

1) Hvem tror han at i gar har skrevet en bog?

Wie denkt hij dat gisteren een boek heeft geschreven?

2) Hvem tror han at trods krisen har bygget et hus?

Wie denkt hij dat ondanks de crisis een huis heeft gebouwd?

3) Hvem tror han at hurtigt har tegnet en blomst?

Wie denkt hij dat snel een bloem heeft getekend?

4) Hvem tror han at for sin egen fornøjelse har skrevet en bog?

Wie denkt hij dat voor zijn eigen plezier een boek heeft geschreven?

Transitief – definiert object

1) Hvem tror han at i gar har skrevet bogen?

Wie denkt hij dat gisteren het boek heeft geschreven?

2) Hvem tror han at trods krisen har bygget huset?

Wie denkt hij dat ondanks de crisis het huis heeft gebouwd?

3) Hvem tror han at hurtigt har tegnet blomsten?

Wie denkt hij dat snel de bloem heeft getekend?

4) Hvem tror han at for sin egen fornøjelse har skrevet bogen?

Wie denkt hij dat voor zijn eigen plezier het boek heeft geschreven?

Sectie Deens

Subject extractie – der insertie – tegenwoordige tijd - met complementizer

1) Hvem tror han at der sover?

Wie denkt hij dat er slaapt?

2) Hvem tror han at der går?

Wie denkt hij dat er loopt?

3) Hvilken mand tror han at der lyver?

Welke man denkt hij dat er liegt?

4) Hvilken mand tror han at der gifter?

Welke man denkt hij dat er trouwt?

Subject extractie - der-insertie – verleden tijd – met complementizer

1) Hvem tror han at der har sovet?

Wie denkt hij dat er heeft geslapen?

2) Hvem tror han at der har gået?

Wie denkt hij dat er is getrouwd?

Subject extractie-passieve zin-der-insertie – verleden tijd- met complementizer

1) Hvad tror han at der er skrevet?

Wat denkt hij dat er is geschreven?

2) Hvad tror han at der er bygget?

Wat denkt hij dat er is gebouwd?

Object extractie - der-insertie – verleden tijd – met complementizer

- 1) Hvad tror han at han der har skrevet?
Wat denkt hij dat er hij heeft geschreven?
- 2) Wat denkt hij dat er hij heeft gebouwd?
Hvad tror han at han der har bygget?

Subject extractie - der-insertie – tegenwoordige tijd - zonder complementizer

- 1) Hvem tror han der sover?
Wie denkt hij dat er slaapt?
- 2) Hvem tror han der går?
Wie denkt hij dat er loopt?
- 3) Hvilken mand tror han der lyver?
Welke man denkt hij dat er liegt?
- 4) Hvilken mand tror han der gifter?
Welke man denkt hij dat er trouwt?

Subject extractie - der-insertie – verleden tijd – zonder complementizer

- 1) Hvem tror han der har sovet?
Wie denkt hij dat er heeft geslapen?
- 2) Hvem tror han der har gået?
Wie denkt hij dat er heeft gelopen?

Subject extractie-passieve zin-der-insertie – verleden tijd – zonder complementizer

- 1) Hvad tror han der er skrevet?
Wat denkt hij dat er is geschreven?
- 2) Hvad tror han der er bygget?
Wat denkt hij dat er is gebouwd?

Object extractie - der-insertie – verleden tijd – zonder complementizer

- 1) Hvad tror han han der har skrevet?
Wat denkt hij dat er hij heeft geschreven?
- 2) Wat denkt hij dat er hij heeft gebouwd?

Fillers

- 1) Hvor mange dage om ugen går han i skole?
Hoeveel dagen in de week gaat hij naar school?
- 2) Hvorfor vil han bygge et hus?
Waarom wil hij een huis bouwen?
- 3) Hvilken tegninger har han lavet?
Welke tekeningen heeft hij gemaakt?
- 4) Hvornår begynder han at lave mad?
Wanneer gaat hij beginnen met koken?
- 5) Hvad for måltider kan han lide best?
Van wat voor maaltijden houdt hij het meest?
- 6) Hvad for en uddannelse gør han nu?
Wat voor opleiding doet hij nu?

Gegevens participant

- 1) Hvad er din alder?
- 2) Hvad er dit køn? -man -kvinde
- 3) Hvor blev du født?
- 4) Hvor bor du?
- 5) Hvad er dit erhverv?
- 6) Hvad er din højest opnåede uddannelse?
- 7) Hvad er dit modersmål?
- 8) Taler du andre sprog ved siden af dit modersmål? Hvis ja, hvilke?
- 9) Taler du en dialekt? Hvis ja, hvilke?
- 10) Har du nogensinde boet i udlandet i mere end et år? Hvis ja, hvor mange år:
I hvilket land:

Eindpagina

Tak fordi du gennemførte undersøgelsen!

Hvis du har spørgsmål om dette spørgeskema, kan du sende en e-mail til følgende e-mail adresse:
c.pots@uu.nl

Appendix F

SWEDISH QUESTIONNAIRE

Introductietekst

Hej!

Till att börja med vill vi tacka så mycket för att du tagit dig tid att delta i studien!

Du kommer att se ett antal meningar. Vi vill att du för varje mening svarar om du skulle sagt den meningen på samma sätt som den är skriven här i enkäten. Detta gör du genom att ange en siffra på skalan 1 – 5. 1 betyder att du skulle sagt meningen på ett helt annorlunda sätt. 5 betyder att du skulle sagt meningen på exakt samma sätt. Du kan också ange siffrorna 2, 3 och 4. Försök att säga varje mening högt för dig själv och bedöm sedan meningen direkt efteråt genom att ange en siffra 1 – 5. Det är din första spontana reaktion som är det viktiga. Tänk på att det inte finns några “fel” svar utan det viktiga är din bedömning av hur meningen låter. Enkäten kommer att ta ca 10 - 15 minuter att fylla i. Det kanske inte är den mest intressanta enkäten för dig som gör den, men dina svar är väldigt viktiga för vår studie. Vi hoppas att du vill slutföra enkäten.

Återigen vill vi tacka så mycket för att du valt att delta i studien!

Cora Pots

Testitems

Algemeen – met complementizer

Declaratieve zinnen

1) Jag tror att han sover.

Ik denk dat hij slaapt

2) Jag tror att han skriver ett brev.

Ik denk dat hij een brief schrijft

3) Jag tror att han skriver brevet.

Ik denk dat hij de brief schrijft

4) Jag tror att han retar honom.

Ik denk dat hij hem plaagt

Subject extractie - intransitief

1) Vem tror han att sover?

Wie denkt hij dat er slaapt?

2) Vem tror han att går?

Wie denkt hij dat er loopt?

3) Vilken man tror han att ljuger?

Welke man denkt hij dat er liegt?

4) Vilken man tror han att gifter sig?

Welke man denkt hij dat er trouwt?

Subject extractie – transitief – indefiniete NP

- 5) Vem tror han att skriver ett brev?
Wie denkt hij dat er een brief schijft?
6) Vilken man tror han att bygger ett hus?
Welke man denkt hij dat er een huis bouwt?

Subject extractie – transitief – definiete NP

- 7) Vem tror han att skriver brevet?
Wie denkt hij dat de brief schrijft?
8) Vem tror han att har träffat påven?
Wie denk hij dat de paus heeft ontmoet?
9) Vilken man tror han att bygger huset?
Welke man denkt hij dat het huis bouwt?
10) Vilken man tror han att köper bibeln?
Welke man denkt hij dat de bijbel koopt?

Subject extractie – transitief – pronomen

- 11) Vem tror han att retar honom?
Wie denkt hij dat hem plaagt?
12) Vilken man tror han att hatar honom?
Welke man denk hij dat hem haat?

Object extractie - transitief

- 13) Vad tror han att hon skriver?
Wat denkt hij dat zij schrijft?
14) Vad tror han att hon bygger?
Wat denkt hij dat zij bouwt?
15) Vad tror han att hon ritat?
Wat denkt hij dat zij tekent?
16) Vad tror han att hon lagat?
Wat denkt hij dat zij kookt?

Algemeen – zonder complementizer

Declaratieve zinnen

- 1) Jag tror han sover.
Ik denk dat hij slaapt
2) Jag tror han skriver ett brev.
Ik denk dat hij een brief schrijft
3) Jag tror han skriver brevet.
Ik denk dat hij de brief schrijft
4) Jag tror han retar honom.
Ik denk dat hij hem plaagt

Subject extractie - intransitief

- 1) Vem tror han sover?
Wie denkt hij dat er slaapt?

2) Vem tror han går?

Wie denkt hij dat er loopt?

3) Vilken man tror han ljuger?

Welke man denkt hij dat er liegt?

4) Vilken man tror han gifter sig?

Welke man denkt hij dat er trouwt?

Subject extractie – transitief – indefiniete NP

5) Vem tror han skriver ett brev?

Wie denkt hij dat er een brief schijft?

6) Vilken man tror han bygger ett hus?

Welke man denkt hij dat er een huis bouwt?

Subject extractie – transitief – definiete NP

7) Vem tror han skriver brevet?

Wie denkt hij dat de brief schrijft?

8) Vem tror han har träffat påven?

Wie denk hij dat de paus heeft ontmoet?

9) Vilken man tror han bygger huset?

Welke man denkt hij dat het huis bouwt?

10) Vilken man tror han köper bibeln?

Welke man denkt hij dat de bijbel koopt?

Subject extractie – transitief – pronomen

11) Vem tror han retar honom?

Wie denkt hij dat hem plaagt?

12) Vilken man tror han hatar honom?

Welke man denk hij dat hem haat?

Object extractie - transitief

13) Vad tror han hon skriver?

Wat denkt hij dat zij schrijft?

14) Vad tror han hon bygger?

Wat denkt hij dat zij bouwt?

15) Vad tror han hon ritar?

Wat denkt hij dat zij tekent?

16) Vad tror han hon lagar?

Wat denkt hij dat zij kookt?

Adverb effect

Intransitief

1) Vem tror han att där sover?

Wie denkt hij dat er daar slaapt?

2) Vem tror han att trots kylan går?

Wie denkt hij dat er ondanks de kou loopt?

3) Vilken man tror han att lätt ljuger?

Welke man denkt hij dat er makkelijk liegt?

4) Vilken man tror han att inom några dagar gifter sig?

Welke man denkt hij dat er over een paar dagen trouwt?

Transitief - indefiniet object

1) Vem tror han att igår har skrivet en bok?

Wie denkt hij dat gisteren een boek heeft geschreven?

2) Vem tror han att trots krisen har byggt ett hus?

Wie denkt hij dat ondanks de crisis een huis heeft gebouwd?

3) Vem tror han att snabbt ritade en blomma?

Wie denkt hij dat snel een bloem heeft getekend?

4) Vem tror han att för sin egen njutning har skrivit en bok?

Wie denkt hij dat voor zijn eigen plezier een boek heeft geschreven?

Transitief – definiert object

1) Vem tror han att igår har skrivit boken?

Wie denkt hij dat gisteren het boek heeft geschreven?

2) Vem tror han att trots krisen har byggt huset?

Wie denkt hij dat ondanks de crisis het huis heeft gebouwd?

3) Vem tror han att snabbt ritade blomman?

Wie denkt hij dat snel de bloem heeft getekend?

4) Vem tror han att för sin egen njutning har skrivit boken?

Wie denkt hij dat voor zijn eigen plezier het boek heeft geschreven?

Sectie Zweeds

Object extractie – met ‘som’

1) Vad tror han som hon skriver?

Wat denkt hij dat zij schrijft?

2) Vad tror han som hon bygger?

Wat denkt hij dat zij bouwt?

3) Vad tror han som hon ritar?

Wat denkt hij dat zij tekent?

4) What does he think she is cooking?

Wat denkt hij dat zij kookt?

Fillers

1) Hur många dagar i veckan går han till skolan?

Hoeveel dagen in de week gaat hij naar school?

2) Varför vill han bygga ett hus?

Waarom wil hij een huis bouwen?

3) Vilken täckning har han gjort?

Welke tekeningen heeft hij gemaakt?

4) När ska han börja med matlagning?

Wanneer gaat hij beginnen met koken?

5) Vilken typ av mat gillar han mest?

Van wat voor maaltijden houdt hij het meest?

6) Vilken typ av studier gör han just nu?

Wat voor opleiding doet hij nu?

7) Varför vill han inte sova?

Waarom wil hij niet slapen?

8) Hur mycket kostar det här bordet?

Hoeveel kost deze tafel?

9) Vem säger att han måste gå hem?

Van wie moet hij naar huis gaan?

Gegevens participant

1) Hur gammal är du?

Kön: Man Kvinna

2) Vart är du född?

3) Vart bor du?

4) Vad är ditt yrke idag?

5) Vilken utbildningsnivå har du studerat på?

6) Vilket är ditt modersmål?

7) Kan du något annat språk förutom ditt modersmål?

Om ja, vilket/vilka?

8) Pratar du med någon dialect?

Om ja, vilken/vilka?

9) Har du bott utomlands under minst ett år?

Om ja, hur länge? I vilket land?

Eindpagina

Tack för att du fyller i vår enkät!

Om du har några frågor om enkäten kan du skriva till: c.pots@uu.nl