Getting PRO under Control

A Syntactic Analysis of the Nature and Distribution of Unexpressed Subjects in Non-finite and Verbless Clauses
Getting PRO under Control
A Syntactic Analysis of the Nature and Distribution of Unexpressed Subjects in Non-finite and Verbless Clauses

ACADEMISCH PROEFSCHRIFT

ter verkrijging van de graad van doctor aan
de Vrije Universiteit te Amsterdam,
op gezag van de rector magnificus
prof.dr. T. Sminia,
in het openbaar te verdedigen
ten overstaan van de promotiecommissie
van de faculteit der letteren
op maandag 29 juni 1998 om 15.45 uur
in het hoofdgebouw van de universiteit,
De Boelelaan 1105

door

Margaretha Elizabeth Petter

geboren te Onstwedde
Promotor: prof.dr. G.E. Booij
Copromotor: dr. A.M.C. van Kemenade
Although writing a PhD-thesis is ultimately the job of one particular person, this book would not be what it is without the help and support of others. Therefore, I feel it is only right to mention those people whose support has proved invaluable to me.

First of all I want to thank my direct supervisor Ans van Kemenade for showing genuine interest in both linguistic in personal matters. It was during my undergraduate studies that her generative linguistic classes incited my curiosity to know more about syntax. After I had written my scriptie under her supervision, Ans encouraged me to write a PhD-proposal and apply for an AiO-position at the VU. Her encouragement remained a continual driving force throughout the years of my PhD-research. The many discussions we had together were a great help in shaping this dissertation into its final form.

Second I’d like to thank my promotor Geert Booij. He was actually the first to introduce me to the discipline of General Linguistics during my first year of undergraduate studies. Ever since then, I felt challenged by linguistic matters. It was very useful that Geert was always there when I needed an official signature or letter of recommendation. Thanks to him I was able to visit the summerschool of linguistics in Girona in 1994 and spend the fall semester of that year at the University of Massachusetts in Amherst.

For these periods abroad and for various trips to conferences, I’m also grateful to the Dutch Organisation for Scientific Research (NWO), since they financially supported up to 50% of the expenses. Thanks to Geert it was possible for me to enjoy the hospitality of the VU, so that I could continue using their facilities after my official time as an aio had run out. His accurate proof-reading of the pre-final version of my manuscript has also proved extremely useful.

I also want to thank Marcel van Dikken for all the work he put
into reading and commenting on earlier versions of these chapters. His many critical comments helped me to shape and reconsider my argumentation in various places.

For the time I spent in Amherst, I’m very grateful to Hagit Borer for being my supervisor at UMass. We had some interesting and encouraging discussions about my research topic. I’m also grateful for having been able to follow lectures by her and other UMass staff and enjoy the expertise of linguists like Ellen Woolford, Peggy Speas, Angelika Kratzer and Kyle Johnson.

Furthermore I’d like to mention Aafke Hulk, Hans Bennis, Peter Coopmans and Lachlan MacKenzie. I thank them for taking the time to read my manuscript as members of the reading-committee.

Another important and indispensable group of people during my time as an aoi were of course my fellow PhD-students. I enjoyed it very much that I was sharing a room with Astrid Wijnands and Rick de Graaff, and later with Nienke Lammerse and Cristina Pumplun. Sharing experiences with them usually put things back in their right perspectives again. The same uplifting influence I experienced during the many lunches and birthday tea-parties shared with other VU-colleagues: Wilma Elsing, Marian Klamer, Gersom Kuiper, Mirjam Ernestus, BetteLou Los, Frank Beths, Margit Rem, Ronny Bogaart en Claartje Levelt. From my other HIL-colleagues, I’d like to especially mention Jenny Doetjes, who shared an attic with me in Amherst, and Astrid Ferdinand.

Apart from colleagues and supervisors, I’ve also received warm support from friends and family. I wish to say a general thank you to all who have shown me genuine friendship and never failing interest in my work and well-being. Special thanks go to my parents Henny and Eelco van der Zee for supporting me right from the beginning through my undergraduate studies and on the way to my promotion.

And last, but not least many thanks go to my husband Dik van Gent, who, having been through the process of writing a dissertation himself, has always been understanding, encouraging and supportive.
Table of Contents

Part I  The Problem

Chapter 1  Introduction

1.1. The topic of investigation .............................................. 3
  1.1.1. Introduction .................................................. 3
  1.1.2. Various control constructions .............................. 4
  1.1.3. Motivation for the pronominal nature of PRO ........... 8
1.2. Theoretical background .............................................. 12
  1.2.1. Introduction .................................................. 12
  1.2.2. PRO and Government Theory ............................. 16
  1.2.3. PRO and Binding Theory .................................... 22
1.3. Proposal and outline ............................................... 26
  1.3.1. The proposal ................................................ 26
  1.3.2. Outline ..................................................... 27

Part II  An Alternative Proposal

Chapter 2  On the Nature of PRO

2.1. Introduction ....................................................... 31
2.2. Further motivation for PRO as a pure pronoun ................. 31
2.3. Alternative analyses of the nature of PRO .................... 42
  2.3.1. Introduction ................................................ 42
  2.3.2. PRO as a pure anaphor .................................... 42
  2.3.3. Anaphoric PRO revisited .................................. 44
  2.3.4. The pronominal anaphor approach revisited ............ 48
# TABLE OF CONTENTS

2.3.5. PRO: anaphor or pronoun ........................................ 51
  2.3.5.1. Introduction ............................................... 51
  2.3.5.2. Obligatorily controlled PRO as anaphor .................. 51
  2.3.5.3. Bach’s generalization .................................... 53
  2.3.5.4. Visser’s generalization .................................. 54
  2.3.5.5. Anaphoric PRO and VR ................................... 57
  2.3.5.6. Conclusions with respect to Koster’s (1984) analysis ... 59
  2.3.5.7. Non-obligatorily controlled PRO as a pronoun .......... 61

2.3.6 Pronominal PRO .................................................... 65
  2.3.6.1. Introduction ............................................... 65
  2.3.6.2. Anaphoric Agr ............................................ 66
  2.3.6.3. Generalized control ..................................... 68

2.4. PRO as a pure pronoun ............................................. 72
  2.4.1. Introduction ............................................... 72
  2.4.2. Defining the locality domain for PRO ....................... 73
  2.4.3. The licensing of PRO ....................................... 82
  2.4.4. Conclusions ............................................... 86

Chapter 3 On the Distribution and Structural Licensing of PRO

3.1. Introduction ....................................................... 87
3.2. The LGB-approach to the distribution of PRO .................. 88
3.3. The Barriers account of the distribution of PRO ............... 89
3.4. Kayne (1991) ..................................................... 90
3.5. PRO and structural Case .......................................... 96
  3.5.1. Introduction ............................................... 96
  3.5.2. PRO as the head of Case and agreement-chains in Icelandic ........................................... 97
  3.5.3. Nominative Case for infinitival subjects in Portuguese .................................................. 101
  3.5.4. Infinitival to: more than a Tense marker .................. 105
  3.5.5. Conclusions with respect to the distribution of PRO in infinitival clauses ......................... 114
3.6. PRO licensing in Small Clause predicates ....................... 117
  3.6.1. Introduction ............................................... 117
  3.6.2. Motivation from Hebrew and Standard Arabic for TP in Small Clauses .................................. 119
  3.6.3. The syntactic structure of Small Clauses .................. 121
3.7. Conclusions ...................................................... 126
# Table of Contents

Chapter 4  The Syntactic Licensing of External Argument PRO

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1. Introduction</td>
<td>129</td>
</tr>
<tr>
<td>4.2. The argument structure of <em>laten</em></td>
<td>132</td>
</tr>
<tr>
<td>4.2.1. Introduction</td>
<td>132</td>
</tr>
<tr>
<td>4.2.2. Monotransitive <em>laten</em></td>
<td>132</td>
</tr>
<tr>
<td>4.2.3. Ditransitive <em>laten</em></td>
<td>134</td>
</tr>
<tr>
<td>4.3. <em>Laten</em> and infinitival complement clauses</td>
<td>135</td>
</tr>
<tr>
<td>4.3.1. Introduction</td>
<td>135</td>
</tr>
<tr>
<td>4.3.2. Four types of and infinitival complements</td>
<td>135</td>
</tr>
<tr>
<td>4.4. Evidence for an active infinitive analysis</td>
<td>140</td>
</tr>
<tr>
<td>4.4.1. Introduction</td>
<td>140</td>
</tr>
<tr>
<td>4.4.2. The syntactic status of the internal argument in 'subjectless' infinitives</td>
<td>141</td>
</tr>
<tr>
<td>4.4.3. Ditransitive <em>laten</em> with infinitival complements</td>
<td>146</td>
</tr>
<tr>
<td>4.4.4. Ditransitive <em>laten</em> and Dutch word order</td>
<td>150</td>
</tr>
<tr>
<td>4.5. The syntactic licensing of PRO in infinitival complements to ditransitive <em>laten</em></td>
<td>155</td>
</tr>
<tr>
<td>4.5.1. Introduction</td>
<td>155</td>
</tr>
<tr>
<td>4.5.2. PRO and structural nominative Case</td>
<td>156</td>
</tr>
<tr>
<td>4.5.3. The infinitival ending as minimal content-identifier for PRO</td>
<td>157</td>
</tr>
<tr>
<td>4.6. The Status of English <em>let/have</em></td>
<td>164</td>
</tr>
<tr>
<td>4.6.1. Introduction</td>
<td>164</td>
</tr>
<tr>
<td>4.6.2. Monotransitive and ditransitive <em>let</em> and <em>have</em></td>
<td>165</td>
</tr>
<tr>
<td>4.6.3. Ditransitive <em>let/have</em> as object control constructions</td>
<td>168</td>
</tr>
<tr>
<td>4.7. Conclusions</td>
<td>170</td>
</tr>
</tbody>
</table>

Part III  The Interpretation of PRO: Where Syntax and Semantics Meet

Chapter 5  The Reference of PRO

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1. Introduction</td>
<td>175</td>
</tr>
<tr>
<td>5.2. A selected literature review</td>
<td>176</td>
</tr>
<tr>
<td>5.2.1. Introduction</td>
<td>176</td>
</tr>
<tr>
<td>5.2.2. Syntactic approaches to control</td>
<td>176</td>
</tr>
<tr>
<td>5.2.2.1. Obligatory and non-obligatory control</td>
<td>176</td>
</tr>
<tr>
<td>5.2.2.2 The Minimal Distance Principle (MDP)</td>
<td>179</td>
</tr>
</tbody>
</table>
Table of Contents

5.2.2.3. Operator bound PRO ............................................. 182
5.2.3. The interpretation of PRO as a lexical property of control verbs ............................................. 184
  5.2.3.1. A Lexical Functional Grammar approach .......... 184
  5.2.3.2. A Thematic Identity approach ......................... 187
5.2.4. Control and formal semantics ................................. 188
5.2.5. More on lexical properties of control verbs .............. 190
  5.2.5.1. Introduction ............................................. 190
  5.2.5.2. A lexical relations approach .......................... 190
  5.2.5.3. Controllers as arguments of unrealized subevents ............................................. 193
5.2.6. Interim conclusions ............................................ 197
5.3. Classification of control verbs ................................... 199
  5.3.1. Introduction ............................................. 199
  5.3.2. Invariable control ......................................... 200
    5.3.2.1. Introduction ......................................... 200
    5.3.2.2. Monotransitive verbs and subject control .......... 200
    5.3.2.3. Ditransitive verbs and object control .............. 202
  5.3.3. Varying control ............................................ 204
    5.3.3.1. Introduction ......................................... 204
    5.3.3.2. Monotransitive verbs .................................. 205
    5.3.3.3. Ditransitive verbs .................................... 206
5.4. Conclusions ..................................................... 209

Chapter 6  Control Shift

6.1. Introduction ..................................................... 211
6.2. Deontic modality and control shift ............................... 214
  6.2.1. Introduction ............................................. 214
  6.2.2. Deontic modality and argument structure ................. 215
  6.2.3. The syntactic representation of deontic modality .... 221
    6.2.3.1. Introduction ......................................... 221
    6.2.3.2. Deontic expressions in English ......................... 221
    6.2.3.3. Deontic modal verbs in Dutch .......................... 223
  6.2.4. The Deontic Authority as a cause for control shift .... 228
    6.2.4.1. Introduction ......................................... 228
    6.2.4.2. The pronominal behavior of the implicit DA .......... 228
  6.2.5. Finite and infinitival deontic clauses compared .......... 234
6.3. Control shift and infinitival relatives ........................ 236
  6.3.1. Introduction ............................................. 236
  6.3.2. Control shift as a means to avoid a violation of binding principle C ............................................. 237
6.4. Conclusions ..................................................... 240
TABLE OF CONTENTS

Part IV  Conclusions

Chapter 7  Summary and Conclusions  243
References  249
Samenvatting  255
Part I

The Problem
1

Introduction

1.1. The topic of investigation

1.1.1. Introduction

This dissertation aims to give a unified account of the syntactic nature and distribution of obligatorily unexpressed subjects in embedded non-finite and verbless clauses. Examples of non-finite clauses with an empty subject are given in (1).

(1) a Jan beloofde Marie (om) vroeg te vertrekken (Dutch)  
    John promised Mary (for) early to leave
 b  John promised Mary to leave early

In this study I concentrate on English and Dutch, but data from other languages are included whenever relevant.

Following the generative tradition of grammatical analysis since Chomsky (1981), I refer to this obligatorily unexpressed subject as PRO. A PRO subject is often interpreted as one of the arguments expressed in the immediately higher clause. This interpretative relation between PRO and a higher argument is generally referred to as a ‘control relation’, where the higher argument functions as the ‘controller’ and PRO is the ‘controllee’. Although not all PRO subjects have a lexical controller, constructions with a PRO subject in an embedded clause are generally known as ‘control constructions’.

In this thesis I defend the view that throughout all its occurrences PRO is a pronoun, syntactically licensed in the subject position of embedded non-finite and verbless clauses by structural nominative Case. I begin by giving an overview of the various
occurrences of PRO.

1.1.2. Various control constructions

Controlled clauses may function as selected arguments (complements or subjects) or as adjunct clauses. Examples of the various types of control constructions are given in (2) to (7).\(^1\)

*infinitival complement clauses*
(2)  
  a  John, tried [PRO; to unlock the door]  
  b  John, promised Marty; [PRO; to fix the car]  
  c  John, asked Marty; [PRO; to fix the car]

*infinitival subject clauses*
(3)  
  a  It is fun (for Jane) [PRO; to play badminton]  
  b  It is better for the environment [PRO\textsubscript{arb} to be more careful with toxic waste]  
  c  [PRO; to know him] is [PRO; to love him]

*infinitival adjunct clauses*
(4)  
  a  The captain; sank the ship [(in order) PRO; to collect the insurance money]  
  b  The ship was sunk (by the captain) [(in order) PRO\textsubscript{v/arb} to collect the insurance money]

*infinitival relatives*
(5)  
  a  Kim; has three small children; (Op; [PRO; to care for e;])  
  b  Jane; bought a book; (Op; [PRO; to read e; over the weekend])

*gerundive clauses*
(6)  
  a  Peter; remembered [PRO; locking the door]  
  b  In this prep school, [PRO\textsubscript{arb} eating by oneself] is highly disapproved of  
  c  [After [PRO; having finished his homework]] John; went to bed

\(^1\)The sentences in (3c) and (6b) are from Lebeaux (1984), and the sentences in (7) are from Haegeman (1991).
**INTRODUCTION**

verbless adjunct clauses

(7) a Mary, arrived [PRO; totally exhausted]
b John, came home [PRO; a wiser man]c Kate, left [PRO; in a foul mood]

One property shared by all instances of PRO in the examples above and which distinguishes PRO from DP-traces in subject position is that PRO is assigned a thematic role (θ-role) within the embedded clause, which is independent from the θ-role that its controller, if any, receives within the matrix clause.2

Another property of PRO is that PRO and lexical DPs are largely in complementary distribution. This property distinguishes PRO from another type of empty subject, namely a pro-subject. The occurrence of pro-subjects is restricted to so-called pro-drop languages, which have the possibility of licensing empty subjects with pronominal properties in nominative position of finite clauses with rich agreement morphology or clauses with no agreement morphology at all (cf. Jaeggi & Safir 1989). The examples in (8) show that the position in which PRO is licensed cannot be occupied by a lexical DP and the examples in (9) show that positions in which lexical DPs are licensed cannot be occupied by PRO.

(8) a *John; tried [he/she/him(self)/her/Steve to unlock the door]b *It is fun (for Jane) [he/she/him/her(self)/Steve to play badminton]c *Jane, bought a book; [Op; [he/she/him/her(self)/Steve to read e; over the weekend]]d *Mary, arrived [he/she/him/her(self)/Steve totally exhausted]e *The ship was sunk (by the captain) [(in order) he/she/him(self)/her/Steve to collect the insurance money]f *[One/people to know him] is [one/people to love him]g *Kate left [he/she/her(self)/him/Steve in a foul mood]3

---

2Although the term NP (for noun phrase) is a more well known way of referring to nominal groups, I will use the term DP (for determiner phrase), because it is more accurate in that it indicates the (c)overt presence of a determiner which heads the extended projection of an NP.

3As the verb leave has an intransitive and a transitive use, the constructions with an accusative (pro)noun following the matrix verb are grammatical. In these constructions the interpretation of the embedded clause is ambiguous, because it can modify either the subject or the object of leave, so that the representation
In this prep school, [one eating by oneself] is highly disapproved of.

Although it may be objected that sentences (8b,c,e) allow a lexicalized for-DP in subject position, I do not consider this to be a DP-PRO alternation comparable to the DP-pro alternation available in pro-drop languages like Italian, since the lexical DP in the infinitival construction requires a preposition to license its presence. Therefore, I conclude from the above examples that the subject position of infinitival and verbless clauses is not available for lexical DPs.

The examples in (9) furthermore illustrate that PRO cannot be licensed in the same position as lexical DPs.

(9) 

\begin{itemize}
  \item a. *PRO walks
  \item b. *John sees PRO
  \item c. *John counts on PRO
  \item d. *John considers [\_AP PRO intelligent]
  \item e. *John believes [\_IP PRO to be intelligent]
  \item f. *John hears [\_VP PRO sing a song]
\end{itemize}

(Bennis & Hoekstra 1989a)

These examples show that in English PRO is excluded from the

should be as in (i).

\begin{itemize}
  \item i. Kate, left him/Steve [PRO_{vi} in a foul mood]
\end{itemize}

It must be noted, however, that a genitive subject in this example is grammatical, as in one's eating by oneself. Examples from Reuland (1983) also show that gerunds differ from infinitives in that they optionally license not only lexical genitive, but also accusative and sometimes even nominative DPs, as in (i) - (iii).

\begin{itemize}
  \item i. Elaine's winking at Roddy was fruitless, be being a confirmed bachelor.
  \item ii. Michael counted on them finishing the book soon.
  \item iii. Them trying to sing a song was just horrible.
\end{itemize}

The option of the genitive DP can be explained by the fact that gerunds have nominal properties, and nouns do not assign structural Case, but generally allow their arguments to appear in prenominal position with inherent genitive Case. The option of structural accusative Case as in (ii) can be derived from the assumption that this Case is assigned by the higher verb or preposition, while the accusative Case in examples like (iii) may be an instance of default Case, possibly assigned by an empty preposition like for. I would like to explain the option of a lexical nominative DP, as in (i), by the claim—further supported in chapter 3—that all clauses contain a Tense operator in T^3, which licenses a(n empty) subject in its specifier by assigning it structural nominative Case. The example in (i) is exceptional for English, because this language generally does not license a lexical nominative DP without the presence of finiteness or agreement features.
subject position of finite clauses (9a), the object position of transitive verbs or prepositions (9b,c), and the subject position of ECM verbs (9d,e,f). The data in (8) and (9) strongly suggest that the distribution of PRO is uniformly that of a subject of non-finite and verbless clauses where it is protected from Case assignment from the outside. One of the aims of this study is to define how PRO is licensed in the subject position of non-finite clauses.

Another aim of the present research project is to determine the nature of PRO. On the basis of the examples in (2), (4a), (5), (6a,c) and (7), PRO has traditionally been attributed anaphoric properties, because it is obligatorily related to a particular antecedent in some local domain. On the basis of examples (3), (4b) and (6b), however, PRO has also been attributed pronominal properties, because in these examples a lexical controller for PRO need not, and sometimes even cannot, be present (cf. Van Haaften 1991). This variety in referential relations of PRO resulted in a first analysis of PRO as a pronominal anaphor, the pronominal and anaphoric properties of which are active simultaneously (Chomsky 1981). In subsection 1.2.3, I discuss this proposal and show that this analysis is problematic in three respects: defining a local binding domain for PRO, giving an account for unbound PRO, and licensing the syntactic visibility of PRO. In subsection 1.3.1, I present an alternative proposal, which is worked out in later chapters.

In the next chapter, I discuss the advantages and disadvantages of four typologically different accounts of the nature of PRO. Some accounts retain the analysis of PRO with simultaneously active pronominal and anaphoric properties (cf. Chomsky 1986b; Kayne 1991). Other accounts argue that PRO is always a pure anaphor (cf. Manzini 1983, Bennis & Hoekstra 1989a, VandenWyngaerd 1990, 1994). A third analysis of PRO is that it is sometimes an anaphor and at other times a pronoun (cf. Koster 1984; Bouchard 1984, 1985a,b). And a fourth analysis is that PRO is always a pronoun (cf. Borer 1989; Huang 1989). From this discussion I conclude in section 2.5 that PRO is best analyzed as a pronoun.

Therefore, in this study I will defend the view that PRO should be analyzed as an empty pronoun throughout. If PRO is a pronoun, this solves the problem of unbound PRO with arbitrary reference, and enables us to define a local domain for PRO in which it may

---

9ECM stands for exceptional Case marking. ECM verbs are verbs which assign structural accusative Case to the subject of an embedded clause. In subsection 1.2.2 this type of Case-marking is briefly explained in connection with the notion of government.
not be A-bound. However, it requires a different explanation for the apparent anaphoric behavior of obligatorily controlled PRO in sentences like those in (2a) and for the fact that, unlike pro, PRO generally does not alternate with lexical subjects. With respect to the apparent anaphoric behavior of PRO, I argue that this is related to the requirement of content-identification for empty pronouns, and to the semantic properties of the control construction, rather than anaphoric properties of PRO. With respect to the distribution of PRO, I argue that all subjects are licensed by structural nominative Case, but that additional language specific requirements are involved in the licensing of lexical nominative subjects.

1.1.3. Motivation for the pronominal nature of PRO

In this section I present five arguments in support of the claim that PRO is a pronoun. These arguments are (1) a parallel default interpretation of a lexical pronominal subject in equivalent finite clauses, (2) the possibility of control shift, (3) the possibility of split control, (4) the possibility of independent arbitrary reference for unbound PRO, and (5) the possibility of long distance control (LDC). In chapter 2 these arguments will be worked out in more detail.

The sentences in (10) show that the reference of PRO in non-finite clauses is the same as the default reference of lexical pronouns in equivalent finite clauses, as illustrated below.

(10) a John, tried [whether he_{i/k} could unlock the door]
    b John; promised Marty; [that he_{i/y/j/k} would fix the car]
    c John; asked Marty; [if he_{i/y/j/k} would fix the car]
    d John; tried [PRO_{i/y/k} to unlock the door]
    e John; promised Marty; [PRO_{i/y/k} to fix the car]
    f John; asked Marty; [PRO_{i/y/k} to fix the car]

These examples show that lexical pronouns in (10a,b,c) have the same default interpretation as PRO in (10d,e,f). The only difference is that lexical pronouns in (10b,c) allow reference in a still wider context, as indicated by the index k, because the lexical pronouns are inherently content-identified by virtue of their specific φ-features. It must be noted, however, that in the case of try in (10a) such a reference in the wider context is not possible for the lexical pronoun. I have provided the other instances of possible contextual reference with a question mark, because this kind of reference is
only allowed when information about the wider context is known. If further contextual information is absent, reference in the wider context is not possible for lexical pronouns, either. If PRO is a pronoun, the fact that PRO cannot be interpreted in the wider context, even when this is given, cannot be explained in terms of anaphoric binding. Instead, I propose that the compelling reference of PRO in these constructions is due to semantic properties of the control construction.

A second phenomenon which supports a pronominal analysis of PRO is the possibility of shifts in control relations. The reference of lexical pronominal subjects in finite complement clauses to three-place verbs like promise and ask may only shift when the modal interpretation of the embedded clauses has been altered. Consider the examples in (11), and compare them to (10b,c).

(11) a John promised Marty, [that he_{i/1/\gamma/k}, may fix the car]
b John asked Marty, [whether he_{i/4/\gamma/k}, should fix the car]

In (11) the modals implicitly introduce an additional ‘Authority’ argument, which may not be coreferent with the embedded subject. If the implicit Authority in (11a) is interpreted as the matrix subject John, the embedded subject can no longer receive its default interpretation as the matrix subject, and the referential relations must shift. If the implicit Authority in (11b) is interpreted as the matrix object, the embedded subject can no longer receive its default interpretation as the matrix object, and the referential relations in this sentence must also shift.

These shifts in referential interpretation of lexical pronouns are mirrored by the possibility of control shift for PRO. Consider the examples in (12).

(12) a John promised Marty, [PRO_{i/1/\gamma/k}, to be allowed to fix the car]
b John asked Marty, [PRO_{i/1/\gamma/k}, to be permitted to fix the car]
c Grandma promised the kids, [PRO, to stay up late]
d The pupil asked the teacher, [PRO, to leave early]

The examples in (12a,b) involve a passive construction in the embedded clause, causing control shift when the implicit external argument of allow and permit is interpreted as the matrix subject in
(12a) or the matrix object in (12b), respectively.\textsuperscript{6} The examples in (12c,d), from Farkas (1988), do not show an overt change of mood or modality in the embedded clause, but the hierarchical relations between *grandma* and *the kids* and *the pupil* and his *teacher* force a deontic interpretation. The modal nature of these control shift relations will be discussed in more detail in chapters 5 and 6. Here, however, an explanation of the term ‘deontic’ is in order. Deontic modality refers to a situation in which an ‘external force’ (cf. Lyons 1977)—which I will refer to as the Deontic Authority (DA)—causes a second participant to perform a certain activity or to be in a certain state. When the implicit DA in the examples in (12) is interpreted as the unmarked or ‘core’ controller of *promise* and *ask*, the subject and the object respectively, the control relations must shift. The fact that these shifts occur under the same circumstances for lexical pronouns and PRO supports the hypothesis that PRO is a pronoun.

A third argument for analyzing PRO as a pronoun is that, unlike anaphors, PRO allows split antecedents. Consider the examples in (13).

\begin{align*}
(13) & \quad a. \text{John, suggested to Mary, [PRO}_i^{*j} \text{ to go to the pictures (together)]} \\
& \quad b. \text{John, suggested to Mary, [that they}_i^{*j} \text{ go to the pictures (together)]} \\
& \quad c. \text{Barbara, suggested to Michael, their}_i^{*j}/^{*} \text{each other}_i^{*j} \text{'s new CD as a present for Bill} \\
& \quad d. \text{John introduced Mary to himself/herself/^{*}themselves/^{*}each other}
\end{align*}

The examples in (13a,b) show that both PRO and a lexical pronominal subject may have a split antecedent. The example in (13d) shows that the anaphor in the PP may take either the object or the subject as an antecedent, but cannot take a split antecedent. As in (13c) the lexical anaphor cannot have a split antecedent, whereas the pronoun can, the grammaticality of split control in (13a) suggests that PRO has the same nature as the overt subject in (13b), i.e. that of a pronoun.

Fourth, it can be shown that the extension of the local binding domain in order to account for the behavior of PRO as if it were an anaphor is not sufficient to cover all cases. The extension of the local

\textsuperscript{6}As *allow* and *permit* are not typically agentive verbs, I consider the thematic role of their external argument to be the Source, rather than the Agent. In chapter 6 we discuss these constructions in more detail.
anaphoric domain for control relations as proposed by Manzini (1983) and others, extends the local domain to the matrix clause. The examples in (14) illustrate that this does not cover all control constructions.

(14) a It is better for the environment [\text{PRO}_{arb} to be more careful with toxic waste]
b This is a book [\text{PRO} to stick pictures in e]
c \text{[PRO} to know him\text{]} is [\text{PRO} to love him]
d John, asked Mary; [how \text{PRO}_{i/arb} to knit a jumper]

In (14a,b,c) the matrix clauses have all their argument slots filled with an overt argument, and none of these qualify as controllers, so that if PRO were an anaphor it is expected that these sentences are ungrammatical. The example in (14d) allows a coreference relation between PRO and the matrix subject, but the interpretation may also be free, as indicated by the subscript \textit{arb}. As the arbitrary, generic interpretation for PRO is grammatical in all of the examples in (14), they support the hypothesis of a pronominal PRO, because they cannot or need not be locally A-bound in these cases.

Finally, the examples in (15) show that PRO also allows long distance control (LDC), which is entirely unexpected if PRO were anaphoric in nature.

(15) a Jan, zei tegen Marie; [dat het slecht voor zijn, plantjes was [om \text{PRO}_{i/arb} ze met de nachtvorst buiten te laten]]
   Jan said [to Marie [that it bad for his plants was [for PRO them with the night-frost outside to leave]
   'Jan told Marie that it was bad for his plants to leave them outside when it was freezing at night'

b Jan, kreeg [Marie's opdracht [om \text{PRO}_{i/arb} voor hebben bij haar; langs te komen]] pas om elf uur door
   Jan got [Marie's order [for PRO before ten at her by to come]] only at eleven hours through
   'Jan received Marie's order to call on her before ten only at eleven o'clock'

In (15a) the controlled clause is embedded within a finite \textit{that}-clause. The finite clause constitutes an independent binding domain, but does not contain the controller for PRO. Instead, PRO may be controlled by the subject or object in the higher clause, or PRO may independently receive an arbitrary interpretation. If PRO is an anaphor, this construction would be predicted to be ungrammatical.
In (15b) the controlled clause is embedded within the DP headed by order. If PRO were anaphoric, we would expect that the subject in SpecDP, Marie, serves as a local antecedent for PRO. However, this relation is ungrammatical. Instead, PRO is controlled by the higher subject, John. Thus, both examples in (15) are instances of LDC and as such they are a strong argument for the idea that PRO is a pronoun.

In conclusion, I find the above arguments against an anaphoric analysis of the nature of PRO sufficient evidence to justify an investigation into the nature of PRO starting from the other end, namely the hypothesis that PRO is always a pronoun. Before presenting my own proposal, however, I will first introduce the theoretical assumptions I take as a point of departure for the present research project.

1.2. Theoretical background

1.2.1. Introduction

The point of departure for the syntactic analysis of PRO in the present study is the principles and parameters approach of generative syntax (cf. Chomsky 1981; 1986a,b), because this theory assumes a mapping of lexical properties to syntactic representations, so that the syntactic nature and distribution of PRO should stand in a natural relation to its interpretation. This study is conducted within the framework of the Government and Binding (GB) theory, incorporating later developments in syntactic theory—such as a strictly binary branching syntactic structure (cf. Kayne 1984), functional projections (Pollock 1989), economy of derivation (Chomsky 1991) and feature checking as motivation for movement (Chomsky 1993, 1995; Kayne 1994)—where this is appropriate. In subsections 1.2.2 and 1.2.3, the Government and Binding modules are discussed in relation to the nature and distribution of PRO. In this introduction I discuss five assumptions which form the point of departure for the present analysis: the Projection Principle, the Extended Projection Principle (EPP), the Theta Criterion, the Case Filter, and the Visibility Condition (VC).

The Projection Principle is concerned with subcategorization properties of lexical items. In the lexicon, a transitive verb like unlock in the embedded clause in (2a) is subcategorized for a direct internal argument, which is syntactically realized as the direct
complement of the verb. In (2a), repeated here, the direct complement of *try* is the entire embedded clause.

(2a)  
John tried [PRO to unlock the door]

The mapping of selected arguments to syntactic positions is defined as in (16).

(16) **Projection Principle**
Representations at each syntactic level (i.e. LF, and D- and S-structure) are projected from the lexicon, in that they observe the subcategorization properties of lexical items.

(Chomsky 1981: 29)

The Projection Principle is defined with respect to subcategorization properties of lexical items, which are syntactically represented as heads (*X*). These lexical heads together with their selected complement(s) form a predicate, which also has selectional properties. In example (2a) the matrix predicate *tried to unlock the door* selects an Agentive argument, the subject *John*. For the embedded clause there is no lexically realized subject, so that it must be motivated why we want to assume that it is nonetheless syntactically represented. The syntactic representation of PRO has a structural and a thematic motivation.

The structural motivation for the syntactic representation of PRO stems from the observation that some clauses require a lexical subject even when there is no thematic role for this subject. Examples of these subjects are *there* and *it* in (17).

(17) a  There is a man in the garden  
      b  It is fun (for Jane) [PRO to play badminton]

The existence of these ‘expletive’ subjects gave rise to the idea that all clauses must have a subject. This has been formalized as a general principle in the Extended Projection Principle (EPP).

(18) **Extended Projection Principle (EPP)**
Every clause must have a subject.

(Chomsky 1986a: 4, 46)

As this principle is not much more than stipulation, various linguists have tried to find a more principled motivation for it. Such a motivation has been argued to derive from the fact that clauses are
subject-predicate relations. I will adopt the view that subject-predicate relations are licensed by a predicational operator (cf. Chierchia 1984; Déchaine 1993). With Déchaine (1993) I will assume that the functional head Tense, whether finite or non-finite, whether dependent on or independent of the matrix temporal specification, is the predicational licensing head for subject-predicate relations, and distinguishes predicative from argumental uses of the various lexical categories, not only for NP (DP) and PP, but also for VP and AP. In a sentence like (19), finite T⁰ functions as the predicational operator licensing the matrix subject-predicate relation, and infinitival T⁰ functions as the predicational operator licensing the embedded subject-predicate relation.

(19) John, T⁰ tried [PRO, T⁰ to unlock the door]

Without further discussion, I adopt the traditional view (cf. Chomsky 1981; Pollock 1989) that English *to* is base-generated in T⁰. In chapter 3 it is further motivated that an abstract T⁰ also licenses a subject-predicate relation in Small Clauses. Thus, the structural motivation for the syntactic licensing of PRO comes from the EPP.

Compared to lexical expletive subjects, however, PRO subjects appear to have the exact opposite characteristics. PRO is a subject without lexical content, which nonetheless has a meaningful interpretation. The second motivation for adopting the idea that PRO is syntactically licensed, therefore, is related to the θ-criterion in (20).

(20) **Theta Criterion**

Each argument bears one and only one θ-role, and each θ-role is assigned to one and only one argument.

(Chomsky 1981: 36)

Thus, each θ-role can only be assigned once, and an argument can only have one θ-role. As such, Mary in the object position in (21) cannot be assigned both thematic roles of matrix Addressee and embedded Agent.

(21) John, asked Mary, [PRO, to fix the car]

In this construction, the matrix predicate is ditransitive and contains a subject, *John*, an object, *Mary*, and a controlled complement clause. The embedded predicate is monotransitive and contains a lexical object, *the car*, while the subject remains unexpressed. Within each
event, every participant is assigned an individual thematic (θ)-role (cf. Gruber 1965; Jackendoff 1972).7 In the matrix clause, John is the Agent and Mary the Addressee of the ask-predicate. In the embedded clause, the car is the Theme of fix, and although no Agent is expressed, it is nonetheless interpreted, namely, as Mary. The Theta Criterion provides a principled way to distinguish the thematic role of Addressee assigned by the matrix verb to its object from the θ-role of Agent assigned by the embedded predicate to its subject. Therefore, it is concluded that the embedded clause contains an empty subject position, PRO, to which the Agent role of the embedded predicate is assigned.

A similar analysis can be applied to sentences with a controlled adjunct clause. For instance, the embedded Small Clause (SC) adjunct in (22) expresses a State formed by the adjectival predicate. This predicate selects an Experiencer subject. At the same time the matrix verb arrive independently selects an internal argument, which is realized as the subject, i.e. Mary.

(22) Mary, arrived [PRO, totally exhausted]

The matrix subject Mary is assigned its thematic role by the matrix predicate, and the embedded PRO subject is assigned its own θ-role by the embedded predicate. It is only through control that the embedded subject is interpreted as referring to the same person as the matrix subject.

Traditionally, the difference between lexical DPs and PRO has been related to the absence of structural Case assignment to the position where PRO is licensed, and the requirement of structural Case where overt DPs are licensed. The fact that Case is assigned to lexical DPs can be shown by replacing the proper names in (20) by pronouns, as illustrated in (23).

(23) {She/He}, asked {him/her}, [PRO, to fix the car]

The different morphological forms of these pronouns show that subject DPs are assigned nominative Case and object DPs are assigned accusative Case. If a certain structural position is not assigned case, no lexical DP is licensed in such a position, as illustrated in (24).

---

7We will adopt the distinction first introduced by Williams (1981), by which thematic roles assigned by a predicate to its subject are external θ-roles, and thematic roles assigned by a head to a complement are internal θ-roles.
(24) Mary, arrived (*the house) [PRO; totally exhausted]

The Case-filter ensures that lexical DPs can only be licensed when they are assigned Case.

(25) The Case Filter
Overt NPs [i.e. DPs] must be assigned abstract case.

(Chomsky 1981: 49, 175)

Case is ‘abstract’, because not all overt DPs are morphologically marked for Case, so that distinctions between nominative and accusative DPs are not always visible. The licensing requirement for overt DPs does not require the DPs to have thematic content, so that overt expletive DPs are also licensed by the Case Filter. As PRO does not alternate with overt DPs, it was concluded that the position in which PRO is licensed must not be assigned structural Case.

1.2.2. PRO and Government Theory

In the generative tradition there have been many proposals with respect to the mechanism of Case assignment and the licensing of lexical DPs. In the Lectures on Government and Binding (LGB) approach (Chomsky 1981), Case is assigned under government. Although we will ultimately adopt a different approach to Case assignment, the notion of government has played an important role in the development of syntactic theory, not only with respect to Case assignment, but also with respect to binding (to be discussed in the next section), so that I will briefly introduce the syntactic notion of government. The notion of government was originally defined to describe structural relations between lexical heads (A\(^o\), P\(^o\), N\(^o\), V\(^o\)) and their selected complements, on the basis of c-command relations.

(26) C-command
Node A c-commands node B iff
(a) A does not dominate B and B does not dominate A; and
(b) the first branching node dominating A also dominates B.

(Haegeman 1991: 122)

According to this definition, V\(^o\) in (27) c-commands DP, and all the nodes under DP, i.e. SpecDP, D\(^\prime\), D\(^o\) and NP. V\(^o\) does not c-command V\(^\prime\), because V\(^\prime\) dominates V\(^o\).
This c-command relation, however, is not restrictive enough to describe the relation between a verb and its thematically (θ-)selected complement, as in (28).

(28) a  John read that book

b  V'

V'  DP

read  Spec  D'

D'  NP

that book

The relation between a head and its selected complement can be described in terms of a government relation, where the notion of government is defined as in (29).

(29) **government**

A governs B iff

(i) A is a governor; and

(ii) A c-commands B and B c-commands A.

(Haegeman 1991: 123)

In this definition it is assumed 'that governors are heads' (Haegeman 1991: 123). As this notion of government is based on the idea of mutual c-command, only the DP in (27) and (28) is governed by V', but not the nodes under DP, since although these are c-commanded by V', they themselves do not c-command V'. The relation between a lexical head and its θ-selected complement is a relation of θ-government.

In the GB-framework, the structural relation of government between a head and the node it governs is also the relation by which structural accusative Case is assigned. The government relation for
structural Case assignment works fine with respect to the Case-assignment of a verb or preposition to its direct object, as in (28). The definition of government in (29) cannot, however, account for the fact that also certain types of embedded subjects are marked for structural accusative Case, because there is no relation of mutual c-command between an embedded subject and a matrix verb, as is illustrated by the example in (30a).

(30) a  John believed [IP her to be a liar]
     b  John tried [CP [IP PRO/\*herself to be honest]]

By definition (29) it is expected that the embedded subject positions in (30) are not Case-marked by the matrix verb, so that it is correctly predicted that (30b) cannot host an accusative subject DP. The fact that (30a) is grammatical with an accusative embedded subject leads to the conclusion that either the definition for government based on mutual c-command is incorrect, or structural accusative Case is not assigned under government. Although I believe the latter view to be correct, I will first discuss the former view, because this view has had an important impact on syntactic theory.

In order to be able to analyze the specifier position as a potentially governed position, the definition of government was altered in various ways. In order to include the specifier as a position transparent for government, the requirement of mutual c-command was reduced to the requirement that the governor c-command the governed element and in order to exclude lower material from government the idea was introduced that an intervening maximal projection is a ‘barrier’ to government (Chomsky 1986a). The revised definition of government is given in (29').

(29') government
   a  A governs B iff (i) A [c]-commands B
        (ii) there is no barrier;
   b  Maximal projections are barriers to government;
   c  Governors are heads.

     (Haegeman 1991: 125)

Furthermore, it was argued that a maximal projection only qualifies as a barrier when it is not L-marked (i.e. not θ-governed by a lexical head), or when it dominates another maximal projection which functions as a Blocking Category (BC), because the latter is not L-marked (cf. Chomsky 1986a). This type of structural accusative Case assignment to a governed specifier is known as Exceptional Case
Marking or ECM. The difference between the ECM and the PRO-construction in (30) can now be explained, because the CP in (30b), although L-marked, inherits barrierhood from the BC IP, so that PRO in SpecIP is protected from outside government and Case assignment. The complement clause in (30a), on the other hand, is an L-marked IP, so that SpecIP is transparent for outside government, and the subject is Case-marked by ECM. The idea that the complement clause in (30a) is a reduced IP is motivated by the fact that if something intervenes between the Case-assigning matrix verb and the embedded subject position, this prevents the Case-marking of the embedded subject, as illustrated by the intervening adverb in (30’a). Even if a CP is empty, it would present a barrier for Case-assignment under government to the embedded SpecIP position.

(30’)

\[ a \quad ^*\text{John believed strongly } [\text{IP her to be a liar}] \]
\[ b \quad \text{John; asked Mary, } [\text{CP what k [IP PRO; to fix } t_k]] \]

The idea that a CP is structurally present in (30b) is supported by the fact that controlled complements of interrogative verbs may have a \textit{wh}-element in SpecCP, as shown in (30’b). Other barriers are subject and adjunct clauses, because these are not L-marked.

Another modification proposed with respect to the notion of government is that the term c-command was extended to m-command, so that no longer ‘the first branching node’ is the reference point for structural relations, but ‘the minimal maximal projection’ has become the reference point (cf. Chomsky 1981; 1986a,b; Haegeman 1991). This extension of the definition of government is accompanied by including [+finite] Tense (or Infl) as a governor, so that structural nominative Case assignment is also subsumed under government: under an m-command definition and with finite Infl as a non-lexical governing head. This second extension makes a distinction between finite and non-finite Tense, so that PRO, although superficially in the same relation to non-finite Tense as a lexical nominative subject to finite Tense, remains un governed, because non-finite Tense is not a governor, and the embedded CP functions as a barrier for government from the higher verb under c-command. Ungoverned PRO, thus, also means Case-less PRO, which explains the complementary distribution of PRO and lexical DPs. The conclusion that PRO must be un governed is formulated in the PRO-theorem.
(31) **The PRO-theorem**  
PRO is ungoverned  

(Chomsky 1981)

In the next subsection we will see that the PRO theorem is derived from the traditional Binding Theoretic characterization of PRO. At the same time, we will see that this characterization of PRO can do no more than give an account of its distribution.

Returning to our discussion of structural Case assignment, if we want to maintain the original definition of government with reference to mutual c-command, we must find an alternative analysis for Case assignment or Case checking of accusative subjects of non-finite clauses and nominative subjects of finite clauses, since the accusative subject does not c-command the Case-assigning verb, and finite tense does not c-command the subject it assigns nominative Case to.

Such an analysis has been proposed in Chomsky (1993, 1995). In this view, structural Case features are checked in a local specifier-head relation, where a DP with certain structural Case features moves to a specifier of a functional projection, the head of which needs its Case features checked. Whether the checking relation is made visible in the syntax through overt movement of the relevant DP, or movement is postponed until the level of LF depends on the strength of the features. Thus, the nominative Case features in T⁰ must be checked by a nominative DP in SpecTP, and the accusative Case features in AgrO⁰ (the object agreement head) must be checked by an accusative DP in SpecAgrOP, as illustrated in (32).

(32) **Spec-Head relation for structural Case assignment**

\[
\begin{array}{c}
TP \\
\quad\downarrow \\
\quad\text{DP} \\
\quad\text{[+nomin]} \\
\quad\text{T'} \\
\quad\downarrow \\
\quad\text{T⁰} \\
\quad\text{AgrOP} \\
\quad\text{[+nom]} \\
\quad\downarrow \\
\quad\text{Spec} \\
\quad\text{AgrO'} \\
\quad\text{[+acc]} \\
\quad\downarrow \\
\quad\text{AgrO''} \\
\quad\text{[+acc]} \\
\quad\downarrow \\
\quad\text{VP} \\
\end{array}
\]
In this representation, the m-command relation for the assignment of
nominaive Case under government has been replaced by a local
Spec-Head relation by which the finite Tense head checks
nominaive Case in its local Specifier. Accusative DPs, such as direct
objects and embedded 'ECM'-subjects must raise to SpecAgrOP to
test the accusative Case features of the transitive verb.

I will adopt this feature-checking analysis of structural Case
checking for both nominative and accusative Case, and assume that a
CP is a barrier for this type of A-movement. Thus, the embedded
subject in (30a) may raise to check accusative Case, because the
barrihood of CP has been lifted, but raising of the embedded
subject in (30b) is blocked by the intervening CP.

The assumption, however, that structural nominative Case is
only assigned by finite Tense, is problematic for the visibility of
PRO. As PRO is a subject with a thematic role, its syntactic
presence must be formally licensed. For lexically realized arguments
and pro, syntactic visibility is ensured by a Case position in the
argument chain. As PRO has no Case under the traditional analysis,
it is licensed by stipulation, as illustrated by the formulation of the
Visibility Condition.

(33) Visibility Condition on thematic roles
A chain is visible for θ-marking if it contains a Case
position (...) or is headed by PRO.


As such a stipulation is an undesirable way of accounting for the
syntactic presence of a PRO subject, Chomsky & Lasnik (1993)
proposed that PRO is assigned a special null Case from infinitival
Tense. I adopt their basic idea that PRO is Case-marked, but
propose that Tense, whether finite or non-finite, always assigns
nominative Case, so that PRO can be syntactically identified in the
same way as other arguments. As a consequence, although structural
Case is still essential for the licensing of lexical nominative DPs, it is
no longer sufficient. If we adopt the view that non-finite Tense, as a
predicational operator, may also assign structural Case to its specifier
to license its subject, other factors must be involved in the licensing
of lexical nominative DPs. From the examples so far, we may
conclude that finiteness is at least one licensing feature for the lexical
realization of nominative DPs. In chapter 3, this is discussed in more
detail.
1.2.3. **PRO and the Binding Theory**

The Binding Theory (BT) (Chomsky 1981) is concerned with the referential properties of DPs. According to the BT, there are three types of argument DPs: anaphors, pronouns and referential (R-)expressions. Anaphors must always be antecedent-bound to a local argument, pronouns may refer to a higher argument, but never in their local domain, and R-expressions are never argument (A-) bound, but have independent reference. The BT provides a definition of locality domain in terms of government, which has led to the following binding principles.

(34) **Binding Theory**

A  an anaphor must be A-bound in its governing category
B  a pronoun must be A-free in its governing category
C  an R-expression is A-free

(Chomsky 1981: 188)

where a governing category (GC) is defined as in (35).

(35) **governing category**

The governing category for A is the minimal domain containing A, its governor and an accessible subject/SUBJECT, where

a  SUBJECT corresponds to agreement features (AGR),

b  A is an accessible subject/SUBJECT for B if the coindexation of A and B does not violate any grammatical principles.

Haegeman (1991: 229)

By binding principles A and B, it is possible to define a locality domain in which anaphors must be bound, and pronouns must be free. As PRO is an empty DP underspecified for identifying \( \phi \)-features, it is dependent on an antecedent (or controller) for a referential interpretation, so that it may be expected that either principle A or principle B is involved in determining the reference of PRO depending on whether it must always be locally A-bound or not. Examples of anaphoric and pronominal binding are given in (36).

(36) a  John, told Mary, [that he, hurt himself,/*herself,]
       b  John, told Mary, [that she, hurt him,/*her,/*her\textsubscript{s/v}/]

In (36a), the embedded object is a reflexive. Reflexives are anaphors; they need a local antecedent to which they can be A-bound. The
locality domain is the embedded clause, because it contains a governing verb, *hurt*, and an accessible subject, *he*. Thus the anaphor must find an antecedent in the embedded clause, which is the embedded subject. The matrix object is outside the local domain for anaphor binding, so that *herself* is ungrammatical. In (36b), the embedded clause is also the local domain for binding purposes, because it contains a governing verb, *hurt*, and an accessible subject, *she*. The embedded subject pronoun may have the matrix object as antecedent, because the matrix object is outside the locality domain, and has matching agreement features. The embedded object may not have the embedded subject as an antecedent, because they are both in the same locality domain. The embedded object may have the matrix subject as its antecedent, or an antecedent in the wider context.

The conditions of the BT can also be applied to the referential relations of empty elements (cf. Brody 1985), as in (37).

(37) a John, said that James, seems [IP t_i/s_j to have talked too much]

b Giacomo, ha detto [CP che [IP pro_v_i ha parlato]]

Giacomo has said [that [(he) has spoken]]

c *Who_i does he_i think t_i left ?

The raising example in (37a) illustrates that a trace is obligatorily bound to a locally c-commanding antecedent, because the embedded subject cannot be bound by the higher subject. The complement clause of the raising verb *seem* does not form a barrier for government from this verb, as we saw above, so that the governing category for local binding of the anaphoric DP-trace is the clause headed by *seem*. Therefore, the trace is obligatorily bound to the DP in subject position of the *seem*-clause.

A language like Italian is a so-called *pro*-drop language, which means that (non-emphasized) pronominal subjects may be left implicit. *Pro*-subjects like the one in (37b) (from Haegeman 1991: 413) behave like pronouns in the sense that they may not be locally A-bound, but they may freely corefer outside their local governing category. In this example the GC is the embedded *che*-clause, because it contains a governor, i.e finite Tense, and an accessible subject, i.e. AGR, besides the *pro*-subject. *Pro* may thus be coreferential with the higher subject, because this is outside the GC, but it may also be interpreted in the wider context.

Finally, the strong crossover example in (37c) (from Haegeman 1991: 380) contains a variable bound by a *wh*-operator. This example
illustrates binding condition C, showing that the variable cannot be A-bound to the pronominal subject *he*. Instead, it must be A-bar bound to the operator *who*.

The BT takes the properties $\pm$anaphoric and $\pm$pronominal as the defining properties for the classification of both lexical and empty DPs. Lexical anaphors are $[+\text{anaphoric}; -\text{pronominal}]$, lexical pronouns are $[-\text{anaphoric}; +\text{pronominal}]$, and referential expressions are $[-\text{anaphoric}; -\text{pronominal}]$. The empty counterparts of these three are DP-traces, *pro* and variables, respectively. If we put these empty DPs in a diagram, it turns out that there is one combination of features which does not have a lexical representative, but is available for PRO, namely the combination of $[+\text{anaphoric}; +\text{pronominal}]$ properties. This is represented in (38).

(38) classification of empty categories

<table>
<thead>
<tr>
<th></th>
<th>anaphoric</th>
<th>pronominal</th>
</tr>
</thead>
<tbody>
<tr>
<td>DP-trace</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td><em>pro</em></td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>variable</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>PRO</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

In many instances, it seems that the empty element PRO does, indeed, combine both anaphoric and pronominal binding properties in one. In section 1.1.2, for instance, we saw that the examples in (2) show instances of an obligatorily bound PRO, whereas the examples in (3) and (4) show evidence of (sometimes) unbound PRO. For this reason, the LGB analysis concludes that PRO has both pronominal and anaphoric characteristics, and that it is, therefore, a pronominal anaphor (Chomsky 1981). However, the analysis of PRO as a pronominal anaphor yields three major problems within GB-theory.

First, if PRO is a pronominal anaphor, the simultaneous application of principles A and B of the BT yields a contradiction, because PRO cannot be simultaneously bound and free in the same local domain. Therefore, it was concluded that PRO does not have a governing category. This conclusion derives the GB-characterization of PRO as described in the previous section, namely as an ungoverned empty element. The ungoverned status of PRO is compatible with the observation that PRO and lexical DPs are
generally complementary in distribution, since lexical DPs must be assigned Case, and Case assignment works under government. If PRO is ungoverned, however, its anaphoric relations cannot be systematically accounted for, since without a governor a binding domain cannot be defined.

Second, if PRO is always pronominal as well as anaphoric, we would expect that it always has anaphoric properties, so that there must always be an A-binder in some local domain. The examples in (3) and (4), however, show that this is not borne out, since PRO can be licensed without a lexical antecedent.

Third, although the PRO-theorem is generally able to account for the distribution of PRO, it may be argued for languages like Belfast English, Dutch and French that PRO is often governed by a lexical complementizer, as illustrated in (39).  

(39) a I tried [for PRO to get them] (BE, Henry 1992)  
     b Ik probeerde [om PRO ze te krijgen] (Dutch)  
        I tried [for PRO them to get]  
     c Jean essaie [de PRO comprendre] (French, Kayne 1991)  
        Jean tries [for PRO to-understand]

Even if one should argue that these complementizers are not proper governors (cf. Kayne 1991), the characterization of PRO as ungoverned only indicates that a lexical DP is not licensed, but it does not explain why an empty θ-selected argument is licensed, since it does not provide licensing features for the syntactic visibility of PRO.

In conclusion, the pronominal anaphor analysis of PRO and the PRO-theorem yield at least three major problems which call for a solution. First, if PRO is ungoverned, it is impossible to define a locality domain for either its anaphoric or its pronominal properties (i.e. the locality problem). Second, if PRO is always a pronominal anaphor it is not expected that it can ever be licensed without a syntactic antecedent to which it can be A-bound in some local domain (the unbound PRO problem). And third, it is an undesirable consequence of Case-less PRO that its syntactic presence cannot be accounted for in a structural way, but must simply be stipulated, as in the Visibility Condition in (33) (i.e. the visibility problem). In an attempt to resolve these problems, I propose a different analysis in

---

the next section.

1.3. Proposal and outline

1.3.1. The Proposal

The main hypothesis of this book is that PRO is to be analyzed uniformly as a pronoun. This hypothesis immediately solves the ‘unbound PRO problem’, because pronouns need not be bound in order to be licensed.

(40) Hypothesis 1

PRO is always a pronoun

Second, the idea that PRO is a pronoun may also solve the ‘locality problem’ for PRO, if the locality domain for PRO can be defined in such a way that it is restricted to the clause of which PRO itself is the subject. If we can define the embedded clause as the local domain for PRO any coreference relation outside this embedded clause is compatible with the pronominal nature of PRO.

(41) Hypothesis 2

The locality domain for PRO is the embedded clause of which PRO is the subject.

Third, the hypothesis may also solve the ‘visibility problem’ of PRO, since if PRO is a pronoun, it must be independently licensed by structural Case. Thus if we can show that PRO is formally licensed as a pronoun by structural Case, PRO will automatically be visible to the syntax because of this structural Case.

(42) Hypothesis 3

PRO is formally licensed by structural Case

If PRO is indeed an empty pronoun, three new interrelated questions arise and must be accounted for, namely (1) how is PRO content-licensed; (2) how should we analyze the apparent anaphoric behavior of PRO in certain cases; and (3) how should we explain the complementary distribution of PRO and overt DPs?

With respect to the first question, I propose that the content of PRO can be licensed in two ways. First, if PRO has no lexical
controller and nonetheless receives an arbitrary interpretation, it must be minimally content licensed by morphology which is underspecified for agreement features. Second, if there is no such morphology, PRO must be controlled.

(43) Hypothesis 4

PRO is content-licensed by underspecified morphology or control

I propose that infinitival endings like Dutch -en and infinitival markers like English to may minimally identify PRO for underspecified $\phi$-features, so that PRO is content licensed for an arbitrary interpretation.

In cases where there is no minimal content-identifying morphology for PRO, the apparent anaphoric properties of PRO are thus explained by the requirement of local content identification for empty pronouns. In cases where there is minimal content-identifying morphology, however, the semantics of the control construction may cause the apparent anaphoric behavior of PRO.

The fact that PRO is generally complementary in distribution with lexical subjects is accounted for by arguing that, in addition to nominative Case, there are language specific requirements, such as the presence of finiteness or agreement features, for the licensing of lexical subject DPs.

1.3.2. Outline

The remainder of this book has been divided into three parts. Part II, consisting of chapters 2, 3 and 4, deals with the syntactic behavior of PRO; Part III, consisting of chapters 5 and 6, is concerned with the interpretation of PRO; and Part IV contains the concluding chapter.

In chapter 2 I discuss alternative approaches to the LGB-analysis of the nature of PRO and conclude that (pronominal) anaphoric analyses of PRO are always left with the the ‘locality problem’ and the ‘unbound PRO problem’. I propose that both these problems can be solved if we assume that PRO is a pronoun.

In chapter 3, the distribution of PRO is discussed. It is argued that (pronominal) anaphor analyses of PRO do not adequately account for its distribution, because in these analyses PRO cannot be syntactically licensed. Alternatively, I propose that if we adopt the idea that PRO is a pronoun, it can be formally licensed by structural
nominative Case assigned by non-finite Tense to its specifier. The complementary distribution with overt DPs is ensured by the absence of further (language specific) licensing factors for lexical DPs.

Chapter 4 is a comparative case study of the Dutch permissive and causative verb laten and the English equivalents let and have. The analysis shows that the pronominal analysis for PRO argued for in the preceding chapters provides an adequate way to account for empty subjects of selected bare infinitival complements (i.e. te/to-less infinitives). It will be shown that both Dutch laten and English let/have have a monotransitive and a ditransitive variant. It is argued that, in the latter case, the embedded subject of bare infinitival complements should be analyzed as a PRO subject.

Chapter 5 has a descriptive content, which lays the basis for two case studies in the next chapter. In the first part of chapter 5, I discuss various views from the literature which relate to the interpretation of PRO. From this discussion I conclude that the interpretation of PRO is subject to semantic and contextual factors. In the second part of this chapter, I classify verbs according to type of control relation. While some verbs are lexically specified for an invariant subject or object control relation, other verbs appear to allow shifts in their control relations. It is constructions of the latter type which are the basis for one of the case studies in the next chapter.

In chapter 6 I discuss two types of control shift. One type involves infinitival complement clauses with a deontic interpretation. The other type of control shift involves infinitival relatives which may contain an empty object position. Both types of control shift support our initial hypothesis that PRO is a pronoun, since control shift shows that PRO, unlike anaphors, need not always be related to the nearest matching antecedent.

Chapter 7 recapitulates the most important conclusions of the present study.
Part II

An Alternative Proposal
2.1. Introduction

In this chapter I argue that the characterization of PRO as a pronoun offers a solution to the three problems of locality, unbound PRO and visibility. The chapter is divided into three parts. First, I will present in more detail my motivation for the analysis of PRO as a pronoun. Second, I will discuss various alternative analyses of the nature of PRO (Chomsky 1981, 1986a,b; Manzini 1983; Bouchard 1984, 1985a,b; Koster 1984; Bennis & Hoekstra 1989a; Borer 1989; Huang 1989; Vanden Wyngaerd 1990, 1994; Kayne 1991), showing that anaphoric analyses are unable to solve, in a uniform way, the three problems mentioned above. In the last section, I propose an alternative analysis of PRO as a pure pronoun.

2.2. Further motivation for PRO as a pure pronoun

The main motivation for analyzing PRO as a pronoun is that PRO frequently behaves in ways which are unexpected if PRO has anaphoric properties. In the previous chapter, we saw that there are at least five arguments which support a pronominal analysis of PRO: (1) the same default reference for lexical subjects in equivalent finite clauses, (2) the possibility of control shift, (3) the possibility of split-antecedents, (4) the occurrence of an independent arbitrary interpretation, and (5) the occurrence of long distance control. In this section I discuss this behavior in some more detail.

The examples in (1) and (2) show that the referential relations of PRO are paralleled by the default referential relations of lexical pronominal subjects.
CHAPTER 2

(1) a John, tried [PRO\textsubscript{\textit{i}/\textit{~k}} to unlock the door]
b John, promised Marty\textsubscript{j} [PRO\textsubscript{\textit{i}/\textit{j}/\textit{~k}} to fix the car]
c John, asked Marty\textsubscript{j} [PRO\textsubscript{\textit{i}/\textit{j}/\textit{~k}} to fix the car]
d Peter, remembered [PRO\textsubscript{\textit{i}/\textit{~k}} locking the door]
e It is fun for Jane\textsubscript{i} [PRO\textsubscript{\textit{i}/\textit{~k}} to play badminton]
f Mary\textsubscript{j} arrived [PRO\textsubscript{\textit{i}/\textit{~k}} totally exhausted]
g John, came home [PRO\textsubscript{\textit{i}/\textit{~k}} a wiser man]
h Kate, left [PRO\textsubscript{\textit{i}/\textit{~k}} in a foul mood]

(2) a John, tried [whether he\textsubscript{\textit{i}/\textit{~k}} could unlock the door]
b John, promised Marty\textsubscript{j} [that he\textsubscript{\textit{i}/\textit{j}/\textit{~k}} would fix the car]
c John, asked Marty\textsubscript{j} [if he\textsubscript{\textit{i}/\textit{j}/\textit{~k}} would fix the car]
d Peter, remembered [his\textsubscript{\textit{j}/\textit{~k}} locking the door]
e It is fun for Jane\textsubscript{i} [that she\textsubscript{\textit{i}/\textit{~k}} can play badminton]
f When Mary\textsubscript{j} arrived [that she\textsubscript{\textit{j}/\textit{~k}} was totally exhausted]
g When John, came home [he\textsubscript{\textit{j}/\textit{~k}} was a wiser man]
h When Kate, left [she\textsubscript{\textit{j}/\textit{~k}} was in a foul mood]

What is important to see is that the referential parallel between the lexical pronominal subjects in (2) and PRO in (1) is not restricted to the complement clauses in sentences (a-d), but also obtains for subject clauses (e) and adjunct clauses (f-h).

The fact that the lexical subject in (2a) cannot refer to a participant in the wider context suggests that lexical semantic properties of the matrix verb try restrict the possible interpretations of the embedded subject, even when this subject is lexically realized. Similarly, in the case of promise, although the embedded subject in (2b) may refer to a participant in the wider context, it may not corefer with the matrix object, although this is a potential antecedent outside the local domain of the pronoun. In the case of ask, the embedded lexical subject in (2c) cannot corefer with the matrix subject, although this is outside the local domain of the pronominal subject. This suggests that in these cases there are also semantic restrictions on the referential relations of the embedded subject.

The examples in (1d) and (2d) both contain a gerundive complement clause. These examples show that in these particular circumstances, a lexical pronominal subject may alternate with an empty subject, which is a characteristic of empty pronominals.\(^1\)

\(^1\)As the lexical pronoun does not have nominative, but genitive Case, and there are no identifying agreement features for the empty subject, I will refer to the latter as PRO, rather than pro. The distinction between pro and PRO, however, is merely notational, since I argue in this study that PRO is a pure pronoun, like pro.
default reference of the lexical pronoun is the matrix subject. This referential relation shows that the embedded clause is an independent local domain for binding purposes, i.e. the minimal domain where the pronoun is free. If the local domain for the empty subject is also the embedded gerundive clause, the characterization of PRO as a pronoun is very well compatible with the fact that the empty subject is also interpreted as the matrix subject. The fact that an accusative pronominal subject cannot be coreferent with the matrix subject, supports a raising-to-object analysis of ECM-subjects, as in (3).

(3) Peter, remembered him_{4/1} [t locking the door]

By raising of the embedded pronominal subject into the higher clause, the matrix subject has become the accessible subject for the definition of the binding domain. As a consequence, a coreference relation between the matrix subject and the raised subject would lead to a violation of binding principle B. As the PRO subject in (1d) does not raise outside the embedded clause, an anaphoric analysis of PRO is problematic, because there is no lexical antecedent in this local domain.

The examples in (1e-h) and (2e-h) suggest that the local domain for PRO is indeed the same as the local domain for lexical pronominal subjects, since the embedded clauses in (1e) and (2e) are extraposed subject clauses and the embedded clauses in (1f,g,h) and (2f,g,h) are adjunct clauses. In a GB-analysis, these two types of clauses constitute an independent binding domain, because they are not θ-governed by the higher verb. In this respect there is no difference between finite, non-finite or verbless adjunct clauses. If this is correct, then the obligatory control relations in (1f,g,h) cannot be anaphoric relations because the antecedent is outside the local binding domain of PRO. If PRO is thus a pronoun, the fact that the lexical pronouns may have an interpretation in the wider context, if any, whereas PRO may not must be explained in a different way. In section 2.4. I argue that this is related to the fact that lexical pronouns are inherently specified for φ-features, while the PRO is not.

Another typically pronominal property of PRO is that PRO allows its control relation to shift. We saw in (1a-d) that only one of the matrix arguments could function as the controller for PRO. The examples in (4), however, show that with the addition of a passive,

---

I use the notation PRO for empty pronouns which occur in an environment without local identifying φ-features.
an interrogative and/or a modal expression in the embedded clause the reference of both PRO and lexical pronominal subjects will shift.

(4) a John, promised Marty, [PRO_{i,j} to be allowed to fix the car]
b John, asked Marty, [how PRO_{i,j} to fix the car]
c John, promised Marty, [that he_{i,j} would be allowed to fix the car]
d John, asked Marty, [how he_{i,j} should fix the car]

If PRO has anaphoric properties, we would not expect this kind of control shift. Instead, we would wrongly predict that PRO should always be bound by the object, because PRO is underspecified for φ-features, so that the object is the nearest matching antecedent. The fact that PRO in the interrogative clause in (4b) may also have independent arbitrary reference supports a pronominal analysis of PRO even more.

Although it may be argued, on the basis of examples like (5), that reflexive anaphors also allow their reference to shift, I believe that these shifts are possible through mediation of a PRO subject.

(5) a John, gaf Marty, een boek voor zichzelf_{i,j}
John gave Marty a book for himself
b John, gaf Marty, een boek van zichzelf_{i,j}
John gave Marty a book from/by himself
c John, gaf Marty, een boek over zichzelf_{i,j}
John gave Marty a book about himself
d John, gaf Marty, een boek voor hemzelf_{i,j}
John gave Marty a book for himself
e John, gaf Marty, een boek van hemzelf_{i,j}
John gave Marty a book from/by himself
f John, gaf Marty, een boek over hemzelf_{i,j}
John gave Marty a book about himself

The Dutch reflexive zichzelf (=herself/herself) is always to be analyzed as an anaphor. Unlike English, Dutch has an emphatic pronoun, which is morphologically distinct from the anaphor, namely hemzelf or haarzelf. The problem for the idea that the prepositional objects in (5a,b,c) stand in a direct anaphoric binding relation with one of the higher arguments is that the reflexive anaphors are embedded within adjunct PPs, so that their antecedents do not share the same local domain. This problem may be solved, however, if we assume that the PP-adjuncts contain a PRO subject.
(cf. Koster 1993), so that the anaphors may be locally bound to this PRO. As PRO itself may vary in its referential relations, the apparent referential shift for the anaphors may thus be attributed to the varying referential relations of PRO.

Third, a pronominal analysis of PRO is also motivated by the fact the PRO, like lexical pronouns, may sometimes have a split antecedent, as in (6a).

(6) a  John, suggested to Mary, [PRO_{i+j} to go to the pictures (together)]
   b  John, suggested to Mary, [that they_{i+j} go to the pictures (together)]
   c  Barbara, suggested to Michael, their_{i+j}/each other_{i+j}'s new CD as a present for Bill
   d  John introduced Mary to himself/herself/\*themselves/\*each other

The example in (6a) shows that PRO has the same split-referential relation with the matrix subject and indirect object as the lexical pronoun in (6b). The examples in (6c,d) show that anaphors do not allow split antecedents, in spite of the fact that the subject is the antecedent of the reflexive himself and the object is the antecedent of herself. As PRO in (6a) can have a split antecedent, it must be concluded that PRO cannot be an anaphor. The examples in (7) provide further support the hypothesis that PRO is a pronoun, since an embedded anaphor cannot have a split antecedent.

(7) a  \*John, wanted Mary, [t_i to help themselves_{i+j}/each other_{i+j}]
   b  John, agreed with Mary, [PRO_{i+j} to help themselves_{i+j}/each other_{i+j}]
   c  John, had an agreement with Mary, [PRO_{i+j} to help themselves_{i+j}/each other_{i+j}]

The raising-to-object construction in (7a) shows that a split-antecedent relation is disallowed for reflexive anaphors. The control constructions in (7b,c), however, show that a PRO subject can have a split-antecedent.

The fact that PRO does not always need a syntactically realized local A-binder constitutes a fourth argument for its pronominal status. Consider the examples in (8), where the (c) and (d) examples are from Lebeaux (1984).
(8)  a. It is better for the environment [PRO to be more careful with toxic waste]
    b. This is a book [PRO to stick pictures in]
    c. [PRO to know him] is [PRO to love him]
    d. In this prep school, [PRO eating by oneself] is highly disapproved of

In these examples, PRO has independent generic reference, without being linked to a higher argument. Although it may be suggested that examples like (8a) contain an implicit Possessor within the Beneficiary or an implicit Addressee argument selected by the matrix predicate better, I will show that these cannot serve as anaphorically related antecedents for PRO. Consider the examples in (9).

(9)  a. It is better for myi environment [PROi/arbh to be more careful with toxic waste]
    b. It is better (for you/us,) [PROi/arbh to be more careful with toxic waste]
    c. It is better ("for you,;) for my environment [PROi/arbh to be more careful with toxic waste]
    d. I told him, that it is better for myi environment [PROi/j/arbh to be more careful with toxic waste]

The possessive pronoun my in (9a) is embedded within a DP under a PP. In this position my does not c-command PRO in the embedded clause. Moreover, the possessive pronoun my and PRO do not share the same local domain, the subject clause being the local domain for PRO, and the PP being the local domain for the possessive. The subject clause is an independent binding domain, because it is not θ-governed by the matrix selectional head (cf. Chomsky 1986a); and the PP is an independent local domain for my, because the (possessive) pronoun itself is the accessible subject of this phrase, i.e. the relevant opacity factor for defining a local binding domain (cf. Chomsky 1986b). Therefore, PRO and my can only be related by pronominal coreference.

The indexing of PRO in (9a) shows that the empty subject is not obligatorily interpreted as coreferent with the possessor, but may also have an arbitrary interpretation. The example in (9b) indicates that a lexically realized Beneficiary with the required lexical properties must control PRO, while an implicit Beneficiary yields an arbitrary interpretation for PRO. The example in (9c) shows that a controlling Beneficiary cannot be syntactically represented simultaneously with a non-controlling Beneficiary. This leads to the
conclusion that, in cases where there is a syntactically realized non-controlling Beneficiary, PRO is licensed without being syntactically A-bound.

The fact that the Addressee argument in the highest clause in (9d) may control PRO provides further evidence for the hypothesis that PRO is a pronoun. The finite *that*-clause clearly marks off a local domain for anaphor binding, so that the relation between PRO and *him* must be one of pronominal coreference. The coreference relation in (9d) is an instance of long distance control (LDC). Below we will discuss LDC relations in more detail. First, however, I would like to point out that the finite equivalents of the sentences in (9) provide further support for the claim that PRO is a pronoun.

\[(10)\]

\[a\] It would be better for my \_ environment [if \{I, am\}/\{one is\} more careful with toxic waste]

\[b\] It would be better (for you/us) [if \{you/we are\}/\{one is\} more careful with toxic waste]

\[c\] I told \_ him, that it would be better for my \_ environment [if \{I, am\}/\{he/one is\} more careful with toxic waste]

The fact that *my* in (10a,c) can be coreferent with the embedded subject *I* in the same way as with the embedded PRO subject in (9a,d) supports the hypothesis that PRO, like *I*, is a pronoun rather than an anaphor, because the two coreferent arguments are in different binding domains. The lexical indefinite pronoun *one* in all three examples in (10) is mirrored by the possibility of an arbitrary interpretation of PRO in (9). Finally, the LDC relation in (9d) is reflected in the long distance coreference relation between *he* and *him* in (10c). In all these extraposed subject clauses, PRO appears to behave in the same way as a lexical pronoun.²

With respect to the infinitival relative in (8b), it is important to see that the ungrammaticality of a lexically realized Possessor or Beneficiary also supports the idea that PRO can be licensed without the presence of a syntactically local A-binder. Consider the examples in (11).

²The only difference between PRO and a lexical subject in these subject clauses is that PRO may not be disjoint from a potentially controlling Beneficiary in the matrix clause, while a lexical pronoun can. I believe this can be explained by the fact that lexical pronouns are inherently specified for φ-features, while PRO is not.
(11) a This is a book [PRO to stick pictures in e]  
b *This is your book [PRO to stick pictures in e]  
c *This is a book for you [PRO to stick pictures in e]  
d This book is for you; [PRO; to stick pictures in e]

In (11a-c), the embedded clause is an infinitival relative to book, but in (11d) the embedded clause is a purpose adjunct. The constructions in (11b,c) show that the infinitival relatives do not license a Possessor or Beneficiary argument in the matrix clause. Therefore, in these cases PRO must be licensed without a syntactically present controller. This supports a pronominal analysis of PRO. In example (11d), the Beneficiary can be expressed as an argument of be, which may thus serve as controller for PRO. The controlling argument is embedded within the for-PP, so that, strictly speaking, it does not c-command PRO, and an anaphoric binding relation cannot be established between the controller and PRO. Moreover, as both infinitival relatives and purpose clauses are adjuncts, they constitute an independent binding domain, so that the hypothesis that PRO is a pronoun is fully compatible with the fact that it is coreferent with an antecedent outside its own clause.

When we compare the sentences in (11a,d) to their finite equivalents, the pronominal status of PRO is supported by the fact that the finite subjects are also pronouns.

(12) a This is a book [which; one/you may stick pictures in e]  
b This book is for you; [so that you may stick pictures in it]

For examples like those in (8), it was argued that, because of its generic reference, PRO is unselectively bound by a universal operator in the matrix (Lebeaux 1984; Epstein 1984) or the embedded (Rooryck 1992) clause. In these views, the analysis of embedded operator-bound objects, like those in (11) and (12a), carries over to empty subjects with independent arbitrary reference. Although embedded subjects may indeed sometimes be operator-bound variables, as in (13), I believe that this analysis does not carry over to the empty subjects in (8). Consider the examples in (13).

---

3If the for-phrase in (11d) does not receive a θ-role from the higher verb, it should be analyzed as an ECM (or raised-to-object position) subject of the embedded clause. The representation in (11d), however, indicates that the for-phrase receives a (Beneficiary) θ-role from the matrix verb, and controls the embedded PRO-subject.
(13) a  We need a man [who; e; can do our garden]
b  We need a man [Op; e; to do our garden]
c  *What; do we need a man [who; e; can do t;]
d  *What; do we need a man [Op; e; to do t;]
e  What; do we need this man; [t; PRO; to do t;]

The subject in (13a) is an operator-bound variable. By analogy, the empty subject in (13b) is arguably analyzed as an (empty) operator-bound variable, as well. This analysis is supported by the fact that neither the finite nor the infinitival relative allows _wb_-extraction, as shown in (13c,d). This suggests that both the _wb_-operator and the empty operator in SpecCP block movement of _what_ through the embedded SpecCP. The fact that the embedded object in (13e) can undergo _wb_-extraction can be explained if purpose adjuncts do not contain operator-bound subjects, so that the embedded SpecCP is available for the object to move through.

As the finite equivalents of (9) and (11) in (10) and (12) do not show evidence of the fact that the embedded subjects are operator-bound, neither to a _wb_-operator, nor to a universal quantifier like _every_, I will continue to assume that PRO is essentially a pronoun, which may sometimes function as an operator-bound variable, as in (13b). From the above examples, I conclude that the interpretation of PRO in subject clauses, infinitival relatives and purpose adjuncts must be analyzed in terms of pronominal coreference relations.

A final argument supporting the hypothesis that PRO is a pronoun comes from instances where PRO allows long distance control (LDC). Chomsky (1986b: 128) gives the examples in (14).

(14) a  We told them that John; is too stubborn [Op; PRO to bother β about e;]
b  I thought you said that John; is too stubborn [Op; PRO to bother β about e;]

In (14a), β may be filled in by the reflexives _ourselves, themselves_ or _oneself_ and in (14b), β may be _ourselves, myself, yourself or oneself_. This means that PRO may have an independent arbitrary interpretation, or be coreferent with LD controllers like _we, them, I_ and _you_. As _John_ is linked to the empty object variable of _about_, it cannot control PRO, because coreference between PRO and the object variable leads to a violation of principle C of the binding theory, since variables may not be A-bound. Although it may be objected that the LDC relation is mediated by an implicit matrix Beneficiary (for _us/them/me/you_), the fact that such an implicit
argument is not structurally Case-marked indicates that it is not syntactically present, so that it cannot be an antecedent of an anaphor. Moreover, the next examples show that there are instances of LDC without an anaphoric binder in the local domain as in (15a) or with a closer potential antecedent, which cannot function as controller as in (15b).

(15) a  Jan, zei tegen Piet, [dat het slecht voor zijn, plantjes was [om PRO\textsubscript{ij}/arb, ze met de nachtvoorst buiten te laten]]
     Jan said to Piet that it bad for his plants was [for PRO them with the night-frost outside to leave]
     ‘Jan told Piet that it was bad for his plants to leave them outside when it was freezing at night’

b  Jan kreeg [Maries, opdracht [om PRO\textsubscript{i/*} voor tienen bij haar, langs te komen]] pas om elf uur door
     Jan got [Marie’s order [for PRO before ten to her by to come]] only at eleven hours through
     ‘Jan received Marie’s order to call on her before ten only at eleven o’clock’

In the example in (15a) it is the matrix subject or (prepositional) object which optionally controls the most deeply embedded control clause. Even if one argues that control is mediated by the possessive pronoun \textit{zijn}, PRO is not c-commanded by this element, so that PRO cannot be an anaphor, but must be a pronoun. PRO in (15b) is the subject of the infinitival apposition to the object noun \textit{order}. The controller for PRO is not the local subject, \textit{Marie}, but the long distance subject, \textit{Jan}. A purely anaphoric approach to PRO cannot account for this example, because the DP, defined as the minimal domain for binding purposes by the opacity factor \textsc{subject}, does not contain a compatible controller. The actual controllers of (15a,b) are, therefore, long distance controllers.

It may, however, be suggested that these examples involve implicit controllers in the matrix clause after all, since the adjective \textit{slecht} (=bad) may select a Source argument \textit{van iemand} (=of someone), and the noun \textit{opdracht} may select a Goal argument \textit{aan iemand} (=to someone). However, as adjectives and nouns are not structural Case assigners it is not clear how these implicit arguments are syntactically licensed. If they are not syntactically licensed they cannot function as antecedents for anaphors. Second, the \textit{van-PP} and the \textit{voor-PP} as arguments of \textit{slecht} appear to be mutually exclusive,

\footnote{Thanks to Guido Vanden Wyngaerd (p.c.) for pointing this out to me.}
so that when the Beneficiary voor-PP is syntactically realized, the Source cannot be syntactically realized.\(^5\) Consider the examples in (16).

\[(16)\]

\(a\)  \[Jan, zei dat het slecht \textit{van hem}, \textit{voor zijn plantjes}, was [om PRO, \textit{ze}, met de nachtvoorst buiten te laten}\]

Jan said that it was bad of \textit{him} \textit{for his plants} was [for PRO them with the frost outside to leave]\]

\(b\)  \[Jan, zei dat het slecht \textit{voor zijn plantjes}, was [om PRO, \textit{ze}, met de nachtvoorst buiten te laten}\]

'Jan said that it was bad \textit{for his plants} to leave them outside when it was freezing'

\(c\)  \[Jan, zei dat het slecht \textit{van hem}, was [om PRO, zijn plantjes met de nachtvoorst buiten te laten}\]

'Jan said that it was bad of \textit{him} to leave his plants outside when it was freezing'

The construction in (16b) cannot be an instance of anaphoric binding, since the controlling argument cannot be syntactically represented in the immediately higher dat-clause. If (16b) is an instance of lexical argument control, rather than LDC, it is interpreted via coreference with the possessive pronoun within the PP, which is compatible with a pronominal analysis of PRO. The optional Source argument \textit{hem} (=\textit{him}) in (16c) is embedded within a \textit{van}-PP, from where it does not c-command PRO. When the argument is left implicit, it is not formally licensed by structural Case, so that argument control cannot be an instance of anaphoric binding.

From the above discussion I conclude that there is ample motivation for the hypothesis that PRO is a pure pronoun. Before working out this proposal in a later section (section 2.4), we will

\(^5\)For an analysis of the mutual exclusion of the lexical realization of certain arguments see Pesetsky (1995: 62). There it is proposed that mutually exclusive arguments are non-distinct with respect to their \(\theta\)-roles, although they may be distinct with respect to other semantic features. In an example like (i) (from Pesetsky 1995: 60) the Causer argument (the \textit{article in the Times}) is thematically distinct from both the Target argument (at the government) and the Subject Matter argument (\textit{Bill}), but the Target and Subject Matter arguments, although semantically distinct, are argued to be non-distinct in terms of \(\theta\)-role assignment by the selecting verb \textit{anger}.

\(i\)  \[The \textit{article in the Times} angered Bill at the government\]

Thus, Pesetsky (1995) relates the restriction on lexicalization of semantically different arguments to the idea that the mutually exclusive arguments are assigned the same \(\theta\)-role. For a more detailed discussion see Pesetsky (1995).
first discuss various alternative proposals for the analysis of the nature of PRO.

2.3. Alternative analyses of the nature of PRO

2.3.1 Introduction

In this section we discuss various proposals about the nature of PRO, which have been proposed as an alternative to the original analysis of PRO as a pronominal anaphor in Chomsky (1981). First we consider proposals which claim that PRO is a pure anaphor (Manzini 1983; Bennis & Hoekstra 1989a). Second, we discuss proposals which claim that PRO is a pronominal anaphor (Chomsky 1986b; Kayne 1991). Third, we discuss approaches in which PRO is sometimes an anaphor and at other times a pronoun (Koster 1984; Bouchard 1984, 1985a,b). Finally we consider proposals which claim that PRO is always a pronoun. All these proposals aim to remedy the locality problem of a PRO subject without a binding domain, so that (part of) the referential properties of PRO can be accounted for with a syntactic analysis.

2.3.2. PRO as a pure anaphor

In her article on control, Manzini (1983) claims that PRO is always an anaphor. Retaining the original LGB-analysis that PRO is ungoverned, Manzini extends the standard binding theory with a principle A', in order to define a binding domain for anaphors which lack a governing category, as in (17).

(17) Binding Principle A'

An anaphor without a governing category is bound within its domain-governing category.

(Manzini 1983: 432)

A domain-governing category (DGC) is defined as in (18).
(18) $\gamma$ is a DGC for $\alpha$ iff
   a $\gamma$ is the minimal category with a subject 
      containing the c-domain of $\alpha$ and a governor for 
      the c-domain of $\alpha$, and 
   b $\gamma$ contains a subject accessible to $\alpha$ 
      (Manzini 1983: 433)

Where the c-domain is the clause which contains PRO as a subject; 
the governor for this c-domain is the higher verb; and an accessible 
subject is either a lexical subject or agreement features on the verb.

The problem for the DGC-analysis of control is that it is too 
restricted. By the clause in (18a), the DGC can only be defined for 
selected complements, because only these clauses are governed. Thus, 
this analysis is able to define the DGC for examples like (19a,b), but 
it cannot do so for the examples in (19c,d,e).

(19) a Mary; promised Bill, [PRO$_{v/q}$ to fire John]
   b Mary; asked Bill, [PRO$_{v/q}$ to fire John]
   c Mary; fired Bill, [PRO$_{v/q}$ to hire John]
   d Mary; hired Bill, [PRO$_{v/q}$ to fire John]
   e It was a crazy plan [PRO$_{arb}$ to fire John]

The controlled clauses in (19a,b) are selected complements of the 
matrix verbs promise and ask. Although the matrix clause is the 
DGC for PRO in these sentences, the exact choice of controller 
must be determined by lexical properties of the matrix verbs, because 
the DGC contains two potential controllers. The lexical properties 
of promise determine that the matrix subject controls PRO in (19a) 
and the lexical properties of ask determine that the matrix object 
controls PRO in (19b). If anaphoric binding relations are purely 
based on local syntactic relations and $\phi$-feature matching, it is 
surprising that these control relations involve lexical properties.

The examples in (19c,d) involve controlled adjunct clauses and 
are excluded from the formulation of a DGC by (18a), because an 
adjunct is a barrier for government. In spite of the fact that (19c,d) 
do not have a DGC for PRO, the control relations in these cases are 
as compelling as the those in (19a,b). The similarity of the control 
relations in (19a-d) justifies an analysis which generalizes over 
complement and adjunct clauses.

The example in (19e), is also excluded from (18), because an 
(extraposed) subject clause is not governed by the higher verb. As a 
consequence, principle A' cannot account for the licensing of PRO 
in these clauses. Manzini (1983), however, argues that when PRO is
embedded in a(n extraposed) subject clause, as in (19e), there is no accessible subject, hence no DGC. Manzini concludes that when PRO has no DGC, principle A' cannot apply, so that PRO may refer freely. In other words, if principle A' cannot apply, PRO cannot be an anaphor, hence must be a pronoun, which explains its relatively independent reference.

Because of the examples in (19c,d,e) we may conclude that the Manzini's 'pure anaphor' approach to control is in fact a non-uniform analysis of PRO, by which only PRO in controlled complements and with a syntactically present controlling argument in the higher clause can be accounted for in terms of principle A'. PRO in subject and adjunct clauses, however, cannot be so analyzed, because neither of these types of clauses have a DGC for PRO. Thus, even if we adopt a DGC to account for PRO, the PRO subjects of adjunct and subject clauses cannot be considered anaphoric, because they lack a DGC. Therefore, if we want to give a uniform account of the nature of PRO, we cannot maintain that PRO is an anaphor. As the empty subject of controlled adjunct and subject clauses must independently be analyzed as pronominal, an overall pronominal analysis of PRO is a good alternative. However, the often compelling referential relations of PRO with a higher argument has inspired alternative analyses of PRO as a pure pronoun.

2.3.3. Anaphoric PRO revisited

In order to overcome the locality problem of ungoverned PRO and the problems of anaphoric PRO without a DGC, and unbound PRO, Bennis & Hoekstra (B&H, 1989a) propose that the anaphoric properties of PRO should be accounted for without reference to the notion of government. They propose an alternative definition of binding principle A, given in (20).

(20) Principle A of the Binding Theory

a An anaphor must be bound in its binding category
b A category A is a binding category for B iff A is the minimal maximal projection which contains B and an opacity factor different from B
c Opacity factors are subject and [+finite]

By this definition, the status of a controlled clause as complement,
subject or adjunct is irrelevant. For the examples in (19) this means that all embedded clauses have the matrix clause as their binding domain, because it contains both opacity factors of an accessible subject and [+finite] Tense for the complement and adjunct clauses, and it contains one of the opacity factors, namely [+finite] Tense, for the controlled subject clause.

B&H (1989a) argue that PRO should be analyzed as an anaphor in all its occurrences, because the properties of PRO which have been considered to be non-anaphoric, such as having a non-commanding controller, a split controller, a long distance controller or an implicit controller, are also attested for lexical anaphors. In order to show that lexical anaphors also allow an implicit antecedent B&H (1989a) give the examples in (21).

(21) a  Er wordt gerekend op elkaars medewerking
        There is counted on each other’s co-operation
        ‘People are counting on each other’s co-operation’

       b  Er wordt in kroegen alleen maar over zichzelf gesproken
        There is in pubs only but about oneself talked
        ‘In pubs people speak only about themselves’
        (B&H ex. 10)

The fact that these examples are grammatical is not necessarily explained by the assumption that anaphors allow an implicit antecedent. Although it has been argued by Fukui & Speas (F&S, 1986) and Hoekstra & Roberts (H&R, 1993) that passive constructions license an empty subject in the specifier of the passive participle, this empty argument seems to be unable to bind anaphors in constructions like (22).6

(22) a  *Er wordt door zichzelf vermoord
        There is by oneself murdered

       b  *Er wordt door zichzelf gewassen
        There is by oneself washed

If the implicit arguments in (21) bind the anaphors, then the implicit arguments in (22) should also bind the anaphors. As this is not the case, it seems that we must reject all reference to implicit arguments as syntactic binders. The examples in (21) require a different explanation. The reciprocal in (21a) is not a good example of an

---

6With thanks to Marcel den Dikken (p.c.) for drawing my attention to the example in (22a).
anaphor, since other anaphors in the same position are not allowed, as illustrated in (23).

(23) a  *Er wordt gerekend op zichzelfs medewerking
       There is counted on themselves’ co-operation
     b  Zij sloegen elkaar/zichzelf
       They hit each other/themselves
     c  Er wordt gerekend op ieders medewerking
       There is counted on every one’s co-operation
     d  Er wordt ook gerekend op hun eigen medewerking
       There is also counted on their own co-operation

These examples suggest that *elkaar has pronominal properties, which are shared by the pronouns *ieder and *hun. All these elements are licensed while syntactically unbound. Zichzelf, on the other hand is a genuine anaphor for third person singular and plural, but is unable to appear in the subject position of the noun in (23a). From these examples I conclude that the subject position of a noun cannot be occupied by anaphors.

The grammaticality of the example in (21b) may be explained in the same way as the grammaticality of the examples in (5) above. It may be argued that there is a PRO subject in the adjunct PP over zichzelf (=about himself) (cf. Koster 1993). If this is correct, the anaphor in (21b) is bound by PRO, and PRO is interpreted as the implicit Agent of spreken (=speak). I propose that the presence of a PRO subject in a PP-adjunct may also explain the grammaticality of anaphors with non c-commanding antecedents.

B&H (1989a) present (24a) as an example of lexical anaphors with an antecedent which does not c-commanded the anaphor. I have added the % sign, because some speakers accept this sentence, while others do not (cf. Van Haaften 1991: 169).

(24) a  %Ik sprak [met Piet] over zichzelf,
       I spoke with Piet about himself
     b  Jan, sprak [met Piet] over zichzelfs
       Jan spoke with Piet about himself
     c  Jan, sprak [met Piet] over hemzelf
       Jan spoke with Piet about himself

A reflexive anaphor like zichzelf in general requires a locally c-commanding antecedent, so that only the third person subject in (24b) can serve as an antecedent, but not a PP-object. For those who accept (24a), the presence of a PRO subject in the over-PP would
solve the problem of a non c-commanding antecedent, since the anaphor is bound to PRO by which it is c-commanded. An emphatic reflexive like *hemzelf* in (24c) is pronominal in nature, and only allows coreference outside its local domain. The fact that *hemzelf* may be coreferent with either *Jan* or *Piet* suggests that there is indeed a PRO subject inside the *over*-PP, since the minimal domain for binding properties of both pronoun and anaphor must contain an accessible subject. If there is no PRO in the PP, the accessible subject is the matrix subject, and the emphatic reflexive is wrongly predicted to be obligatorily disjoint from the matrix subject. If the PP contains a PRO subject it is correctly predicted that the emphatic reflexive may be coreferent with either the matrix subject or the object. The grammaticality of (24a) can now be analyzed as an instance of anaphoric binding of the reflexive by PRO, so that the requirement of c-command relations for anaphoric binding can be maintained.

In order to support the parallel between PRO and lexical anaphors, however, B&H (1989a) present the example in (25) to show that lexical anaphors, like PRO, can have split antecedents. The percentage sign is mine.

(25) %Rusland,
    drong bij Amerika,
    aan op elkaars_{i+1}
    medewerking bij het toezicht op de ontwapening
    ‘Russia urged America for each other’s co-operation with the supervision of the disarmament’
    (B&H ex. 18)

For those who find the construction in (25) ungrammatical, the sentence can be saved when the anaphor is replaced by an adjective with a similar meaning, as in (26).

(26) Rusland drong bij Amerika aan op *wederzijdse*
    medewerking bij het toezicht op de ontwapening
    ‘Russia urged America for *mutual* co-operation with the supervision of the disarmament’

As indicated above, the reciprocal *elkaar* appears to have pronominal properties, which may be stronger for some speakers than for others. The fact that the anaphor in (25) is ungrammatical for some native speakers, while the semantically equivalent adjective in (26) is always grammatical suggests that genuine lexical anaphors need a unique antecedent. The fact that control constructions with split antecedents, as in (27), are unambiguously judged as grammatical
strongly supports our hypothesis that PRO is a pronoun rather than an anaphor.

(27) Rusland, drong er bij Amerika, op aan [om PRO₁₊,₁ to help] bij het toezicht op de ontwapening
Russia urged there at America on to [for PRO each other to help] with the supervision of the disarmament
‘Russia urged America to help each other with the supervision of the disarmament’

A final argument by B&H (1989a) in favour of an anaphoric analysis of PRO is that PRO cannot have a long distance controller (LDC), a property which is analogous to the property found with lexical anaphors. The examples in (14) and (15) above, however, have shown that there are indeed constructions which allow PRO to be controlled by a LDC. As LDC constructions exist and PRO may be licensed without even an implicit controller as in (8), PRO must have pronominal properties.

2.3.4. The pronominal anaphor approach revisited

In *Knowledge of Language (KoL)* Chomsky (1986b) instigates a potential solution to the locality problem of the pronominal anaphor by proposing that the locality domains for pronouns and anaphors may sometimes be distinct. More specifically, Chomsky (1986b) argues that the binding domains of pronouns and anaphors are distinct when they are in a subject position. This idea is motivated by examples like those in (28).

(28) a the children, like [each other’s₁₊,₁ friends]
b the children, like [their₁,₁ friends] (Ch. ex. 229)

In the GB-approach to binding, the local binding domain (i.e. governing category) for a pronoun or anaphor must contain its governor and an accessible subject (cf. definition (35) in chapter 1). Under a strict c-command condition of government, the pronoun and the anaphor in (28) do not have a governor, since they are not c-commanded by the noun friends, and they themselves do not c-command the higher verb *like*. In Chomsky (1986b: 169) the definition of a governing category (GC) is less strict with respect to the c-command requirement, thus defining a GC for a pronoun or an anaphor α as ‘a maximal projection containing both a subject and
a lexical category governing $\alpha$ (hence containing $\alpha$).’ Explaining what this definition actually means, Chomsky goes on to say that ‘[a] governing category is a "complete functional complex" (CFC) in the sense that all grammatical functions compatible with its head are realized in it—the complements necessarily, by the projection principle, and the subject [...], by definition’ (1986b: 169). If the minimal governing category (MGC) is defined in these terms, the facts in (28a) cannot be explained, because the MGC for both the anaphor and the pronoun is the object DP itself, since the relevant governing head is the noun friends, the CFC of this head is the object DP, which contains a subject, namely the anaphor or pronoun itself. Therefore, an alternative definition must be formulated in order to capture (28a).

The definition of local domain in terms of the local CFC is only sufficient for determining the local domain for the pronoun in (28b), since this is A-free within the object DP. This definition is, however, not adequate when we want to account for the binding properties of the anaphor in (28a), since the latter must be locally bound, and there is no binder within the MGC if this consists only of the object DP. Therefore, Chomsky proposes to reformulate the definition of the MGC in such a way that ‘the relevant governing category for an expression $\alpha$ is the least CFC containing a governor of $\alpha$ in which $\alpha$ could satisfy the binding theory with some indexing’ (1986b: 171). In other words, the subject defining a GC must be an accessible subject, in the sense that coindexation of the pronoun or anaphor and the subject does not violate any grammatical principles. As the pronoun must be free in its local domain, the presence of a potential binder is not crucial, so that the DP suffices as local domain. The anaphor, however, needs a compatible binder distinct from itself in its local domain to satisfy the binding conditions of principle A, so that the domain for anaphor binding must be extended to include an appropriate antecedent, so that in this case the entire clause is the local binding domain.

Kayne (1991) adopts this idea of different binding domains for pronominal subjects and anaphoric subjects for his account of the distribution of the pronominal anaphor PRO. As this account takes as a basic assumption that PRO is a pronominal anaphor and focusses on the distribution of PRO rather than its nature, I will postpone a discussion to the next chapter.

It must be noted, however, that the differentiation of anaphoric and pronominal binding domains is problematic for an account of the fact that only reciprocals and pronouns, but not reflexive
anaphors can be bound by the higher subject in (29).

(29) a  *the children, like [themselves, their friends]
b  the children, like [their own friends]
c  I like [my friends]
d  I like myself
e  *I like [myself friends]

These examples show that the reflexive anaphors in subject position of the DPs in (29a,e) cannot be bound by the higher subject, whereas the reflexive anaphor in (29d) can be bound to the higher subject. Furthermore, the example in (29b) shows that a reflexive interpretation for the embedded pronominal subject is fine, so that there must be a syntactic reason why the reflexive anaphors cannot be in subject position of the DP. Even if one argues that there is a Case clash in (29a), because the reflexive can only appear in the accusative, while the subject position requires a genitive DP, this argument is contradicted by the example in (29c), since this reflexive has the genitive form. The possibility suggested above to extend the binding domain of the reciprocal ‘anaphor’ to include a binder does not have the desired effect for reflexive anaphors. This leads to the conclusion that the DP is the binding domain for lexical anaphors, and that for lack of a local binder, these constructions are ungrammatical. The ungrammaticality of the examples in (29) reaffirms our earlier observation that the reciprocal has pronominal properties which genuine reflexives lack.

If we now compare the referential properties of the reciprocal each other in (28a) and the ‘reflexive’ pronoun their own in (29b), it appears that they are both obligatorily coreferent with the higher subject. As each other may also appear without a binder, as was shown in examples (21a) and (25), I conclude that an analysis of anaphoric properties cannot be based on the behavior of a reciprocal, because a reciprocal behaves more as a pronoun than as an anaphor.

With respect to the analysis of PRO as a pronominal anaphor, this is still problematic. Although the Knowledge of Language definition of binding domains as CFCs allows an interpretation of ‘governor’ as ‘lexical θ-assigning head’, so that PRO may have a GC without being actually governed itself, the idea that PRO is always anaphoric as well as pronominal wrongly predicts that it cannot be licensed without a local antecedent.
2.3.5. PRO: anaphor or pronoun

2.3.5.1. Introduction

As PRO is obligatorily controlled in some instances, while in other instances PRO does not even need a controller to be licensed, various linguists concluded that a uniform account of the nature of PRO is not possible. As the pronominal and anaphoric properties cannot be simultaneously accounted for under a GB-approach of ungoverned PRO, it was suggested that in obligatory control environments PRO is an anaphor, while in other environments PRO is a pronoun (cf. Bouchard 1984, 1985a,b; Koster 1984; Hornstein and Lightfoot 1987). As the analyses of the non-uniform nature of PRO are all based on the GB-framework, I will represent only two analyses in detail, namely the analysis of anaphoric PRO by Koster (1984) and the analysis of pronominal PRO by Bouchard (1984, 1985a,b).\(^7\) I have chosen to represent Koster’s (1984) approach, because he pays ample attention to Dutch control facts, which provides a good basis for the case studies presented in chapters 4, 5 and 6 of this dissertation. As Koster leaves pronominal PRO largely undiscussed, I will consider Bouchard’s analysis of pronominal PRO.

2.3.5.2. Obligatorily controlled PRO as anaphor

Koster (1984) argues in favor of the radical autonomy of four properties of a syntactic relation between two elements, i.e. the properties in (30).

\[(30)\]
\[(a)\] an obligatory linking between two syntactic elements \(\alpha\) and \(\gamma\)
\[(b)\] the uniqueness of \(\alpha\) in relation to \(\gamma\)
\[(c)\] a prominence relationship of c-command between \(\alpha\) and \(\gamma\)
\[(d)\] a restriction of the locality domain for the relation between \(\alpha\) and \(\gamma\)

\[(Koster\ 1984: 417)\]

\(^7\)Hornstein & Lightfoot (1987) adopt a predication theory heavily relying on Williams (1980). I will postpone the discussion of predication theory until chapter 5, where we will concentrate on the interpretation of PRO, rather than on its nature.
According to Koster an obligatory control (OC) relation is licensed when the relation between PRO and its controller satisfies all four of the autonomous properties of syntax mentioned in (30). In the LGB-approach, the fourth property is difficult to define, since, as we saw in the previous chapter, a pronominal anaphor does not have a GC, hence no binding domain. Therefore, Koster proposes that in OC constructions PRO is a pure anaphor, so that PRO and its controller must share a GC, which is the locality domain for anaphor binding.

In order to establish a common GC for PRO and its controller, Koster claims that the infinitive in OC constructions undergoes S-bar deletion, i.e. the CP-clause in which PRO in control infinitives is embedded is reduced to IP. It is argued that CP-deletion is supported by data from English, which show that cases of non-obligatory control (NOC) allow a for-complementizer, while cases of OC do not, as illustrated in (31) and (32).

(31) a  It is impossible [CP(for Mary) to help Bill]
b  John proposed to Mary [CP(for Bill) to go to the movies]
c  It is difficult for Mary [CP(for John) to help Bill]
d  John thinks [it is impossible [CP(for him) to shave himself]]

(32)   *John tried very hard [CP for [IP Bill to go]]
(Koster 1984: exx. 25, 26)

Koster shows that the impossibility of having a for-complementizer introducing the infinitive is a property that OC constructions share with raising infinitives, whether subject or object raising.

(33) a  *It seems [for Bill to go]
b  *It is likely [for Mary to help Bill]
c  *John believes [for Mary to go]
(Koster 1984: exx. 27, 28)

From these examples Koster (1984: 427) concludes that PRO in OC clauses is the subject of a reduced clause. According to Koster, the syntax does not distinguish between thematic (control) and non-thematic (raising) relations, so that both PRO and DP-trace may be governed by the matrix verb. It is argued that in these constructions

---

8The terms obligatory control (OC) and non-obligatory control (NOC) were introduced by Williams (1980). As Williams’s account of control is more related to the interpretation of PRO than its nature, we will discuss this approach in chapter 5.
both types of empty subjects should be analyzed as anaphors, so that the distribution and reference of both trace and obligatorily controlled PRO can be accounted for by principle A of the binding theory (BT).

In support of the analysis that OC involves an anaphoric subject in reduced IP-infinitives, Koster argues that generalizations established earlier with respect to the impossibility of passivizing obligatory subject control constructions (Visser 1963-1973), and of leaving the object of obligatory object constructions implicit (Bach 1979) can be explained. It is furthermore argued by Koster that a governed PRO analysis accounts for the fact that, in Dutch, controlled complements that have undergone verb-raising (VR) cannot have a lexical complementizer (om), while extrapoosed controlled clauses can, because VR constructions have a reduced IP complement, while extrapoosed clauses are full CPs. These arguments are critically discussed below.

2.3.5.3. Bach’s generalization

Bach (1979) observes that clauses with obligatory object control do not allow ‘intransitivization’, and Koster (1984: 433) claims that this follows from his reduced clause analysis for OC. Consider the OC examples in (34).

(34) a    Louise taught Tom to smoke
 b      *Louise taught to smoke
 c      *Louise taught Tom for him to smoke

(Bresnan 1982: exx. 122, 124)

The sentence in (34b) is ungrammatical, because the controlling object has been left implicit. According to Koster, this is correlated with the fact that the construction in (34c) does not allow a for-complementizer introducing the infinitive. As the infinitive cannot be introduced by a for-complementizer, it is assumed that the clause is a reduced IP, so that PRO is governed by the matrix verb, and must be anaphor-bound by a c-commanding NP in the domain of its GC, the matrix clause.

In the NOC example in (35b), on the other hand, the object controller may remain implicit. Koster claims that this is correlated with the fact that the embedded infinitive can be introduced by a for-complementizer.
(35)  a  Louise signaled Tom to follow her
    b  Louise signaled to follow her
    c  Louise signaled Tom for him to follow her
        (Bresnan 1982: exx. 123, 125)

As the for-complementizer can introduce the above infinitive, the clause must be a CP, protecting PRO from being governed by the matrix verb, so that it need not be anaphorically bound within the matrix clause.

There is, however, one serious problem for the characterization of the OC-clauses in (34) as reduced IPs, namely that they can contain wh-elements in the embedded SpecCP, as illustrated in (36).

(36)  a  Louise taught *(Tom) [wh; PRO to do t; in case of an emergency]
    b  Louise taught *(Tom) [when PRO to speak up]
    c  Louise signaled (Tom) [when PRO to follow her]
    d  Louise signaled (Tom) [who; PRO to follow t;]

The constructions in (36a,b) suggest that a filled embedded SpecCP does not always correlate with the optional realization of the controlling object. In these examples the embedded SpecCP may be filled with a wh-element, but the matrix object may not be left implicit. The examples in (36a,b) support the traditional idea that all infinitival control constructions are CPs. Thus, the fact that (34b) is ungrammatical, while (35b) is grammatical cannot be caused by the difference in nature of the embedded clause, because both NOC and OC clauses have a full, non-transparent CP structure. If the CP is always the locality domain for PRO, as will be argued later in this chapter, there seems to be no reason to assume that OC and NOC PRO subjects have a different syntactic nature. The examples in (36) are compatible with an overall pronominal analysis of PRO.

2.3.5.4. Visser’s generalization

According to Koster (1984: 432) the anaphoric analysis of OC PRO makes it possible to explain Visser’s generalization (Visser 1963-1973, part III.2.2118 in Bresnan 1982: 402) in terms of the BT. Visser’s generalization states that it is ungrammatical to passivize subject-raising constructions and obligatory subject control constructions. Consider the constructions in (37) and (38). The traces, PROs and square brackets are my additions.
ON THE NATURE OF PRO

(37) a He, strikes his friends [t, as pompous]
b The boys, made Aunt Mary [t, good little housekeepers]
c Max, failed her [t, as a husband]
d The vision, struck him [t, as a beautiful revelation]
e Mary, promised Frank [PRO, to leave]

(38) a *His friends, were struck t, (by him,) [e, as pompous]
b *Aunt Mary, was made t, [e, good little housekeepers] (by
the boys)
c *She, was failed t, (by Max,) [e, as a husband]
d *He, was struck t, (by the vision,) [e, as a beautiful
revelation]
e *Frank, was promised t, [PRO, to leave] (by Marie)
(Koster 1984: exx. 45,46)

The examples in (38) show that subject-raising constructions in (37a-
d) and OC construction in (37e) do not allow passivization. Koster
argues that the constructions in (38) are ungrammatical because the
anaphors e, and PRO lack a local c-commanding antecedent.
The analysis of OC PRO as an anaphor in governed SpecIP
position is problematic in the case of try. The examples in (39) show
that try is an obligatory control verb.

(39) a John tried PRO to leave
b *It was tried (by John) PRO to leave
c John decided PRO to leave
d It was decided (by John) PRO to leave

The fact that passivization of the control construction with try is
ungrammatical, whereas the passivization of the control construction
with decide is grammatical suggests that try in an OC verb, whereas
decide is an NOC verb. Although the analysis of PRO as an empty
anaphor in SpecIP transparent for government correctly predicts the
ungrammaticality of (40a), it incorrectly predicts that (40b) is a
possible structure.

(40) a *It, was tried (by John,) [IP PRO, to leave],
b *John, was tried [IP t, to leave]

In (40a), the expletive subject is not an accessible subject for PRO,
because coindexation of PRO and the matrix subject would lead to a
violation of the i-within-i filter, since the expletive is coindexed with
the controlled clause containing PRO. Thus, PRO does not have an
A-binder, so that the hypothesis that PRO is an anaphor correctly predicts (40a) to be ungrammatical. However, if the embedded clause is a reduced IP transparent for government, it is wrongly predicted that the embedded thematic subject may raise to the higher subject position, because when the control verb is passivized the nominative subject position is free for other material to move into. The fact that the embedded subject in (40b) is not allowed to move into matrix subject position, in spite of the fact that there is no other matrix argument which can check the nominative case features is explained by Koster (1984: 431) as being the result of an incompatibility between the binding theory and the independent control theory. However, the structure in (40b) is a raising structure so that control theory plays no role.

Another problem for the reduced IP hypothesis for OC clauses is that we cannot explain why a monotransitive verb like try does not allow the subject of its complement clause to be a lexical accusative DP. The examples in (41) show that try like believe and promise is a genuine transitive verb, capable of assigning structural accusative Case.

(41) a  John tried {his new bike/it}
       b  John promised {a new bike/it} to Mary
       c  John believed {Mary’s story/her}

The above examples are all transitive, showing that the matrix verb assigns structural accusative Case. When these verbs select an infinitival complement clause, however, structural accusative Case is only visibly assigned to the subject of the ECM-verb believe.

(42) a  John tried [{’himsself} to ride his bike]
       b  John promised Mary [{’himsself} to buy a new bike]
       c  John believed [himself to be ill]

If all embedded clauses in (42) are reduced IPs, the difference with respect to the embedded subjects is not expected.9 Therefore, I will

9Hornstein & Lightfoot (1987: 45) propose to solve this problem by assuming that structural Case-marking is optional. They motivate their assumption with examples like those in (i).

(i)   a  John expects PRO to leave
       b  John expects Harry to leave

If Case assignment is optional, however, we expect that a verb like try would also alternate between control and raising-to-object constructions. As this is not the case, I adopt the traditional idea that controlled infinitives are CPs.
adopt the traditional analysis (cf. Chomsky & Lasnik 1977) of these two constructions, where it is assumed that the controlled subject is protected from Case assignment, because a CP intervenes between the transitive verb and the subject in SpecIP. As a consequence, the embedded subject cannot raise to a matrix Case position.

In this subsection it was shown that the anaphoric analysis of PRO is problematic, because a BT account of anaphoric PRO forces a reduced clause analysis for the controlled clause, so that PRO cannot be protected from raising to a higher Case position.

2.3.5.5. Anaphoric PRO and VR

Koster (1984: 433ff.) argues that clauses which disallow a lexical complementizer are evidence that, under a traditional head-final SOV analysis of Dutch (cf. Den Besten & Edmondson 1983; Den Besten & Rutten 1989), some controlled clauses must be analyzed as reduced IP-clauses. The clauses Koster refers to are those which show obligatory verb raising (VR) of the embedded infinitive to the matrix verb. Although controlled complements generally have an optional complementizer, the VR-constructions do not allow a lexical complementizer, as illustrated in (43).

\[(43)\]
\[
\begin{align*}
\text{a} & \quad \text{Jan zei dat hij probeerde [(om) Bill te bezoeken]} & \text{(SS)} \\
& \quad \text{Jan said that he tried [(for) Bill to visit]} \\
\text{b} & \quad \text{Jan zei dat hij [(\text{om}) PRO Bill } t,] \text{ probeerde te bezoeken,} \\
& \quad \text{Jan said that he [(\text{for}) PRO Bill } t,] \text{ tried to visit} & \text{(SS)} \\
\text{c} & \quad \text{Jan zei dat hij [(om) PRO Bill te bezoeken] probeerde} \\
& \quad \text{Jan said that he [(for) PRO Bill to visit] tried} & \text{(DS)}
\end{align*}
\]

In a head-final SOV analysis of Dutch, it is assumed that the infinitival complement clause originates in preverbal position at D-Structure, as in (43c). As only the embedded object in the surface representation in (43b) is in preverbal position, it is assumed that the infinitive has moved to adjoin to the matrix verb in the head-final IP. The fact that Bill cannot be preceded by om in (43b) is taken by Koster as support for the claim that controlled clauses in VR-constructions undergo CP-deletion, whereas controlled clauses in non VR-constructions as in (43a) do not undergo CP-deletion, because the presence of om is grammatical.

According to Koster this analysis is supported by the fact that the construction in (43a) can undergo passivization, unlike its English counterpart, whereas the construction in (43b) like its
English counterpart cannot be passivized, as illustrated in (44).

(44) a Er werd geprobeerd [CP (om) PRO Bill te bezoeken]
    There was tried [(for) PRO Bill to visit] (K. ex. 52)

b *Er werd [ PRO Bill t, ] geprobeerd te bezoeken,
    There was [PRO Bill t, ] tried to visit (K. ex. 53)

c *There/*It was tried to visit Bill

The controller in these constructions is the implicit Agent of the matrix verb. The (a) sentence is grammatical, because PRO is embedded in a CP, so that it is not governed by the matrix verb, hence PRO is not anaphoric and does not need to be bound in the matrix clause. The (b) example, on the other hand, is argued to be ungrammatical, because PRO is governed by the matrix verb, since the embedded clause is a reduced IP, so that it must have a c-commanding binder in the matrix clause. As there is no such DP, the clause is ruled out as ungrammatical by principle A of the BT.

It is important to note, however, that the construction in (44b) improves considerably when the embedded object is indefinite, and even more so when this object is modified by a relative clause as illustrated in (45).

(45) a %Er werd [een meisje], geprobeerd [PRO t, te vinden [dat op de kinderen kon passen]]
    There was [a girl], tried [PRO t, to find [who after the kids could look]]

b Er werd [een meisje], getracht [PRO t, te vinden [dat op de kinderen kon passen]]
    There was [a girl], tried [PRO t, to find [who after the kids could look]]

c Er werd [een meisje], gepoogd [PRO t, te vinden [dat op de kinderen kon passen]]
    There was [a girl], tried [PRO t, to find [who after the kids could look]]

'Someone tried to find a girl who could look after the kids'

I have marked the example in (45a) with a percentage sign, because not all native speakers find this construction with the verb *proberen* grammatical. It appears, however, that the constructions improve for these speakers, when they use synonymous verbs like *trachten* or *pogen*, as illustrated in (45b,c). The reason for this may be that the verb *proberen* has many modal properties. One of these is that in verb clusters of more than two verbs, modals replace their participial
form with an infinitive (the so-called Infinitivus pro Participio or IPP-effect) in verbal clusters. If some speakers only allow a modal use of proberen, it is expected that impersonal passives are ungrammatical, since modals do not passivize. Thus, the ungrammaticality judgement by some speakers of the passivized construction in (45a) may be caused by the unaccusative nature of the verb proberen, rather than the governed status of PRO. The grammaticality of the examples in (45) suggests that the ungrammaticality of (44b) may be attributed to the definiteness effect, rather than to the reduced IP-status of the embedded clause.

The examples in (45b,c) furthermore show that a VR-construction is not incompatible with NOC, since they are grammatical with an implicit Agent as controller. These data appear to contradict the idea that there is a correlation between IP and OC, on the one hand, and between CP and NOC, on the other, because obligatory subject control verbs like trachten and pogen (=try) allow impersonal passives with uncontrolled PRO.

2.3.5.6. Conclusions with respect to Koster (1984)

From the above discussion we may conclude that Koster’s (1984) aim to provide a unified analysis for subject raising and obligatory control raises various problems.

One problem for Koster (1984) is the assumption that PRO is governed by the higher verb. This is problematic for Case Theory, since it leads us, wrongly, to expect that the matrix verb licenses accusative embedded subjects, because there is no CP-barrier to protect the embedded subject in infinitival SpecIP from raising to check case in a matrix case position. As this prediction is not borne out, the embedded subject must be protected from raising to matrix object or subject position by an intervening barrier, i.e. a CP with an empty complementizer. For English, this is supported by the fact that this language allows embedded wherelements in SpecCP. For

---

10With thanks to Ans van Kemenade and Frank Beths for their grammaticality judgements in (45). Examples of the IPP-effect with modals and proberen are given in (i) and (ii).

\[
\begin{align*}
\text{i} & \quad \text{Jan heeft zijn fiets kunnen maken} \\
& \quad \text{Jan has his bike be-able-to-INF fix} \\
\text{ii} & \quad \text{Jan heeft zijn fiets proberen te maken} \\
& \quad \text{Jan has his bike try-INF to fix}
\end{align*}
\]

The exclusively IPP-users of proberen resist a passive construction with this verb, presumably because it is analyzed as an unaccusative verb in these cases.
Dutch and German, it will be argued in section 2.4.2, that the VR phenomena in these languages can be reanalyzed as cases of object scrambling through SpecCP.

A second problem is that the correlation between OC and a reduced IP representation of the controlled clause, on the one hand, and NOC and a CP representation on the controlled clause, on the other, cannot be maintained. For, although cases of OC do not allow PRO to alternate with a for-PP, they do allow their controlled clauses to be introduced by a wh-element, with genuine interrogative scope, so that it must be concluded that these control clauses are also CPs. Additional support for the idea that there is no correlation between controlled clauses without a lexical complementizer and OC comes from the examples in (46).

(46) a Jan, zei (tegen) Piet, [(om) PRO_{\text{om}} direct te vertrekken]  
Jan said (to) Piet [(om) PRO immediately to leave]  
'Jan said to Piet that he (Jan) would leave immediately'  
'Jan said to Piet that he (Piet) should leave immediately'

b Jan, fluisterde in Piet’s oor [(om) PRO_{\text{om}} direct te vertrekken]  
Jan whispered in Piet’s ear [(om) PRO immediately to leave]  
'Jan whispered in Piet’s ear that he (Jan) would leave immediately'  
'Jan whispered in Piet’s ear that he (Piet) should leave immediately'

In Koster’s (1984) analysis, the obligatory absence of om suggests that the control clauses in (46) are reduced IPs, and wrongly predicts obligatory control for these constructions. In spite of the absence of om, however, the interpretation of PRO varies, which is not expected under an anaphoric approach to PRO in infinitival clauses lacking a lexical complementizer. I propose that these problems can be avoided when we adopt the two hypotheses advocated in the present study, namely, that PRO is analyzed as a pronoun throughout all its occurrences, and that controlled complement clauses are uniformly analyzed as CPs. Before discussing this proposal in more detail, I will first consider earlier analyses of PRO as a pronoun.
2.3.5.7. Non-obligatorily controlled PRO as a Pronoun

In this section we discuss the account by Bouchard (1984; 1985a,b). Although he assumes, like Koster (1984), that PRO can occur either as a governed anaphor or as an un governed pronoun, he describes the properties of pronominal PRO in more detail. The overview presented by Bouchard provides some groundwork for the discussion in the next section of two other proposals, by Borer (1989) and Huang (1989), respectively, both of whom argue for a purely pronominal analysis of PRO.

According to Bouchard (1984: 196), pronominal PRO does not have all four basic properties of anaphoric PRO (cf. Koster 1984) simultaneously, so that pronominal PRO may display one or more of the following properties.

(47) a no obligatory antecedent
    b no locality restriction for the antecedent, if any
    c no uniqueness requirement for the antecedent, if any
    d no specific structural relation between pronoun and antecedent

According to Bouchard no CP-deletion takes place in the case of pronominal PRO, so that it is protected from outside government, and binding in the sense of principle A is blocked. CP-deletion is blocked when the CP projection is filled by lexical material, as in (48).\textsuperscript{11}

(48) a They don’t know \([_{CP} \text{what} \{\text{PRO to do} \; t \}]\)
    b They don’t know \([_{CP} \text{how} \{\text{PRO to behave} \; t \}]\)

A second type involves infinitival relatives, as in (49). These have an empty operator in SpecCP.

(49) a John gave Mary \([_{CP} \text{a book} \{\text{PRO to read} \; t \}]\)
    b John found \([_{CP} \text{another book} \{\text{PRO to read} \; t \}]\)

The (b) sentences in (48) and (49) show that coreference of PRO with an antecedent is not obligatory. According to Bouchard, the coreferent readings in (48a) and (49a) are not cases of binding, but of pragmatically determined coreference relations.

\textsuperscript{11}The examples in (48)-(52) have all been taken from Bouchard (1984: 196 ff).
In addition to these two types, Bouchard distinguishes four other types of infinitival clauses that must be assumed to be full CPs, because of the relatively free reference of PRO. The first of these are mainly verbs of communication which give evidence of free referential interpretation, such as (50).\footnote{In chapters 5 and 6 it is argued that the variation in control relations for verbs like \textit{say} and \textit{shout} involves different modal interpretations for the embedded clause (cf. Farkas 1988; Rooryck 1992; Petter 1995).}

(50) a. John shouted \([\text{CP} \text{PRO} \text{to arrest Bill}]\)
    b. John said \([\text{CP} \text{PRO} \text{to behave}]\)

These kind of verbs also allow long distance control (LDC) or readings in which either or both of the potential controllers are part of a group, as exemplified in (51).

(51) a. Mary remembered that John had said/whispered \([\text{PRO} \text{to behave herself}]\)
    b. They said that John shouted \([\text{PRO} \text{to leave}]\)

Other examples of controlled CP clauses are infinitival subjects (52a), purpose clauses (52b) and extraposed subject clauses (52c).

(52) a. \([\text{PRO} \text{to finish my/one's work on time}]\) is important to me
    b. The book was sold \([\text{PRO} \text{to help the refugees}]\)
    c. It is impossible \([\text{PRO} \text{to leave early}]\)

In all the above examples at least one of the properties in (47) applies. For this reason PRO must be pronominal, since anaphoric PRO is subject to strict syntactic relations with respect to its antecedent/controller.

Bouchard (1985a) also motivates the classification of PRO as pronominal with the referential properties of this element in certain constructions. He argues that in VP-deletion constructions and \textit{only}-NP constructions an anaphor can only have a sloppy reading, whereas a pronoun allows both sloppy and strict readings. In sloppy readings, the conjoined control constructions each have a different interpretation for PRO, because the controller for the expressed control clause is the matrix argument of the first conjunct and the controller for the deleted control clause is the matrix argument of the second conjunct. In strict readings, the controlling argument of PRO in the first conjunct is also the controller of PRO in the
second conjunct. Both types of coreference are illustrated in (53).

(53) a  John tried [PRO to leave], and Bill did too  (sloppy)
     b  John thinks that [PRO feeding himself] will be difficult,
         and Bill does too  (sloppy & strict)
     c  Only Bill expects [PRO to win]  (sloppy)
     d  Only Bill expects that it will make a strong impression on
         Mary [PRO to read her the play]  (sloppy & strict)

     (Bouchard’s 1985a: exx. 9, 10a, 13, 14)

In these examples (a) and (c) are analyzed as anaphoric, because these constructions only allow a sloppy reading. The examples in (b) and (d), on the other hand, are considered to be pronominal, because these also allow a strict reading. There are, however, some problems with this two-part analysis of PRO.

The first problem for this analysis is that the sloppy identity in (53a) is also obligatory for lexical pronouns in constructions with the Dutch variant of try, proberen, which allows finite complements.

(54) a  John, probeerde [of hij, kon vertrekken] en Bill deed dat
     ook
         John tried [if he could leave] and Bill did that too
     b  ... en Bill, probeerde ook [of hij, kon vertrekken]
         ... and Bill tried too [if he could leave]

The interpretation in (54b) is the only interpretation the deleted VP in the second conjunct of (54a) can get. It makes no difference whether the complement clause is finite with a lexical pronominal subject or infinitival with a PRO subject. Thus, obligatory sloppy identity does not distinguish between anaphor or pronoun. From this it may be concluded that even for cases of OC, the interpretation of the embedded subject is very much dependent on the lexical properties of the matrix predicate, since the lexical pronoun receives the same interpretation as PRO.

However, even if we assume that PRO is always pronominal, it must be identified for content in some way. Below we will see that control is one of the mechanisms for content identification (cf. Huang 1989). If control comes from a co-argument of the embedded clause, the matrix subject must control PRO in (53a) and the implicit for-PP of difficult may be taken as the controller for PRO in (53b), which can be interpreted as either John or Bill.

A second problem is that Dutch equivalents to (53a) and (53c) allow a lexical complementizer introducing the controlled clause, so
that PRO cannot be governed by the higher verb, and does not share the locality domain of the higher arguments. Thus, in these cases PRO cannot be anaphoric in Bouchard’s (and Koster’s 1984) analysis, but must be pronominal. Nonetheless these cases of control do not allow the strict reading in sentences like (55).

(55) a Jan beloofde Marie [om PRO meteen naar huis te komen],
    en dat deed Bill ook
    Jan promised Marie [for PRO at once to house to come],
    and that did Bill too
    ‘Jan promised Marie to come home at once, and so did Bill’

b Alleen Bill had beloofd [om PRO meteen naar huis te komen]
    Only Bill had promised [for PRO at once to house to come]
    ‘Only Bill had promised to come home at once’

These examples can only be interpreted with their sloppy readings, as illustrated by the finite paraphrases in (56).

(56) a John, promised that he, would come home at once and Bill, promised that he, would come home at once, too

b Only Bill, had promised that he, would come home at once, [Peter and Paul], had not promised that they, would come home at once

These examples suggest that, although at the level of interpretation the reference of PRO may be compelling, the syntactic properties of PRO are always pronominal. This idea is supported by the fact that the sloppy interpretation is also obligatory when the sentences of (47) are passivized, as in (57).

(57) a Er werd door Jan beloofd [om PRO meteen naar huis te komen], en ook door Bill
    There was by Jan promised [for PRO at once to house to come], and also by Bill

b Er werd alleen door Jan beloofd [om PRO meteen naar huis te komen], maar niet door Bill
    There was only by Jan promised [for PRO at once to house to come], but not by Bill

Although passivized control constructions are generally analyzed as
containing a pronominal PRO, since there is no c-commanding antecedent, the constructions in (57) suggest once more that even pronominal PRO must under certain circumstances be obligatorily interpreted by a sloppy reading. Therefore, it may well be assumed that the syntactic nature of every instance of PRO must be that of a pronoun, while the interpretation of certain instances of PRO may be obligatory, but in other instances PRO may be relatively free, depending on the lexical properties involved.

The fact that empty pronouns more often have a compelling reference than lexical pronouns can be explained by the requirement for empty pronouns to be identified for content, if their interpretation cannot be arbitrary. Lexical pronouns have content features of person, number and gender, so that their content is automatically identified. However, their reference is often as compelling as that of empty pronouns, because of the lexical requirements of both the higher predicate and the embedded clause. Examples of lexical pronominal subjects in complement clauses which have compelling reference have already been illustrated in (1).

The discussion in this subsection has shown that strict and sloppy interpretations of PRO in VP-deletion and only DP-constructions are not a reliable diagnostic for the anaphoric status of PRO. The fact that lexical pronominal subjects in these constructions behave like OC PRO suggests that OC PRO should also be analyzed as a pronoun.

2.3.6. Pronominal PRO

2.3.6.1. Introduction

In this section we discuss two approaches which claim that PRO is always a pronoun. It must be noted, however, that Borer’s (1989) analysis of PRO indirectly relies on the anaphoric analysis for the binding properties of OC, via an anaphoric agreement to which PRO is locally related. Only Huang (1989) presents a genuine pronominal analysis for PRO, where its sometimes compelling referential relations are not forced by principle A of the binding theory, but required by the need for PRO to be content-identified. This latter proposal comes closest to the analysis advocated in the present study.
2.3.6.2. Anaphoric Agr

Borer (1989) discusses various occurrences of empty subjects in verbal predicates. She argues that both finite and non-finite T^0 govern their specifier position, and that therefore, pro and PRO are basically indistinguishable. A basic assumption for this approach is that all empty categories must be ‘i-identified’ (Borer 1986), i.e. the ‘i-features’ (also known as φ-features), such as person, number and gender, identify the empty NP in subject position by way of coindexation with Agr(eement). For Borer, the difference between pro and PRO lies in the kind of Agr features they are coindexed with.

Ordinary pro-drop languages have a pronominal Agr which identifies the empty subject of finite clauses for at least person and number. An example from Spanish is given in (58), taken from Borer (1989: 73).

(58)   pro, sabe que pro_{ij} ha sido visto por María
       pro, knows that pro_{ij} has been seen by Maria
       ‘He, knows that he_{ij} has been seen by Maria’

This example shows that the reference of pro is not dependent on an antecedent NP. The embedded pro may, but need not be coreferent with the matrix subject. Borer notes that Hebrew is different from Spanish in that it allows pro-drop only for first and second person in past tense clauses. The absence of pro-drop for present tense and third person past tense is explained by assuming that Agr features in the present tense are defective and third person past tense is not sufficiently morphologically marked. In the future tense, pro-drop is subject to control, as exemplified in (59), taken from Borer (1986: 394).

(59) a Talila, ’amra le-Itamar, she pro, yavo
       Talila said to-Itamar that pro, will-come-m-sg
       ‘Talila told Itamar to come’

       b Talila, ’amra le-Itamar, she pro, tavo
       Talila said to-Itamar that pro, will-come-f-sg
       ‘Talila told Itamar that she will come’

The difference with the Spanish example in (58) is that pro in that sentence is free to be coreferential with either the matrix subject, or some other antecedent outside the sentence, whereas the pro subject in (59) must have a matching antecedent (controller) in the matrix
clause. Borer (1986) assumes that the difference in behavior of the two instances of pro is caused by different types of Agr morphemes. The Agr in Spanish and Italian finite clauses and in Hebrew past tense clauses are pronominal in nature, so that they can sufficiently I-identify the empty subject for person and number features. The Agr in Hebrew future tense, however, is argued to be anaphoric, because, although it has gender and number features, it lacks person features. This means that Agr is anaphorically dependent on an antecedent DP (i.e. subject to principle A of the BT) for the full identification of its own φ-features. As a consequence, the antecedent DP for the anaphoric Agr must obligatorily control the reference of pro.

Borer (1989) proposes a similar account for controlled PRO in (English) infinitives and gerunds. On the basis of Stowell’s (1982) observation that infinitival control clauses are often interpreted with an ‘unrealized’ tense, Borer proposes that controlled infinitives and gerunds also have an IP projection. Under the assumption that Infl must always be coindexed with a DP, a so-called ‘I-subject’—a condition similar to the EPP—, Borer (1986, 1989) argues for the presence of an empty subject position in non-finite SpecIP. The empty subject is a pronominal pro, just like in the Spanish and Hebrew examples above. The fact that pro in non-finite environments (i.e. PRO) often behaves like an anaphor is explained by assuming that infinitives have an ‘anaphoric AGR’, just like the pro cases in Hebrew future tense. In this view, the inflectional head of control infinitives is assumed to be the derived head of CP, by movement from I₀ to C₀, so that the ‘unrealized tense’ is in the correct position to be anaphorically dependent on the tense of matrix the clause and to have scope over the entire embedded clause.

Under the assumption that IP consists of Tense and Agreement features (cf. the split-IP hypothesis of Pollock 1989), Borer argues that in cases of control not only Tense, but also Agr is anaphorically dependent on the higher clause. If anaphoric, Agr must be bound either to an A-position, as in the case of OC, or to an A-bar position, as in the case of an independent generic interpretation (cf. Epstein 1984; Lebeaux 1984). Thus, when Agr is anaphorically dependent on a local antecedent, pro appears to be anaphoric, because it is coindexed with its local Agr.

Although by Borer’s (1989) account obligatory control depends on the anaphoric properties of the identifying agreement, rather than on the anaphoric properties of the empty subject itself, it may be concluded that, as in the account of pure anaphoric PRO, it is principle A of the binding theory which is supposed to account for
all control relations. As we saw above, however, some cases of control do not have a syntactically present and locally c-commanding controller. If Agr is anaphoric in some infinitival constructions in English, it will have to be anaphoric in all infinitival constructions, since English infinitives are never marked for φ-features. A strict interpretation of principle A of the BT rules out any constructions in which an anaphor has no syntactic binder, so that the anaphoric Agr analysis cannot account for cases of NOC and arbitrary control.

Another problem is that Hebrew future tense (which is accompanied by anaphoric Agr) allows its subjects to be lexical, while English infinitives do not. This problem has been put aside by Borer (1989) by the stipulation that English anaphoric Agr must be assumed to assign no case. As this assumption is problematic for the visibility condition, the next chapter presents a different account for obligatorily empty pronouns. Because of these differences between English empty Agr and Hebrew lexical Agr, where anaphoric Agr only has gender and number features, I conclude that Agr in English infinitivals is fully underspecified. This is one of the underlying assumptions of the account of control for Chinese by Huang (1989), which we will discuss next.

2.3.6.3. Generalized control

On the basis of Chinese pro-drop phenomena, Huang (1989: 186) proposes 'a general theory of control that determines the reference of both pro and PRO'. Genuine pro-drop in Chinese occurs only in embedded clauses, where the empty subject is controlled by a higher argument, as exemplified in (60).

(60)  
\begin{align*}
a & \quad \text{Zhangsan shuo } [(\text{ta}) \text{ lai le}] \\
   & \quad \text{Zhangsan say [he come ASP]}
   \quad \text{‘Zhangsan said that he came’}

b & \quad \text{Zhangsan xiangxin } [(\text{ta}) \text{ hui lai}] \\
   & \quad \text{Zhangsan believe [he will come]}
   \quad \text{‘Zhangsan believes that he will come’}
\end{align*}

(Huang 1989: 187 ff.)

Empty subjects (and objects) in matrix clauses are only allowed when they are topic-bound (cf. also Huang 1984, 1987), as in (61).
(61) A: Did Zhangsan see Lisi?  
B: wo cai [e kanjian e le]  
I guess [e see e LE]  
‘I guess he saw him’

Huang (1989) argues that, although Agr may play a role in the identification of an empty argument, it is not the only way of pro identification. He takes the cluster of Agr features to be one of the factors that may be involved in the general condition of control for empty arguments. Whereas Borer (1989) argues that a theory of control for pronominal pro/PRO can be reduced to binding condition A (cf. Manzini 1983) via anaphoric Agr, Huang (1989) argues that the pro-drop phenomena, together with PRO licensing should fall under a general theory of control.

In his view, the control domain for φ-feature identification is defined along the same lines as Manzini’s (1983) Domain Governing Category (DGC), with this difference that the control domain is not an anaphoric binding domain, but a minimal domain for the content-identification of an empty pronoun. The definitions for the generalized rule of control and control domain are as follows:

(62) **Generalized Control Rule (GCR)**
An empty pronominal is controlled in its control domain (if it has one)

(63) **Control domain**
α is the control domain for β if it is the minimal category that satisfies both (a) and (b):

a. α is the lowest S or NP that contains (i) β, or (ii) the minimal maximal category containing β.
b. α contains a SUBJECT accessible to β.

(Huang 1989: 193)

The option of (63a.i) in combination with (63b) is important to include ‘control’ of pro subjects by the locally present φ-features, if any. In this case the pronominal agreement features of at least person and number count as an accessible subject. Option (63a.ii) is relevant for the control relations with PRO, since in the latter case, there are no local φ-features which can identify PRO. The accessible subject refers to a lexical subject or agreement features in a clause or noun dominating PRO.

In contrast to the anaphoric DGC analysis of Manzini (1983),
the formulation of the GCR in (62) naturally leads us to expect instances of unbound PRO, because pronouns need not be A-bound to be licensed. However, as empty pronouns need to be locally content licensed, we expect that all control relations should observe the definition of a restricted control domain in (63), if PRO cannot be content licensed in a different way. However, let us again consider the examples in (64).

(64) a  Jan, zei [dat het slecht voor de plantjes was [om PRO\textsubscript{v/arb} ze met de nachtvorst buiten te laten]]
Jan said [that it bad for the plants was [for PRO them with the night-frost outside to leave]]
‘Jan said that it was bad for the plants to leave them outside when it was freezing at night’

b  Jan, zei tegen mij, dat het slecht voor de plantjes was [om PRO\textsubscript{v/arb} ze met de nachtvorst buiten te laten]
Jan said to me [that it bad for the plants was [for PRO them with the night-frost outside to leave]]
‘Jan told me that it was bad for the plants to leave them outside when it was freezing at night’

If (62) and (63) are correct, we expect that PRO in (64a) must be identified for content by the subject of the highest clause Jan, and PRO in (64b) must be content-identified by either the subject or the object of zeggen (say), because the highest clause is the lowest S which contains PRO and a subject accessible to PRO. The expletive subject in the dat-clause is not an accessible subject for PRO, because the expletive is coindexed with the extraposed subject clause which contains PRO. If PRO and the expletive are coindexed, this would lead to a violation of the \textit{i-within-i} filter.

However, at first impression it is unexpected that PRO in (64) may also have independent generic reference. As the infinitival clauses do not contain specified Agr morphology, we expect that PRO must be content-identified within its control domain. I propose that the possibility of an independent generic interpretation of PRO is predicted if we assume that morphology like Dutch te and English to may also identify an empty subject. As this morphology is underspecified for φ-features, however, it yields only indefinite or generic interpretations. Thus, underspecified morphology is an accessible subject for PRO, but can only minimally identify the empty subject, so that when a more specific interpretation of PRO is required, it must be coreferent with a higher argument. An advantage of this proposal is that it is able to account for the
existence of LDC-phenomena, because in these cases PRO is minimally content-identified by underspecified morphology. In section 2.4 this idea is worked out in more detail.

With respect to the difference between pro and PRO, Huang (1984, 1987, 1989) argues that this is related to the absence versus presence of structural Case, so that pro may alternate with lexical DPs, and PRO cannot. He says that in Chinese, only clauses which may be aspectually marked allow an alternation between lexical subjects and pro-subjects, as in (60) above. Clauses which cannot be marked for aspect, however, do not allow lexical subjects and are, therefore, to be characterized as PRO subjects in controlled infinitives. The examples in (65) illustrate that obligatorily controlled clauses in Chinese do not allow aspectual variation, nor lexically realized subjects.

\[(65)\]

\begin{align*}
\text{a} & \quad \text{wo bi Lisi [e lai]} & \text{(Huang 1989 exx. 8a-c)} \\
     & \quad \text{I force Lisi [e come]} \\
     & \quad \text{‘I forced Lisi to come’} \\
\text{b} & \quad \ast \text{wo bi Lisi [e hui/neng/ yinggai lai]} \\
     & \quad \text{I force Lisi [e will/can/should come]} \\
\text{c} & \quad \ast \text{wo bi Lisi [e lai zhe]} \\
     & \quad \text{I force Lisi [e come DUR]} \\
\text{d} & \quad \text{wo bi ta lai le} & \text{ex. (10)} \\
     & \quad \text{I forced he come PERF} \\
     & \quad \text{‘I forced him to come’} \\
\text{e} & \quad \text{wo mei you bi ta [e lai]} & \text{ex. (12)} \\
     & \quad \text{I not have force he [e come]} \\
     & \quad \text{‘I didn’t force him to come’} \\
\text{f} & \quad \ast \text{wo bi Lisi [ta lai]} & \text{ex. (13)} \\
     & \quad \text{I force Lisi he come}
\end{align*}

The examples (65b) and (65c) show that modal and durative elements cannot occur within the embedded control clause. Thus, we can conclude that the matrix verb bi does not select complement clauses with independent functional projections for modality and aspect. If we assume that it is in these independent functional projections that Case features must be checked, the embedded subject cannot bear Case when aspectual projections are not available, so that a lexical embedded subject is ungrammatical, as in (65f). As (65f) has shown that aspectual features cannot be realized on the embedded control clause, the perfective particle in (65d) must be interpreted as belonging to the matrix verb, and the lexical pronoun ta must be analyzed as the object of the matrix verb bi, in the same way as is
indicated in (65e).

By this explanation of the examples in (65), it is the Case Filter which prevents a lexical subject in the embedded clause. As noted earlier, however, one of the problems inherent in accounting for PRO by applying the Case Filter is that the embedded subject can only be visible to the syntax by stipulation, because visibility is satisfied by Case. In the next chapter it is argued on the basis of Icelandic, Portuguese, Modern Hebrew and Standard Arabic data that all clauses are subject-predicate relations (cf. the EPP), containing a(n abstract) tense head, which serves as a predication operator and assigns (abstract) nominative case to its specifier position (cf. Déchaine 1993), so that PRO automatically falls under the Visibility Condition as the subject of both non-finite and Small Clause control constructions.

2.4. PRO as a Pure Pronoun

2.4.1. Introduction

In this section I present a detailed argument for PRO as a pronoun throughout. With respect to the local domain for PRO, I motivate why I adopt the traditional analysis that infinitival control clauses are CPs (cf. Chomsky & Lasnik 1977). I furthermore adopt the analysis of Rooryck (1997), who argues that all infinitival complement clauses are CPs, and that the CP-barrier for A-movement is lifted for raising-constructions by movement of the entire AgrSP-complement into SpecCP. I will motivate that this analysis should be extended to include gerundive complement clauses as well. Thus, the difference between raising and control in SCs can be analyzed in the same way as in the infinitival cases. If all complement clauses are CPs, and CPs are barriers for A-movement, PRO is protected from Case-assignment from the outside. The local domain for PRO is formulated in terms of the BT, without reference to the notion of government. By the hypothesis that PRO is a pronoun, the embedded CP qualifies as the local domain for PRO, since a pronominal subject is an accessible subject for itself (cf. Chomsky 1986b).

With respect to the licensing of PRO as an empty pronoun, I propose that PRO is formally licensed by structural Case. This proposal is worked out in more detail in the next chapter. I furthermore argue that PRO is content-licensed by morphology or
control from a higher argument (cf. Huang 1989). When PRO is content-identified by underspecified morphology, it may receive an independent arbitrary interpretation, unless semantic properties of construction require a more specific control relation. This analysis predicts that it is possible for morphologically identified PRO to be involved in long distance coreference relations (or LDC). When PRO cannot be minimally content-identified by morphology it must be controlled within a local control domain.

This analysis offers a solution to the problem of unbound PRO, the locality problem of PRO and the visibility problem of PRO in a syntactic way. I assume that an account of the sometimes compelling interpretation of morphologically identified PRO is beyond the scope of syntax, in the same way as compelling coreference of lexical pronouns cannot be accounted for within the syntax. As anaphoric analyses of PRO must also appeal to semantic properties which determine the actual controller in cases of more than one potential controller in the local domain, the pronominal analysis of PRO is advantageous over anaphoric analyses, since it has done away with syntactic inconsistencies.

2.4.2. Defining the locality domain for PRO

The traditional idea that controlled infinitives are always CPs is first of all motivated by the existence of controlled clause which contain overt material in their SpecCP. Examples of these were given in (35c) and (36), repeated here in (66).

\[(66)\]

- a. Louise signaled Tom [for him to follow her]
- b. Louise taught Tom [what PRO to do t in case of an emergency]
- c. Louise taught Tom [when PRO to speak up]
- d. Louise signaled (Tom) [when PRO to follow her]
- e. Louise signaled (Tom) [who PRO to follow t]

A second motivation for assuming that controlled infinitives are CPs comes from Case-theory. The examples in (42), repeated in (67), show that transitive ECM-verbs like believe assign accusative Case to the embedded subject, whereas transitive control verbs like try and promise cannot.

\[(67)\]

- a. John tried [("himself) to ride his bike]
- b. John promised (Mary) [("himself) to buy a new bike]
Therefore, it was concluded that the CP must function as a barrier for Case-assignment via government, and that this barrier was lifted by S-bar (or CP-) deletion in the Case of ECM-constructions.

As mentioned in chapter 1, however, I will adopt a raising-to-object analysis (cf. Postal 1974; Hornstein 1994; Rooryck 1997) for accusative subjects. This analysis is based on the idea that structural Case is checked in a relevant functional projection. Examples like (68) show that a sentential adverb intervening between the embedded subject and the embedded predicate has scope over the matrix verb.

(68) a John expected Bill, incorrectly, to have lied
   b John expected [\text{Ag}_{\text{OP}} Bill, incorrectly, [\text{VP} \ [ t \text{ to have lied}]])
      (Borer & Johnson, lecture notes 1994)
   c They found Germany recently to have been justified in
      sinking the \text{Lusitania}  
      (Postal 1974, in Rooryck 1997)
   d I’ve believed Gary for a long time now to be a liar
      (Kayne 1985, in Rooryck 1997)

The grammaticality of these constructions cannot be explained if accusative Case is assigned under government to the subject position of the lower clause, since then it would be expected that the intervening adverb can only have embedded scope, since it would be realized in the embedded clause. As the adverb in (68) has scope over the matrix clause, I will conclude that both the adverb and the embedded subject are in the higher clause. Therefore, the embedded subject must have raised, at least by LF, into the domain of the matrix clause.  

\[13\]

\[13\] Similar tests with adverbs have been used to argue for an ECM analysis under government from the higher verb (cf. Radford 1988: 321). Consider the examples in (i) and (ii). The sentences are ungrammatical with matrix scope of the adverb and reflexive anaphor.

i a John believed Mary \textit{firmly} to be innocent
   ii a John believed Mary \textit{himself} to be innocent

For Radford (1988) these examples show that an ECM subject must be lexically realized inside the embedded clause. However, it has been argued that different types of adverbs may occupy different positions (cf. Cinque 1995). From the different grammaticality judgements, we may conclude that the manner adverb in (i) is located in the embedded clause, but the judgemental and temporal adverbs in (68) above are located in the matrix clause, as indicated by their matrix scope. The requirement for anaphors like the reflexive in (ii) that they must be bound in a domain with an accessible subject, can also be maintained under an analysis of raising to object of the embedded subject, because the anaphor will be locally
The infinitival complement clauses of ECM or raising-to-object constructions have traditionally been analyzed as instances of CP-deletion, because these constructions do not allow *wh-operators in the embedded SpecCP. This is illustrated by the ungrammaticality of the examples in (69).

(69) a  *John believed [when Mary to leave]
b  *John believed Mary [when t to leave]
c  John decided [when to leave]

Although an explanation for (69a) on the basis the adjacency requirement for Case-marking under government cannot be maintained in the light of the examples in (68), a comparison of (69b) and (69c) suggests that there is no position available for the *wh-operator in the embedded clause in (69b), while there is such a position in the controlled clause in (69c). Moreover, the embedded subjects in (68) undergo A-movement, so that successive cyclic movement via an A-bar position like SpecCP would wrongly predict raising-to-object to be ungrammatical because of improper movement. Thus, it may be and has been argued that raising-to-object infinitives have undergone CP-deletion, so that the embedded clauses have a reduced IP-status.

As CP-deletion seems to be rather ad hoc, since it only occurs in subject-raising environments, it was proposed by Rooryck (1997) that infinitival complement clauses of both raising and control verbs may be analyzed uniformly as CPs. As raising verbs like seem and believe may generally also select finite CP-complements, the analysis of raising infinitives as CP complements is attractive for reasons of syntactically uniform complementation. Consider (70).

(70) a  Sue believes that Alfred is smoking
b  To Sue, it seems that Alfred is smoking
c  Sue believes Alfred to be smoking
d  To Sue, Alfred seems to be smoking

These examples illustrate that a raising-to-object verb like believe and a raising-to-subject verb like seem may select finite that-clauses, which are unambiguously CPs. Rooryck (1997) proposes that the raising constructions should be analyzed in two steps. First the entire embedded AgrSP moves into the embedded SpecCP, and second, the embedded subject moves to the available matrix Case position. The

bound to subject trace in the domain of the embedded clause.
configurations are given in (71).

(71) a  Sue [XP believes [AgrSP Alfred tV-AO [VP tV [CP [AgrSP tAlfred to be smoking]]] C0 tAgSSP]]

b  To Sue, [AgrSP Alfred seems AgrS] [VP tV [CP [AgrSP tAlfred to be smoking]]] C0 tAgSSP]]

(Rooryck 1997: ex. 51)

Rooryck (1997) gives a semantic motivation for the movement of the embedded AgrSP to SpecCP, arguing that the embedded event is focused and must therefore check a [+Focus] in the embedded CP.14 Further movement of the embedded subject to a matrix A-position is licensed, because there is no intermediate A-bar position, so that improper movement is avoided (cf. Rooryck 1997: 14). This analysis correctly predicts the impossibility of a wh-operator in raising clauses, since although the embedded clause is a CP, the specifier of CP is occupied by the raised AgrSP, so that there is no position available for wh-operators.

According to Rooryck (1997) the difference between control and raising constructions is that the former do not have a [+Focus] feature to check in the embedded CP. As a consequence, the controlled AgrSP does not move into SpecCP, so that the embedded subject is prevented from movement into the higher clause, and SpecCP is available for wh-operators. If raising-to-object and raising-to-subject constructions are to be analyzed as CPs, this suggests that the all types of infinitival controlled clauses should also be analyzed uniformly as CPs. This requires a different explanation of the VR-phenomena of Dutch, which Koster (1984) used to support the reduced IP-analyses of certain controlled clauses.

I will adopt Rooryck’s (1997) proposal that all infinitival complements are CPs, because it provides a uniform analysis of complementation and it is compatible with recent developments in linguistic theory, which claim that the underlying word order for Dutch is SVO rather than SOV (cf Chomsky 1993, 1995; Zwart 1993; Kayne 1994). In what follows I show that an overall CP analysis of controlled infinitival complement clauses allows indeed an alternative explanation of the VR-data of Koster (1984).

14Rooryck (1997) further motivates the presence of a [+Focus] feature that needs to be checked in CP by the idea that verbs like believe and seem are lexically specified for a ‘comparison’ feature. He claims that the comparison feature refers to a comparison of events, because these verbs describe actual events in terms of other events, which they seem or are believed to be like.
In an SVO analysis of Dutch, the base position of a complement clause is to the right of the verb, i.e. the thematic position for complements. In this framework, it is generally accepted that no structural Case is assigned in \( \theta \)-positions, but that selected arguments must move at some point in the derivation (before or after overt Spell Out, i.e. in the overt syntax or at the interpretational level of LF) to the appropriate position, to pick up their Case features, because these make an argument chain visible to the syntax. By this analysis of Dutch, the examples in (43) must be reanalyzed as in (72).

\[(72)\]

(a) Jan zei dat hij probeerde [(om) Bill te bezoeken]
Jan said that he tried [(for) Bill to visit] (DS/SS)
 'Jan said that he tried to visit Bill'

(b) Jan zei dat hij [(om) Bill probeerde [PRO te bezoeken]
Jan said that he [(for) Bill tried [PRO to visit] (SS)

(c) *Jan zei dat hij [(om) PRO Bill te bezoeken] probeerde
Jan said that he [(for) PRO Bill to visit] tried

Whereas in (43) the (c) example was taken to represent the underlying SOV structure, the (a) example in (72) represents the alternative underlying SVO word order of the matrix clause. The underlying SVO-order is also a possible surface word order. The DP-object of the embedded verb has raised to the embedded accusative Case position. The ungrammaticality of (72c) is compatible with the generalization that clauses resist overt Case-assignment (cf. Stowell 1981), so that it is expected that complement clauses, unlike direct object DPs, do not raise overtly for Case-checking reasons. The presence of the lexical complementizer in (72b) is ungrammatical, because the position of the complementizer is not a base-generated position and there is no motivation for movement of the complementizer out of the complement clause. The SVO-analysis, however, raises the question why the presence of a lexical complementizer is ungrammatical in the position indicated in example (73).

\[(73)\]

Jan zei dat hij Bill, probeerde [(om) PRO \( t_i \) te bezoeken \( t_i \)]
Jan said that he Bill tried [(for) PRO to visit]
 'Jan said that he tried to visit Bill'

I propose that an explanation for this must be related to the feature composition of the lexical complementizer *om* and the fact that the embedded object must move through SpecCP. If the embedded
object has raised into the matrix clause, this cannot be Case-driven movement, since the example in (72a) shows that the object can be Case-licensed in the embedded clause itself. Therefore, optional scrambling of the embedded object must be an instance of A-bar movement. As the embedded clause is a CP, the scrambled object must move via the embedded SpecCP. However, example (73) shows that this is ungrammatical, suggesting that both SpecCP and C^o contain meaningful material.

There are other examples of controlled complements in Dutch which disallow a filled SpecCP to co-occur with the complementizer *om. Consider the examples in (74) and (75).

(74) a  *Jan vroeg zich af [wat om te doen]  
   John wondered [what for to do]  
  b  *Jan vroeg Marie [wat om te doen]  
   John asked Mary [what for to do]  
  c  *Jan wist niet [wat om te doen]  
   John knew not [what for to do]

In (74), it is shown that *om excludes the licensing of *wh-operators in the specifier of the controlled CP. The examples in (75), however, show that embedded *wh-operators are much better when the complementizer is not lexicalized.

(75) a  ?Jan vroeg zich af [wat te doen]  
   John wondered [what to do]  
  b  ?Jan vroeg Marie [wat te doen]  
   John asked Mary [what to do]  
  c  ?Jan wist niet [wat te doen]  
   John knew not [what to do]

Although it may be suggested that the ungrammaticality of (74) can be explained by appealing to the doubly-filled-Comp filter (cf. Chomsky 1981), this explanation is inadequate, since Dutch allows doubly filled Comps in other constructions, as shown in (76).

(76) a  [CP Wanneer ga [lij vertrekken]]  
   [When go [you leave]]  
   ‘When are you leaving?’
  b  Jan vroeg [CP wanneer of/dat jij vertrekken]  
   Jan asked [when if/that [you will leave]]  
   ‘Jan asked when you want to leave’
Instead, I propose that the ungrammaticality of (74) may be explained if we assume that *om*-infinitives in Dutch differ from infinitives with an empty C with respect to the presence or absence of an empty operator in SpecCP, which prevents the realization of a wh-operator in SpecCP. If this is correct, we may also explain the ungrammaticality of object scrambling in (73), since if *om* in C requires an empty operator in SpecCP, this may prevent A-bar movement into the higher clause. Furthermore, the empty operator may be regarded as a syntactic linking device inducing obligatory control, in the same way as in infinitival relatives. As it is beyond the scope of this study to investigate the exact nature of this operator, however, I will refrain from speculating about this issue and leave it as a question for further research.

I claim that object scrambling cannot involve movement of the entire embedded AgrSP to SpecCP, because then the embedded subject position would no longer be protected from A-movement, so that we would need an additional explanation why the embedded object and not the embedded subject moves. The idea that scrambling does not involve the raising of te entire embedded AgrSP to SpecCP is supported by the fact that practically all control verbs license object scrambling in Dutch, not only those control verbs which also have a raising variant. Consider the examples in (77).

(77) a Jan heeft Marie belooofd [(om) PRO haar dat boek te geven]  
Jan has Marie promised [(for) PRO her that book to give]  

b Jan heeft Marie dat boek belooofd [PRO tᵢ te geven]  
Jan has Marie that book promised [PRO tᵢ to give]  

c Jan heeft Marie gedreigd [(om) PRO haar ontslag te geven]  
Jan has Marie threatened [(for) PRO her dismissal to give]  

d Jan heeft Marie ontslag gedreigd [PRO tᵢ te geven]  
Jan has Marie dismissal threatened [PRO tᵢ to give]  

e Jan heeft Marie gevraagd [(om) PRO dat boek mee te nemen]  
Jan has Marie asked [(for) PRO that book with to bring]  

f Jan heeft Marie dat boek gevraagd [PRO tᵢ mee te nemen]  
Jan has Marie that book asked [PRO tᵢ with to bring]  

g Jan heeft Marie afgeraden [(om) PRO dat boek te lezen]  
Jan has Marie discouraged [(for) PRO that book to read]  

h Jan heeft Marie dat boek afgeraden [PRO tᵢ te lezen]  
Jan has Marie that book discouraged [PRO tᵢ to read]  

The fact that scrambling in constructions with *beloven* and *dreigen* in (77b,d) are judged ungrammatical by some speakers suggests that the
[+Focus] features of the raising variant of these verbs may interfere with the semantic features which license scrambling in the control variant of these verbs, since the scrambling constructions in (77f,h), which involve exclusive control verbs, are generally judged grammatical.

The examples in (78) show that proberen, beloven and dreigen allow raising-to-subject constructions, because they may occur in weather-expressions, whereas exclusive control verbs like afraden and uitstellen cannot.

(78) a  Het probeert zonnig te worden, maar het zet niet door
It tries sunny to become, but it puts not through
‘It tries to get sunny, but it never really does’

b  Het belooft mooi weer te worden
It promises nice weather to become
‘It promises to become nice weather’

c  Het dreigt te regenen
‘It threatens to rain’

d  *Het raadt af te regenen
It discourages to rain

e  *Het vraagt te regenen
It asks to rain

It may be that the raising analysis of these verbs interferes with their control analysis for some speakers, so that, if raising is licensed, it can only be for reasons of focus. In this case, the entire AgrSP must move into SpecCP, licensing A-movement of the embedded subject, rather than A-bar movement of the embedded object.

From the above we may conclude that all controlled infinitival complements are CPs, so that PRO is protected from A-movement for Case-checking reasons. By the hypothesis that PRO is a pronoun, the controlled CP is the locality domain for PRO, since PRO is an accessible subject for itself, and the embedded clause contains the Complete Functional Complex (Chomsky 1986b) (i.e. syntactically realized arguments) of the embedded head. The hypothesis that PRO is a pronoun entails that subject and adjunct clauses, whether infinitival, gerundive or verbless are also independent local domains for PRO, because A-movement out of these clauses is ungrammatical, so that the controlled clause contains PRO as an accessible subject to itself and the CFC of the embedded
Although almost all Small Clause Complements in English are raising-to-object constructions, as in (79a-c), gerundive complements also license a PRO subject, as in (79d), or a genitive subject, as in (79e).

(79)  

a. Peter considered him [ti/k a fool]  
b. Peter considered him [ti/k foolish]  
c. Peter remembered him [ti/k locking the door]  
d. Peter remembered [PRO [ti/k locking the door]  
e. Peter remembered [his [ti/k locking the door]  

Traditionally, SCs have been analyzed as reduced ECM clauses, so that the matrix verb could assign accusative Case to the adjacent embedded subject under government. As motivated above, however, the alternative analysis of ECM infinitives as full CPs licensing raising-to-object constructions is more adequate to account for sentential adverbs to the right of the embedded subject, which nonetheless have matrix scope. In order to account for the possibility of PRO subjects in gerundive complements, it would be attractive if SC-complements can be argued to be full CPs, as well.

As controlled verbless SCs only occur as adjuncts, their exact status is not relevant. Adjuncts are independent local domains, which disallow A-movement out of their clause, so that a pronominal subject will always be free in this minimal domain. For gerundive SCs, however, the status is relevant, since it must be accounted for that gerundive complement clauses license PRO subjects. If gerunds are reduced clauses, we would expect that gerundive complements are always raising-to-object constructions, as (79c). The fact that the example in (79d) is grammatical, suggests that the embedded subject is protected from raising to the matrix accusative Case position. Although gerunds also have nominal properties, as illustrated by the fact that (79e) contains a genitive subject, I will assume that gerunds are basically clausal, since they assign accusative Case to their objects (79c,d,e). As DPs cannot assign structural Case to their objects, I conclude that gerunds must be CPs, so that the subject is protected from A-movement into the higher clause.16

15 With respect to the syntactic status of controlled infinitival adjunct clauses, however, I propose in section 3.5.5. of the next chapter that at least purpose clauses, temporal adjunct clauses and infinitival relatives are CPs.

16 On the bases of wh-extraction phenomena, Coopmans & Stevenson (C&S, 1991) argue that ECM-infinitives and Small Clauses should be analysed as full CPs.
Thus, if the nature of PRO is defined as in (80), the locality domain for PRO can be defined in terms of principle B of the binding theory, as in (81).

(80) **The nature of PRO**
PRO is an empty pronominal subject

(81) **Locality domain for PRO**
A is the locality domain for PRO if A is the minimal maximal projection containing PRO and the Complete Functional Complex of the head of A.

### 2.4.3. The licensing of PRO

A general requirement for empty pronouns is that they are licensed both for form and content (cf. Rizzi 1986; Jaeggli & Safir 1989). If PRO is an empty pronoun, it must be formally licensed and content-identified. As formal licensing is the topic of the next chapter, I will only briefly mention my hypothesis here. In this section I will discuss my ideas about content-licensing in more detail.

Formal licensing of empty pronouns has generally been argued to happen by structural Case-assignment or checking (cf. Rizzi 1986). In the next chapter it is argued that PRO, although it does not alternate with lexical DPs, is nonetheless formally licensed by structural nominative Case, so that it automatically satisfies the Visibility Condition.

(82) **Formal licensing of PRO**
PRO is formally licensed by structural nominative Case.

The fact that PRO is in complementary distribution with lexical DPs is argued to be related to the absence of the language specific licensing features for lexical DPs: [+finite] Tense and [+specified]

Their analysis, however, is not compatible with Rooryck’s (1997) analysis of raising-to-object infinitives, because C&S (1991) make use of the embedded SpecCP as an intermediate landing-site for *wh*-operators which crucially functions as a local antecedent-governor, while Rooryck (1997) argues that this position is unavailable for *wh*-operators, since the entire AgrSP moves into SpecCP. As lexical *wh*-operators are never licensed in ECM or SC-complements, I adopt Rooryck’s (1997) analysis as the empirically more correct analysis.
agreement features of person and number.\textsuperscript{17} Content licensing of empty pronouns in \textit{pro}-drop languages has generally been argued to be a matter of $\phi$-feature identification via a local Spec-Head relation with pronominal $\phi$-features (of at least person and number) in AgrSP. As the $\phi$-features in most non-finite and verbless clauses are fully underspecified, content-identification of PRO cannot lead to a referential interpretation, if any. In spite of this, control constructions in (8), repeated in (83), are grammatical, so that in these constructions PRO must be minimally content-identified without being controlled by a higher argument.

(83) a It is better for the environment [PRO\textsubscript{arb} to be more careful with toxic waste]
  b This is a book [PRO\textsubscript{arb} to stick pictures in]
  c [PRO\textsubscript{arb} to know him] is [PRO\textsubscript{arb} to love him]
  d In this prep school, [PRO\textsubscript{arb} eating by oneself] is highly disapproved of

The examples in (84), however, show that a PRO subject with an independent arbitrary interpretation is not always licensed.

(84) a Mary\textsubscript{i} arrived [PRO, totally exhausted]
  b John\textsubscript{i} came home [PRO, a wiser man]
  c Kate, left the house [PRO, in a foul mood]
  d *There arrived [PRO\textsubscript{arb}, totally exhausted]
  e *There came home [PRO\textsubscript{arb}, a wiser man]
  f *The house was left [PRO\textsubscript{arb} in a foul mood]

As none of the examples are complement clauses, since the examples in (83) are subject clauses and the examples in (84) are adjunct clauses, the difference cannot be attributed to the status of the control clause. If all instances of PRO are pronouns, the difference between these types of constructions cannot be attributed to the nature of the embedded subject, either. There is, however, one important difference between the two types of control clauses, namely the presence or absence of morphology. The examples in (83) all have an infinitival \textit{to} or a gerundive -\textit{ing} morpheme in the

\textsuperscript{17}The language specific licensing features for lexical nominative DPs generally seem to apply to Romance and Germanic languages. For languages like Chinese, however, these particular licensing factors do not apply, since Tense and Agreement are not lexically realized morphemes. I do not have a detailed analysis of these kind of languages, but I suggest that affixes for aspect, mood and modality may serve as minimal content licensors for empty subjects.
controlled clauses, whereas the examples in (84) do not have this kind of morphology. Therefore, I claim that PRO is minimally content licensed for an arbitrary interpretation by non-finite morphology, and that PRO must be controlled within a certain control domain (cf. Huang 1989) when it cannot be minimally content-licensed.

(85) **Minimal content-licensing of PRO**
    
    PRO is minimally content-licensed by non-finite morphology with underspecified \( \phi \)-features.

(86) **Referential content-licensing of PRO**
    
    PRO is licensed for referential content by control from a higher argument.

In this definition, ‘control’ is a pronominal reference relation between PRO and the nearest compatible antecedent outside the locality domain of PRO. If PRO is not minimally content-licensed by morphology, the controller must be in a local control domain, as defined in (87).\(^\text{18}\)

(87) **Control domain for not minimally content-licensed PRO**
    
    \( \alpha \) is the control domain for PRO if it is the minimal maximal projection containing a **subject** different from PRO

If PRO is minimally content-licensed, referential content-identification may be established by a long distance controller. The possibility of a LDC-relation also depends on the semantic properties of the control construction itself. Compare the examples in (88).

---

\(^{18}\)Although this definition of control domain resembles the definition of anaphoric binding, we concluded in our discussion of Chomsky’s (1986b) proposals in *Knowledge of Language* that the notion of ‘subject distinct from itself’ was not sufficient to account for anaphor binding, since it incorrectly predicts that both (i) and (ii) are grammatical.

(i) the children like each other’s friends
(ii) *I like myself’s friends*

Although the reciprocal in (i) allows coreference with the higher subject, the reflexive in (ii) does not. Therefore, I conclude that subjects in locality domains with a syntactically licensed CFC cannot be anaphors, but must be pronouns.
(88) a John said [that it would be better for the environment [PRO$_{arb}$ to be more careful with toxic waste]
   b *Mary said [that there arrived [PRO$_i$ totally exhausted]]
   c John said [that it had been decided [PRO$_{i/arb}$ to leave tomorrow]]
   d *Mary said [that it had been promised [PRO$_{i/arb}$ to leave tomorrow]]

The examples in (88a,c) have minimally identifying morphology, infinitival $to$, so that either an independent arbitrary interpretation or an LDC interpretation of PRO are licensed for both the subject and the complement clause. The example in (88b) has no minimally identifying morphology, and LDC is not licensed. The example in (88d) has minimally identifying morphology, but the semantic requirements of the construction do not license LDC or an arbitrary interpretation.

It may, however, be objected that constructions like those in (89) are counterexamples to the claim that only constructions with minimally identifying morphology allow an uncontrolled PRO.

(89) a It is convenient to arrive [PRO$_{arb}$ totally exhausted]
   b [PRO$_{arb}$ drunk] is a terrible thing to be

However, these examples are only apparent counterexamples, since in both constructions, the controlled clause is embedded in another controlled clause, the subject of which is the controller for the most deeply embedded PRO, as illustrated in (90).

(90) a It is convenient [PRO$_i$ to arrive [PRO$_i$ totally exausted]]
   b [PRO$_i$ drunk], is a terrible thing [PRO$_i$ to be $t_i$]
   c It is a terrible thing [PRO$_i$ to be PRO$_i$ drunk]

These representations show that PRO in the adjectival clause in (90a) is controlled by the PRO subject of arrive, which is minimally content-identified by the infinitival morpheme $to$. Similarly for the example in (90b). Here the adjectival clause originates as the complement of be, where is is controlled by the higher PRO, which is minimally content-identified by infinitival morphology. The control relation in (90b) is the same as the control relation in the extraposed clause of (90c).
2.4.4. Conclusions

In conclusion, the hypothesis that PRO is a pronoun makes it possible to analyze PRO in a uniform way throughout all its occurrences as subject of controlled complement clauses, subject clauses and adjunct clauses. This hypothesis also avoids the syntactic inconsistencies of an anaphoric analysis of PRO such as the unbound PRO-problem, the locality problem and the visibility problem. I have argued that all control clauses form an independent locality domain, so that both controlled PRO and uncontrolled PRO are compatible with a pronominal nature.

I have furthermore argued that controlled complement clauses are all CPs, so that PRO is prevented from A-movement to a higher position. I have also argued that subject and adjunct clauses are always independent locality domains for pronominal subjects, since they block A-movement out of the clause. By principle B of the binding theory, they are independent locality domains, whether their subject is PRO or a lexical pronoun, because they contain the CFC of the embedded clause. I finally argued that non-finite morphology qualifies as a minimal content-licenser for PRO, so that PRO is only obligatorily controlled in environments where no such identifying morphology is present, or in constructions where obligatory control is required by the semantics. In the next chapter we discuss the formal licensing of PRO.
3 On the Distribution and Structural Licensing of PRO

3.1. Introduction

In this chapter I propose that the distribution of PRO is formally licensed by the assignment of structural nominative Case to the specifier position of TP in a local relation with non-finite Tense. I follow proposals by Déchaine (1993) and Déchaine, Hoekstra & Rooryck (1994) who argue that (abstract) Tense is present in both verbal and non-verbal clauses, so that PRO can be licensed in both non-finite and Small Clauses. I will furthermore argue that PRO is in complementary distribution with lexical nominative subjects, because there are additional language specific requirements for the licensing of lexical nominative DPs. Before working out this proposal in detail, however, I will first discuss earlier proposals with respect to the distribution of PRO.

It is shown that the earliest proposals with respect to the distribution of PRO (Chomsky 1981, 1986a,b; Kayne 1991) account for PRO in terms of absence of licensing features for lexical DPs only. In these accounts, therefore, PRO is not ‘syntactically licensed’, so that it fails to meet the Visibility Condition for all argument chains. Having recognized these shortcomings, Chomsky & Lasnik in a later article (C&L, 1993) propose that PRO should be licensed by structural Null Case. Apart from the fact that their basic assumption that PRO is a pronominal anaphor is still problematic, for reasons given in the previous chapter, data from Icelandic (Sigurðsson 1991) and Portuguese (Raposo 1987) show that their proposal for a special Null Case for PRO is untenable, since in these languages subject positions of infinitival constructions are assigned nominative Case. For this reason I propose that Case is only one of the licensing factors for lexical nominative subjects, while it is
sufficient for the licensing of empty nominative subjects.

Although the discussion of the literature in this chapter inevitably overlaps in part with that in chapter 2, some discussion is required here, because it provides motivation for an alternative analysis. The emphasis of the literature discussion in this chapter is on the distribution, rather than the nature of PRO.

3.2. The LGB-approach to the distribution of PRO

The LGB-characterization of PRO as a pronominal anaphor (Chomsky 1981), has its consequences for the distribution of PRO. The PRO-theorem correctly predicts that PRO is excluded from all the positions indicated in example (1), since these are all governed positions.

(1) a  *PRO walks
    b  *John sees PRO
    c  *John counts on PRO
    d  *John considers \[_{AP \text{PRO}}\text{intelligent}\]
    e  *John believes \[_{IP \text{PRO}}\text{to be intelligent}\]
    f  *John hears \[_{VP \text{PRO}}\text{sing a song}\]

(Bennis & Hoekstra 1989a)

In the LGB-approach, the notion of government includes a local relation between a subject and agreement features (AGR), so that not only the examples in (1b-f) represent PRO in a position where it is governed by a c-commanding V or P, but also the example in (1a) represents a governed PRO, because the subject position of a finite verb is governed by AGR.

The LGB-account of the distribution of PRO in terms of the PRO-theorem is not only problematic for the binding properties of PRO, as discussed in the previous chapter, but also for the Visibility Condition (cf. chapter 1, (20)). The Visibility Condition (VC) requires that argument chains are syntactically visible through structural Case. As Case in the LGB-approach is assigned under government and PRO is ungoverned, PRO cannot be syntactically licensed, unless by stipulation. The distribution of PRO is thus explained in terms of what PRO is not rather than in terms of what PRO is. As PRO is a thematically selected argument with the function of subject, the Projection Principle and the Theta Criterion (cf. chapter 1, (16) and (20)) require that it be syntactically licensed. The PRO-theorem, however, prevents PRO from being syntactically
licensed in a principled way.

3.3. The Barriers account of the distribution of PRO

In *Barriers* (Chomsky 1986a) the account of the distribution of PRO in terms of the PRO-theorem is retained and worked out in more detail. It is claimed that lexically selected (i.e. L-marked) maximal projections and their specifiers are governed by the selecting lexical head, while non L-marked maximal projections are not governed. PRO is thus automatically licensed as the subject of non-finite and verbless clauses which are not L-marked, i.e. subject and adjunct clauses, because in these clauses the subject position is not governed.

Furthermore it is argued that PRO is also licensed as the subject of selected complement clauses, since the embedded subject in SpecIP is separated from the matrix governor by an additional level of projection (e.g. a CP), which constitutes a barrier under inheritance from lower IP, since this projection is not L-selected, so that it functions as a Blocking Category. In this way a subject in SpecIP of an infinitival embedded CP is not governed by the matrix verb. An embedded subject in the highest Spec position of a selected infinitival IP or Small Clause (SC), on the other hand, is lexically governed by the matrix verb and either raises to the matrix subject (e.g. *seem*) for nominative Case, or is marked for accusative case via exceptional case marking (ECM) of the specifier of the governed clause (e.g. *believe*). As the embedded subject position of selected infinitival CPs and of non-finite subject and adjunct clauses, however, are not governed or Case-marked, PRO is licensed in these positions.

Thus, the subjects of the selected SCs in (2) and the infinitival IP complement in (3) are Case marked by the matrix verb via ECM.

(2)  
   a  I thought [AP John unhappy]  
   b  I thought [DP John a great friend]  
   c  I expect [PP John in my office]  
   d  I saw [VP John leave]  
      (Haegeman 1991: 481)

(3)  
   John believed [IP Bill to have left early]

The subjects of the adjunct SCs in (4) and the infinitival CP-complement clause in (5), on the other hand, are not governed by the matrix verbs, either because they are not selected by the verb, or because the CP functions as a barrier for government of the embedded subject. As a consequence the embedded subjects are not
assigned Case by the higher verb, and as the infinitival clauses do not contain a governor for the embedded subjects, they must be instances of PRO.

(4) a John arrived \(_{l_{AP}}\) PRO totally exhausted]  
b John came home \(_{l_{DP}}\) PRO a wiser man]  
c John came home \(_{l_{PP}}\) PRO in a foul mood]  

(Haegeman 1991: 483)

(5) John tried \(_{l_{CP}}\) \(_{l_{IP}}\) PRO to leave early]]

There are, however, some problems with this analysis, since in certain constructions the position of the embedded subject seems to be governed by a complementizer or preposition without being lexically realized. Compare the examples in (6) and (7).

(6) a [After [PRO having finished his homework]] John went to bed  
b [Before [PRO going to school]] Mary sorted out her books

(7) a I tried [for PRO to get them] (Belfast E., Henry 1992)  
b Ik probeerde [om PRO ze te krijgen] (Dutch)  
I tried for them to get  
c Jean essaie [de PRO comprendre] (French, Kayne 1991)  
Jean tries for to-understand

The gerundive control constructions in (6) seem to be directly governed by the preceding preposition, and the infinitival clauses in (7) also seem to be governed by a prepositional complementizer. In none of these sentences, however, the embedded subject may be lexicalized. Therefore, I will present a different analysis for the distribution of PRO in sections 3.5 and 3.6. First, however, we will turn to an account of the distribution of PRO that is based on a modified version of the PRO-theorem.


In this section we discuss Kayne’s (1991) account of the distribution of PRO. The analysis is based on Chomsky’s (1986b) proposal in Knowledge of Language (KoL) that the local domain for anaphors in subject position must contain an accessible subject distinct from the anaphor itself, whereas the local domain for pronominal subjects
need not contain a subject distinct from itself (for a discussion see chapter 2, section 2.3.4). I will argue that Kayne’s (1991) theory of the distribution of PRO, which crucially depends on the application of the PRO-theorem with respect to an outside governor, fails to account for Dutch and Belfast English, because in these languages PRO is arguably governed by a lexical complementizer in $C^0$, *om and *for, respectively.

In his (1991) article, Kayne develops a theory of PRO and clitic placement by comparing French and Italian. He maintains the standard characterization of PRO, in that PRO is a pronominal anaphor. I will briefly represent his clitic placement analysis, because this analysis leads Kayne to assume two different positions for the infinitives in French and in Italian, on the basis of which it is argued by him that PRO may (but need not) be governed by the embedded infinitive. Kayne (1991: 648) gives the following examples of clitic placement in French and Italian.

(8) a PRO Lui parler serait une erreur (French)
   $\text{him}_{\text{DAT}}$ to-speak would-be an error
b *Parler-lui serait une erreur

c PRO Parlargli sarebbe un errore (Italian)
   $\text{to-speak-him}_{\text{DAT}}$ would-be an error
d *Gli parlarre sarebbe un errore

As can be seen from these examples, in French the clitic appears to the left of the infinitive, whereas in Italian the clitic appears to the right of the infinitive. Assuming that right-adjunction is not available for object clitics, Kayne (1991) proposes a verb movement analysis to account for the differences between the two languages, as illustrated in (9) for Italian and (10) for French (Kayne’s representations (8) and (9), respectively).

(9) Italian
   $[_{TP}\text{PRO} \ldots V + \text{Infin} \left[ T \ldots \text{Cl} + T^0 \ldots \text{[InfinP e]} \ldots \left[ \text{VP} \left[ v \ e \right] \ldots \right]]$

(10) French
     $[_{TP}\text{PRO} \ldots T^0 \left[ \text{InfinP} \ldots \text{Cl} + \left[ \text{Infin} \ V + \text{Infin}^0 \right] \ldots \left[ \text{VP} \left[ v \ e \right] \ldots \right]]$

Following Pollock (1989), Kayne (1991) assumes at least two abstract infinitival projections, one for tense (TP) and one for agreement or infinitive marking (InfinP). Kayne takes Tense to dominate InfinP and follows Raposo (1987) and Reuland (1983), in assuming that the infinitival inflection of Romance is nominal in nature, like English
gerundive -ing. Kayne (1991) argues on the basis of sentential adverb placement that both the infinitival verb and the clitic are in higher position in Italian than in French. He claims that the Italian infinitive moves to left-adjjoin to T', while the French infinitive moves only as far as InflP, and that the Italian clitic left-adjoins to T0, while the French clitic left-adjoins to Infl0 (Kayne 1991: 653).

Thus, if PRO is licensed in SpecTP, it is unguoverned in the French example in (8a), since the controlled clause is not L-marked, and the embedded infinitive in Infl0 does not c-command PRO in SpecTP. In the Italian example in (8c), on the other hand, PRO, although not in an L-marked clause, is governed by the embedded infinitive, since the infinitive is adjoined to T', so that it c-commands PRO in SpecTP. From this Kayne (1991) concludes that the PRO-theorem is valid only for government from outside governors, such as higher verbs or lexical complementizers.

There are, however, two problems for Kayne’s analysis. First, the KoL assumption that PRO is a pronominal anaphor holds that PRO is always pronominal and anaphoric at the same time. This wrongly predicts that PRO is always bound in some anaphoric domain. This approach cannot, however, account for the fact that PRO in the examples in (8) and their English equivalent in (11) is unbound.

(11) It would be a mistake [PROarb to speak to him]

With respect to Kayne’s analysis of clitic placement, however, nothing hinges on the nature of PRO, so that if we adopt the hypothesis that PRO is a pronoun, we can account for the fact that PRO may be unbound, without having to change the analysis of clitic placement.

A second problem for Kayne’s (1991) analysis of the distribution of PRO, however, is that in some cases, English and French seem to combine lexical complementizers, e.g. whether and de, respectively, with a PRO in SpecTP. Kayne (1991) argues that these elements should not be analyzed as heads in C0, but as specifiers of CP, as in (12).

(12) a He doesn’t know [CP whether C0 [IP PRO to go to the movies]]

b Jean essaie [CP de C0 [ PRO comprendre]]

Jean tries DE to-understand

However, Kayne’s (1991) account runs into problems with respect to
Dutch language facts, since Dutch arguably allows a lexical complementizer in $C^0$ in controlled infinitival clauses. The Dutch infinitival complementizer *om* is optionally present in most controlled complements, as illustrated in (13).

(13) Jan probeert [(om) PRO het te begrijpen]  
Jan tries [(OM) it to understand]

If we try to extend Kayne’s account to Dutch, the problem is that *om* is obligatorily present in infinitival relatives, which are generally analyzed as containing an empty operator in their specifier position, as in (14).

(14) a Wij hebben een loodgieter nodig [$_{CP}$ Op$_i$ om [$_{TP}$ PRO$_i$ de afvoer te maken]]  
We have a plumber needy [$_{CP}$ Op$_i$ for [$_{TP}$ PRO$_i$ the drain to fix]]
‘We need a plumber to fix the drain’

b Dit is een album [$_{CP}$ Op$_i$ om [$_{TP}$ PRO foto’s in e$_i$ te plakken]]  
This is an album [$_{CP}$ Op$_i$ for [$_{TP}$ PRO photo’s in e$_i$ to stick]]
‘This is an album to stick photo’s in’

If we adopt the standard analysis of relative constructions, these examples show that *om* is a lexical head in $C^0$. If PRO is thus licensed in SpecTP, as is argued in more detail later in this chapter, the PRO-theorem cannot account for the distribution of PRO, since *om* is a lexical governor for PRO, and the lexical verb is too low in the structure to function as a closer governor for PRO.

In this respect it is worth noting that the dialectal for complementizer of Belfast English must also be considered to originate in the $C^0$ position (and cliticize to $T^0$, as argued by Henry 1992), since it allows *wh*-elements in its specifier, as illustrated in (15).

(15) He wasn’t sure [what for PRO to do] (Henry 1992)

If *for* stays in $C^0$, PRO would be governed by the lexical complementizer, but if *for* has cliticized to $T^0$, PRO is licensed in an ungoverned position, since it is not governed by a lexical complementizer in $C^0$, nor by the infinitival verb, since this remains in $V^0$ and is is thus too far from PRO in SpecIP to be a closer
governor. Infinitival to (or the complex for-to) cannot be a closer governor, either, since it stays in $T^0$, so that it cannot c-command PRO in SpecTP. If PRO has anaphoric properties, the fact that it may be ungoverned makes it impossible to define a local binding domain for the anaphoric properties of PRO.

If, however, we take PRO to be an empty pronoun, it makes no difference whether PRO is governed by a lexical governor or not, since pronouns are licensed in either governed or un governed positions. In an embedded clause, pronouns may be governed by lexical complementizers, for instance, by that and if, but also by finite verbs or auxiliaries in inverted constructions. They may, however, also remain ungoverned, in matrix clauses, or in embedded clauses where the complementizer remains empty.\(^1\) Compare the various examples in (16).

(16) a John promised (that) he would leave soon
    b John wondered if he would still be in time
    c When did she leave?
    d Wanneer ging zij weg?
      When went she away
    e He left

Although the pronouns in these sentences may be governed by a lexical complementizer, this complementizer is not a licensing factor for the presence of the lexical pronoun. Rather, the lexical pronouns are licensed by structural nominative Case which is assigned to them in a Spec-Head relation with finite Tense, in both (selected) embedded clauses and root clauses.

Therefore, I will argue that it is not a violation of the PRO-theorem which is responsible for the ungrammaticality of PRO in certain governed positions. Instead, I propose that it is the finite character of tense which is responsible for lexical nominative subjects and the transparency of certain positions for A-movement to accusative Case positions for ECM-subjects. As government is a configurational relation depending on the notion of c-command, it is an ad hoc solution to say that some heads are (proper) governors, while other heads are not (cf. Chomsky 1981). If independently of government, \([\pm\text{finite}] \text{Tense}\) is responsible for the licensing of PRO

\(^1\) Although Chomsky (1981) argues that \([\pm\text{finite}] \text{Tense}\) is also a (non-lexical) governor for the nominative subject, this can only be so under an m-command definition of government. As Kayne (1991) assumes a c-command definition of government, \([\pm\text{finite}] \text{Tense}\) in $T^0$ cannot govern the subject in SpecTP.
or a lexical subject, the distinction between governing and non-governing heads is not relevant. Complementizers like *that* and *if* only occur in finite clauses, so that finite Tense licenses lexical nominative subjects in SpecTP. Empty complementizers, with or without an element like *whether* in their specifier, do not impose any restrictions with respect to finiteness of their complements, so that the embedded Tense can be either finite or infinitival. In the former case this results in a lexical nominative subject, and in the latter case it results in an empty PRO subject, as illustrated in (17).

(17) a  John promised [CP Ø [TP he would leave]]
   b  John promised [CP Ø [TP PRO to leave]]
   c  John wondered [CP whether Ø [TP he should leave]]
   d  John wondered [CP whether Ø [TP PRO to leave]]
   e  Jón sagði [CP Spec að [TP þessa bók hefsi ég átt að lesa]]
      J. said that this book had I ought to read
      'J. said that I should have read this book' (Icelandic)
   f  María lofaði [CP Spec að [TP lesa bokina]]
      Mary promised to-read the book

These examples suggest that PRO is not licensed by virtue of the PRO-theorem, but rather by non-finite Tense. Some complementizers are lexically specified for either finite (e.g. *that*, *if*) or infinitival (e.g. Dutch *om*) Tense, while others are indifferent with respect to the Tense of their complement clause (e.g. an empty complementizer in English, or Icelandic *að*). This approach to PRO licensing can also account for the difference between Italian and French with respect to the examples in (18), from Kayne (1991).

(18) a  Gianni non sa [CP Spec se [IP PRO andare al cinema]]
      Gianni NEG knows if to-go to-the movies (Italian)
   b  *Marie ne sait pas [CP Spec si [IP PRO aller au cinema]]
      (French)

Both *se* and *si* are C⁰ elements, so that the specifier versus head distinction cannot explain the grammaticality of (18a). In Kayne’s (1991) analysis the verb movement for Italian the embedded infinitive in (9) is the closer governor for PRO in (18a), so that PRO is prevented from being governed by the ‘outside governor’ *se*, and PRO is licensed, because the PRO-theorem only applies to outside

---

²The Icelandic examples have been taken from Holmberg & Platzack (1995: 79, 117)
governors. In (18b) PRO is not prevented from being governed by *si*, because the infinitive is too low in the structure, so that here the PRO-theorem accounts for the ungrammaticality.

The examples in (13) to (15), however, suggest that in Dutch PRO cannot be prevented from being governed by the lexical complementizer in C⁰, because the embedded verb and infinitival *te* is too low down in the structure to be a candidate for a closer governor. Instead, I will assume that *om* in Dutch does not have Case assigning properties, unlike its prepositional counterpart and the *for*-complementizer in Standard English.

The lexical selection approach which is needed to account for the licensing of either infinitival or finite clauses as complements to certain complementizers in (17), may also be applied to account for (18a,b). This suggests that Italian se is a complementizer with a [-finite] specification for its complement clause, while French *si* is a complementizer with a [+finite] specification for its complement clause. In contrast to infinitival Tense, finite Tense licenses a lexical nominative subject and even requires lexical subjects in non pro-drop languages like French, English and Dutch. Therefore, I conclude that PRO in the examples given above is licensed by infinitival Tense, rather than by the application of the PRO-theorem. In the next section we will discuss how non-finite Tense is involved in the licensing of PRO, and see that the alternative account provides a systematic way to make PRO syntactically visible.

3.5. PRO and structural Case

3.5.1. Introduction

In this section, I propose that PRO is licensed by structural nominative Case assigned by infinitival T⁰, so that it automatically falls under the Visibility Condition for syntactically represented arguments. It is argued that PRO cannot alternate with lexically realized nominative DPs, because these must be licensed by either finite Tense or [+specified] subject agreement features. As a consequence, the PRO-theorem plays no role in the account of PRO licensing, since not government relations, but local Spec-Head relations (cf. Chomsky 1995) determine when and where structural

---

³This conclusion does not necessarily affect the analysis of clitic placement and infinitival verb movement by Kayne (1991).
Case is assigned. In what follows, I argue that the notion of Structural Null Case, as proposed by Chomsky & Lasnik (1993) to subsume PRO automatically under the Visibility Condition, is not a primitive notion, but should be analyzed as a combination of structural nominative Case assigned by Tense and the absence of licensing features for lexically realized nominative DPs, namely finiteness and [+specified] agreement features.

In subsection 3.5.2 data from Icelandic (cf. Sigurðsson 1991) are presented, which support the idea that PRO bears structural nominative Case in the same way as lexical subjects. In subsection 3.5.3 data from Portuguese (cf. Raposo 1987) show that [+specified] agreement features are sufficient to license a lexical nominative subject in the absence of finiteness. As we also know instances of lexical nominative subjects in tensed clauses without agreement features (e.g. Mainland Scandinavian, English past tense), it is concluded that the presence of at least one of the two licensing factors, either [+specified] agreement or finiteness, is sufficient to license lexical nominative subjects.

In subsection 3.5.4 we will discuss the position of infinitival to in control clauses, arguing that the hypothesis that PRO is licensed by checking Case and agreement features in the specifiers of the functional projections of TP and AgrSP can be maintained, if the syntactic position of to in these clauses is in C'.

Subsection 3.5.5 summarizes the findings of this section and section 3.6 extends the analysis to Small Clause constructions.

3.5.2. PRO as the head of Case and agreement-chains in Icelandic

Sigurðsson (1991) argues that PRO in Icelandic is both governed and Case-marked. The evidence for Case-marked PRO comes from agreement facts between PRO subjects with quirky Case and floating quantifiers in Icelandic. When a controlled infinitive contains a floating quantifier (FQ), the morphological Case of the FQ is identical to the Case on PRO, regardless of the Case of the controller, as illustrated in (19). As FQs always form a Case-chain with the DP they modify, it must be concluded that PRO heads a Case-chain.
(19) a Strákarnir vonast til [að PRO komast allir í skóla]
the boys(N) hope for to PRO(N) get all(N) to school
‘The boys hope that they will all get to school’
b Strákarnir vonast til [að PRO vanta ekki alla í skólann]
the boys(N) hope for to PRO(A) lack not all(A) in school
‘The boys hope that they won’t all be absent from school’
c Strákarnir vonast til [að PRO leiðast ekki öllum í skóla]
the boys(N) hope for to PRO(D) bore not all(D) in school
‘The boys hope that they won’t all be bored in school’
d Strákarnir vonast til [að PRO verða allra getið í ræðunni]
the boys(N) hope for to PRO(G) be all(G) mentioned in the speech
‘The boys hope that they will all be mentioned in the speech’

The Cases on PRO and on the FQs modifying the subject in (19b-d) are inherent Cases. The claim that the nominative subject in (19a) is assigned structural Case, while (19b-d) are assigned inherent Case is supported by the fact that only structural Case assignment licenses subject-predicate agreement with respect to number and gender. The examples in (20) show that only (20a), with a structural nominative PRO, shows subject-predicate agreement, while (20b), with an inherent dative PRO, requires default morphology for its predicate.

(20) a Strákarnir vonast til [að PRO verða aðstoðaðir/*aðstoðað]
the boys(N) hope for to PRO(N) be aided(N.pl.m./
*default)
‘The boys hope to be aided (by somebody)’
b Strákarnir vonast til [að PRO verða hjalpað/
*hjalpaðir/*hjalpuðum]
the boys(N) hope for to PRO(D) be helped(dflt/
*N.pl.m./*D.pl.m)
‘The boys hoped to be helped (by somebody)’

Although it is generally accepted that only [+finite] Tense assigns structural nominative, example (20a) suggests that infinitival Tense likewise assigns structural nominative Case. Sigurðsson (1991) proposes that the –agreement/–finite feature of the governing head is the reason that the subject cannot be a lexical nominative DP but must be an empty PRO. According to him, the –agreement/–finite inflection is not a ‘proper governor’ for the SpecTP position, so that it cannot license lexicalized subjects, hence the complementary distribution of PRO and lexical DPs.
If subject-predicate agreement correlates with structural nominative Case-marking of the PRO subject, as Sigurðsson (1991) claims, this suggests that PRO contains abstract, underspecified φ-features. If so, it may be assumed that PRO is licensed by checking nominative Case in SpecTP and by checking its underspecified φ-features against the same features in AgrSP. The analysis of nominative Case marking of PRO in SpecTP also carries over to English, since English shows number agreement between subject and nominal predicate, as in (21).

(21) a  All the kids want [PRO to be doctors (pl)]
   b  *All the kids want [PRO to be (a) doctor (sg)]

The same analysis may carry over to Dutch. The examples with finite complement clauses in (22) show that Dutch predicates need not agree in number with the lexical nominative subject, but the example in (22b) shows that for some speakers predicate agreement may be lexically realized.

(22) a  De mannen wensten [dat ze allemaal dokter (sg) waren]
   b  %De mannen wensten [dat ze allemaal dokters (pl) waren]
   The men wished [that they all doctor(s) were]
   ‘The men wished that they were all doctors’

The same optionality for lexical predicate agreement is allowed in controlled complements in Dutch, as illustrated in (23).

(23) a  De kinderen wensten allemaal [PRO dokter (sg) te worden]
   b  %De kinderen wensten allemaal [PRO dokters (pl) te worden]
   The kids wished all [ PRO doctor(s) to become]
   ‘The kids all wished to be doctors’

As Dutch optionally allows subject-predicate agreement, I conclude that both finite and infinitival T⁰ assign structural nominative Case to their subject position in this language. From the examples in (20) to (23) I conclude that although structural nominative Case does not necessarily trigger predicate agreement in all languages or even in all tensed constructions within languages, T⁰ always assigns nominative Case to its specifier position. Therefore, I propose that not only [+finite], but also infinitival Tense assigns structural nominative to its specifier position, not only in Icelandic, but also in English and Dutch. This is formulated in the rule in (24).
(24) **Rule of structural nominative Case assignment**

\[ \text{[\(\pm\)finite]} \text{ Tense assigns nominative Case to its specifier in a local Spec-Head relation} \]

Sigurðsson's (1991) proposal to the effect that the impossibility of a lexically realized DP in SpecTP depends on negative feature specifications for both subject agreement and finiteness may be formulated in terms of checking of [\(-\)finite] Tense and underspecified agreement, as in (25).

(25) **Structural licensing rule for PRO**

PRO is syntactically licensed by checking

a) nominative Case in [\(-\)finite] SpecTP, *and*

b) [\(-\)specified] \(\phi\)-features in SpecAgrSP

This licensing mechanism applies to the local domain of the embedded clause itself, as argued in the previous chapter. As an empty pronoun, PRO must also be content licensed, of course. In the previous chapter we concluded that this content-licensing is a matter of minimal content-identification by non-agreeing morphology or more specific content-identification by control.

Although on the surface it cannot be discerned whether PRO is in SpecTP or SpecAgrSP, it is necessary to distinguish between the two functional projections, because a feature change in either may prevent PRO from being licensed. If the formulation in (25) is correct, it may be expected that when either Tense is [\(+\)finite] or the agreement features are [\(+\)specified], the subject may, or (in non-pro-drop languages) must be overtly realized, as formulated in (26).

(26) **Licensing rule for lexical nominative DPs**

A lexical nominative DP is licensed by checking

a) [\(+\)finite] Tense in SpecTP *and/or*

b) [\(+\)specified] \(\phi\)-features (i.e. person and number) in AgrSP

---

*Although I have argued that structural nominative Case is not sufficient for a nominative DP to be lexically realized, this does not mean I claim the same for structural accusative DPs. I will assume that the availability of structural accusative Case is sufficient to license lexical objects, so that accusative positions cannot license PRO. With respect to pro, if (26b) specifies the licensing feature for lexical subjects, pro may also be licensed, depending on whether the language in question is a pro-drop language. For instance, whereas Italian licenses pro-subjects, Icelandic does not. The licensing of lexical subjects and pro in languages like Chinese, which do not have \(\phi\)-feature or Tense specifications, may depend on the presence of aspectual features.*
This is indeed attested in various languages. Mainland Scandinavian (MSc), for instance, is well known for the absence of $\phi$-feature agreement in tensed clauses (cf. Holmberg 1986). In these languages the subject of the finite clause must be lexically realized. The same is true for English past tense, which does not show any $\phi$-feature agreement either, and likewise requires its subject to be lexical.

The alternative possibility is that finiteness is negatively specified, while the agreement features of person and number are positively specified. This is exemplified by Portuguese inflected infinitives, which we will discuss in the next section.

### 3.5.3. Nominative Case for infinitival subjects in Portuguese

The proposal that infinitival Tense assigns structural nominative Case to its specifier position is also supported by data from Portuguese. Portuguese is a pro-drop language, and has the same agreement paradigm for infinitives and finite verbs, although for infinitives the presence of agreement is optional. When it is present, however, the empty subject of the infinitive may alternate with lexical nominative subjects, but if no agreement is present only PRO is licensed. Raposo (1987) gives the following examples.

\[(27)\]
\[
a \quad \text{Será difícil [eles aprovarem a proposta]}
\]
\[
\text{will-be difficult [they to-approve-Agr the proposal]}
\]
\[
\text{‘It will be difficult for them to approve the proposal’}
\]

\[
b \quad \ast \text{Será difícil [eles aprovar a proposta]}
\]
\[
c \quad \text{Será difícil [PRO aprovar a proposta]}
\]
\[
d \quad \text{Será difícil [pro aprovarem a proposta]}
\]
\[
\text{will-be difficult [pro to-approve-Agr(3pl) the proposal]}
\]

The sentences in (27a) and (d) show that the presence of agreeing infinitives allows an alternation between lexical and empty nominative subjects. The sentences in (27b) and (c) show that, if no agreement is present, a lexical subject is not allowed, and only PRO is licensed.

Raposo (1987: 92) adopts the view that Agr in pro-drop languages is specified for the $\phi$-features, number, person, and Case. This type of Agr is taken to be a lexical pronominal realization of $N^o$ (cf. Chomsky 1981, 1982; Reuland 1983). Raposo proposes that Agr in Portuguese infinitival clauses assigns structural nominative to the subject of its clause only if Agr itself is Case-marked. In finite
clauses, the local Tense assigns nominative Case to Agr, but in infinitivals, Raposo proposes that Case assignment to Agr comes from the outside, under the assumption that non-finite Tense itself cannot assign structural nominative. As Agr is the inflectional head of the embedded infinitive, Raposo argues that the infinitival clause is non-distinct from a DP. As such, subject sentences are assigned nominative Case by the finite matrix verbs, in a Spec-Head relation with Tense, as in (28).

(28) $\text{[IP Eles aprovarem a proposta] será difícil}$

The nominative Case assigned to the subject clause percolates down to the Infl head, where Agr is thus Case-marked. Raposo (1987: 93) furthermore proposes that the way in which Case is assigned by Agr to a local subject DP is under feature matching. I interpret this structurally as a local Spec-Head relation between an infinitival Infl containing Agr features (i.e. $\phi$-features and Case) and SpecIP, so that the Agr features, including Case may be shared by the specifier of IP via Spec-Head agreement. As a consequence, the embedded subject in (28) is assigned nominative Case by Spec-Head agreement from Agr. When the subject clause is extrapoased, as in (27), Raposo proposes that nominative Case is shared with the expletive pro subject heading the Case-chain. Alternatively, the subject clause may be argued to be licensed to remain in situ until LF, as is also allowed for DP-subjects in Romance.

However, the account of Case-marking of the infinitival Agr via ‘feature matching’ is problematic for nominative subjects of complement clauses. Although finite Tense always assigns nominative Case to its subject argument, the matrix verb in (29a) or the post-nominal preposition in (29b) assign accusative Case to their complement positions (Raposo’s ex. 33).

(29) a Nós lamentamos $\text{[NP o [IP eles terem recebido pouco dinheiro]]}$
   We regret $\text{[the [they to-have-Agr received little money]]}$

b Nós lamentamos $\text{[NP o facto de [IP eles terem recebido pouco dinheiro]]}$
   We regret $\text{[the fact of [they to-have-Agr received little money]]}$

As it is structural accusative Case which is assigned to the
complement clause, it should also be accusative Case which percolates down to the infinitival Agr. If this is so, it raises the question how the embedded subject is assigned nominative Case, since if Case assignment to SpecIP is a matter of feature matching, the Case that should be matched is accusative Case, contrary to fact.

In the light of the above discussion, a promising avenue to solve these problems is to adopt the alternative assumption concerning the Case assigning properties of infinitival Tense, namely that Tense (T') always assigns structural nominative to its specifier, but that only when accompanied by finiteness and/or lexical agreement may the nominative subject be lexically realized. If we adopt this view, it is sufficient when the accusative Case is assigned to the determiner (and nominal) head(s) introducing the infinitives in (29). If infinitival Tense is the actual Case assigner for the embedded subject, Agr will merely be a licenser for the content-identification of pro, and a bundle of matching φ-features for lexical DP subjects.

This account makes several predictions. First, it is expected that not only controlled subject clauses, but also controlled complement clauses license agreeing infinitives with lexical or pro subjects Case-marked for nominative, as exemplified above. For, if the embedded Tense assigns nominative Case to its specifier, this accounts for the fact that the accusative Case assigned to the complement clause does not show up on the embedded subject. As can be seen in (29a), this prediction is borne out, since, although the controlled clause is a direct complement of the matrix verb, the embedded subject pronoun is nominative, not accusative.

Second, if infinitival Tense is the Case assigner for nominative embedded subjects, we would also expect that infinitival complements to raising verbs allow agreeing infinitives which license lexical subjects. This prediction appears to be borne out. João Costa (p.c.) has confirmed that Portuguese has the following judgements:

(30) a  *Parece [os meninos terem lavado o carro]  
   (it) seems [the boys (Nom.) have (inf.3rd.pl) washed the car]  
   b  Parece [terem os meninos lavado o carro]  
   c  Os meninos, parecem [t; ter lavado o carro]

The (c) example shows that Portuguese allows ordinary raising constructions for unaccusative verbs like seem, where the embedded subject is moved out of the embedded clause with a non-agreeing infinitive, into matrix nominative position. The grammaticality of
(30b) supports the idea that infinitival Tense plus agreement licenses lexical nominative subjects, even in infinitival complements to raising verbs, in which case the matrix clause must have an expletive pro subject.

It is, however, surprising that only the inverted word order of infinitive-subject is allowed, as illustrated in (30a,b). Raposo (1987) shows that this kind of obligatory inversion does not only occur with raising constructions, but also with controlled infinitives of a certain type. He argues that the (im)possibility of agreeing infinitives and obligatory or optional inversion are related to the presence versus absence of a Tense operator in C°. According to Raposo (1987: 87) '[i]nflected infinitives can occur in complements subcategorized for by matrix epistemic, declarative, and factive predicates; however, such infinitives cannot occur with volitional predicates.' He gives the following examples.

(31) a  *Eu penso/afirmo [ os deputados terem trabalhado pouco]
      'I think/claim the deputies to-have-Agr worked little'
  b  Eu penso/afirmo [ terem os deputados trabalhado pouco]
      'I think/claim to-have-Agr the deputies worked little'
  c  Eu lamento [ os deputados terem trabalhado pouco]
      'I regret the deputies to-have-Agr worked little'
  d  Eu lamento [ terem os deputados trabalhado pouco]
      'I regret to-have-Agr the deputies worked little'
  e  *Eu desejava [ os deputados terem trabalhado mais]
      'I wish the deputies to-have-Agr worked more'
  f  *Eu desejava [ terem os deputados trabalhado mais]
      'I wish to-have-Agr the deputies worked more'

Thus, the epistemic and declarative predicates in (31a,b) only allow inverted inflected infinitival complements, just like the raising predicate in (30). The factive predicates (31c,d) allow inflected infinitives with and without the inversion pattern. The volitional predicates in (31e,f) do not allow inflected infinitives at all, but only allow (subject) control complements.

Raposo (1987: 96ff.) claims that all three types of verbs in (31) select infinitival complement clauses which have the status of CP. On the basis of the fact that factives also select (propositional) DP-complements, he argues that infinitival complements to factives are sometimes to be analyzed as nominal IPs without a CP-level, resulting in the embedded word order subject-verb. For epistemic
and declarative predicates Raposo (1987: 89) argues that these always select an independently tensed complement clause, which is syntactically represented by a Tense operator in $C^0$ (cf. den Besten 1983; Rizzi 1982; Stowell 1981). Although these clauses do not allow propositional DP-complements, the Tense operator triggers movement of $I^0$-to-$C^0$, so that Infl is governed by the higher verb and only the inverted word order of verb-subject is allowed for epistemic and declarative clauses. Raposo furthermore claims that when factive predicates have an inverted word order in their infinitival complement clauses, the embedded clause must be analyzed as a CP with $I^0$-to-$C^0$ movement of the verb, in the same way as in epistemic and declarative clauses. With respect to volitionals, Raposo shows that these do not select propositional DP-complements. He also claims that they do not select independently tensed complements. Therefore, complement clauses to volitionals do not allow inflected infinitives, because the complements cannot be nominal IPs and there is no operator in $C^0$ to trigger $I^0$-to-$C^0$ movement, so that the embedded verbal inflection cannot be governed by the higher verb and the only possible word order is subject-verb.

The nominal IP-analysis of factive complements is, however, problematic for the fact that the embedded subject cannot be a lexical accusative DP, although it is transparent for Case-assignment from the higher verb. Therefore, I will assume that all complement clauses are CPs, so that the embedded subject is protected from Case-assignment from the higher verb. Optionality of an independent Tense specification for factive complements may then account for optional subject-verb inversion. The idea that all infinitival complement clauses are CPs is compatible with our hypothesis that the embedded subject position is assigned structural nominative Case by the embedded Tense.

### 3.5.4. Infinitival to: more than a Tense marker

In this subsection we will discuss the relative position of PRO as a structurally nominative Case-marked subject and the infinitival marker to. Baltin (1995) notes some interesting facts with respect to the position of infinitival to and what he calls 'preverbs' like all and ever in control clauses. In his account, infinitival to is in $T^0$, and PRO is a Caseless DP in SpecVP. This approach is incompatible with our analysis of a Case-marked PRO in SpecIP, so that his observations with respect to word order of to and the 'preverbs' all
and *ever* must be explained in a different way. As I want to maintain
the above conclusion that PRO is assigned nominative Case and is in
a Spec-Head relation with underspecified subject agreement in
AgrSP, I will conclude on the basis of the word order of *to* and
preverbs that in controlled clauses *to* must have moved from $T^0$ into
$C^0$ within the embedded clause.

In the previous subsections we tacitly assumed that *to*, as the
infinitival Tense marker, has its surface position in $T^0$. If infinitival
*to* is in $T^0$, we would expect that it relates to other constituents in
the same way as auxiliaries and modals. It has been observed by
Baltin (1995), however, that the relation between infinitival *to* and
floating quantifiers (FQs) like *all* and adverbials like *ever* in
controlled clauses is different from the relation between finite
auxiliaries in $T^0$ and these preverbs. Consider the following example
sentences.

(32)  
| a | The children all would have been doing that. |
| b | The children would all have been doing that. |
| c | The children would have all been doing that. |
| d | The children would have been all doing that. |

(Baltin 1995: ex. 28)

(33)  
| a | To all have been doing that would have been inconvenient. |
| b | To have all been doing that would have been inconvenient. |
| c | To have been all doing that would have been inconvenient. |
| d | *All to do that would be inconvenient. |

(Baltin 1995: exx. 29, 30)

If infinitival *to* is the non-finite counterpart of a modal like *would* in
(32), and PRO is licensed in SpecAgrSP, like the finite subject in
(32), we would expect that the sentence in (33d) is as grammatical as
(32a). However, the example in (33d) is judged ungrammatical.

A similar difference is to be found with respect to the
placement of the adverb *ever*. Compare (34) and (35).

(34)  
| a | I would hate it [ if I should *ever* find out that I was wrong] |
| b | I would hate it [ if I *ever* should find out that I was wrong] |
| c | I would hate it [ if *ever* I should find out that I was wrong] |

(35)  
| a | I would hate [to *ever* find out that I was wrong] |
| b | *I would hate [ever to find out that I was wrong] |

(Baltin 1995: exx. 35, 34)
The examples in (34) show that *ever may directly follow or precede the modal in $T^o$, or be placed in between the complementizer and the subject. This suggests that *ever may be adjoined at various levels, as there are the VP level in (34a), the TP level in (34b), and, assuming that the lexical subject is in SpecAgrSP, the AgrSP level in (34c). The example in (35) shows that *ever in infinitival control clauses can only occur in between to and the main verb, as in (35a). If PRO is in SpecTP or SpecAgrSP and to in $T^o$, we would expect that the example in (35b) is as grammatical as (34b,c), contrary to fact.

There are two ways to approach this apparent problem, one is to abandon the idea that PRO must check its Case in SpecTP and its underspecified $\phi$-features in SpecAgrSP; the other is to abandon the idea that infinitival to in these constructions is in the same position as the modal, i.e. $T^o$. Baltin (1995) argues for the first approach, claiming that PRO is licensed in SpecVP, while to is licensed in $T^o$. Our analysis above, however, requires the other approach, since we argued that PRO is assigned structural nominative Case, so that at least by LF, PRO must check its Case in SpecTP to satisfy the Visibility Condition. As PRO in languages like Icelandic and English also licenses subject-predicate agreement, we may also assume that PRO has abstract $\phi$-features, which must be checked. Thus, PRO cannot be syntactically licensed in SpecVP, because Case and $\phi$-features must be checked in the higher functional positions. Therefore, I will maintain the claim that PRO is licensed in SpecTP for nominative Case and must check its underspecified $\phi$-features in SpecAgrSP. This motivates an investigation of the possibility that infinitival to is not in $T^o$ at surface structure, but in some higher position.

Another interesting fact about infinitival to, also noted by Baltin (1995), is that its behavior in control constructions is different from its behavior in raising constructions. Consider the examples in (36) and (37).

(36) a *They tried [all to leave]
    b They seemed [all to leave]
    c I would prefer [for these people all to leave]
    d I believe these people [all to have left]

(37) a *I would hate [ever to find out that I was wrong]
    b Did he seem [ever to want to talk about it]?
    c I would hate for these people [ever to find out they were wrong]
I didn’t believe these people [ever to have actually lied]

These examples show that all and ever may not precede to in control complements, but they may precede to in raising-to-subject and -object constructions, and in a for-to infinitive. The fact that the constructions in (36b-d) and (37b-d) allow placement of all and ever to the left of to suggests that in these constructions, to is in the same position as the finite auxiliaries in (32) and (34), i.e. $T^0$. Therefore, I claim that infinitival to only raises in control clauses, not in raising-to-subject and raising-to-object (or ECM) constructions. I will assume that to in raising constructions remains in $T^0$, which is raised with the entire embedded AgrSP to the embedded SpecCP. This correctly predicts the difference in grammaticality judgements for raising and control constructions in (36) and (37).

If to in control infinitives is not in $T^0$, but in some higher functional head, there are two possible positions for to to move into, namely, Agr$S^o$ and $C^o$. Beukema & Den Dikken (B&D, 1989) argue, mainly on the basis of negative placement, that to moves into Agr$S^o$. I will, however, argue that to must move to $C^0$ in control constructions, because PRO must be in SpecAgrSP to check its underspecified $\phi$-features. If to is in Agr$S^o$ and PRO in SpecAgrSP, it is predicted incorrectly that (33d), (35b), (36a) and (37a) are grammatical, since all may form a constituent with the subject, while ever may adjoin between subject and Tense, or to the left of the subject, and if to is in Agr$S$, all and ever are incorrectly expected to precede to. If to is in $C^0$, however, it is correctly predicted that all and ever cannot precede to, since all and ever never precede a complementizer.

In many respects, infinitival to resembles modals and finite auxiliaries. This is illustrated by the existence of split infinitives, and the fact that to must be repeated in VP-deletion constructions. Consider the examples in (38) and (39).

(38) a  John decided that he would quickly wash his car
       b  John quickly washed his car, as he had decided he would

(39) a  John decided to quickly wash his car
       b  John quickly washed his car, as he had decided to

These examples show a similar behavior of the modal would and infinitival to. This is not surprising, since to does originate in $T^0$, where it remains in raising constructions, but from where it moves in control constructions. The examples in (32) - (35) have shown that
to in controlled infinitives occupies a higher position, because the FQ all and the adverb ever cannot precede to.

To find out whether this position is AgrS⁰ or C⁰, we must consider some more examples. A manner adverb like quickly may surface in different positions in finite clauses, as illustrated in (40).

(40) a John promised quickly that he would wash the car
    b John promised that, quickly, he would wash the car
    c John promised that he quickly would wash the car
    d John promised that he would quickly wash the car

The adverb in (40a) precedes the complementizer of the embedded clause, and, therefore, can only have scope over the matrix verb, not over the embedded verb. In (40b), the adverb is allowed to occur between the complementizer and the subject of the embedded clause, only when there is a clear comma intonation. In this case, quickly has scope over the embedded event. In (40c), the adverb appears to the left of the modal, and has embedded scope. In (40d) the adverb is in between the modal and the lexical verb and has embedded scope.

Consider next the equivalent control constructions in (41).

(41) a John promised quickly [to wash his car]
    b *John promised [quickly to wash his car]
    c John promised to quickly wash his car

The example in (41a) can only have matrix scope, which may suggest that to is in C⁰, rather than in AgrS⁰. This is reinforced by the fact that the interpretation of embedded scope in (41b) is ungrammatical. The grammaticality of the finite counterpart in (40c), with quickly intervening between the subject and the modal, shows that there is an adjunction position to the left of would. The fact that quickly can be extended into very quickly shows that the adjoined element is a full phrase, so that it must be adjoined to the left of a full XP, not an intermediate X-bar level. As the lexical subject must be in a specifier position to the left of the adverb, as in (40c), and the adverb is to the left of the modal, I conclude that in (40c) the adverb is adjoined to TP and the subject is in SpecAgrSP. If thus to were in AgrS⁰, and PRO in AgrSP, we expect that the adverb in (41a) can also have embedded scope, since it may be left-adjoined to AgrSP, surfacing to the right of an empty C⁰, parallel to (40b). As embedded scope in (41b) is ungrammatical, however, this supports the hypothesis that to has moved to C⁰.

If to moves to C⁰ in controlled clauses, but not in subject-raising
or for-to constructions, adverbs of manner should not be able to have scope over the higher clause when they occur to the left of to in raising constructions. This is indeed borne out, as illustrated in (42)-(44).

(42)  
   a  John, quickly seemed [\(t_i\) to have left]
   b  John, seemed [quickly \(t_i\) to have left]
   c  *John, seemed quickly [\(t_i\) to have left]

(43)  
   a  John quickly believed Mary; [\(t_i\) to have washed the car]
   b  *John believed quickly Mary; [\(t_i\) to have washed the car]
   c  *John believed Mary; quickly [\(t_i\) to have washed the car]
   d  John believed Mary; [quickly \(t_i\) to have washed the car]

(44)  
   a  John quickly wanted [for Mary to wash the car]
   b  *John wanted quickly [for Mary to wash the car]
   c  ?John wanted [for Mary quickly to wash the car]

The usual position for manner adverbs is to the left of the lexical verb, so that the examples in (42a), (43a) and (44a) are expected to be grammatical with matrix scope. The example in (42b) shows that the adverb has embedded scope when it occurs in between the matrix verb and the embedded to. The example in (42c) shows that matrix scope for the adverb in this position is not possible. The example in (43b) shows that the adverb may not occur in between the matrix verb and the raised object, whereas the examples in (43c,d) show that when the adjunct appears between the raised object and infinitival to only an embedded interpretation is possible. Similarly, the examples in (44) show that the adjunct cannot occur between the matrix verb and the embedded for-complementizer in (44b), whereas it can only have embedded scope in (44c).

These data support the idea that infinitival to in control constructions is in a higher position than in raising and for-to constructions. In the latter constructions to does not move into \(C^0\), but must be either in \(T^0\) or in Agr\(S^0\). This is expected under the analysis we adopted from Rooryck (1997) where the entire AgrSP of raising infinitives moves through SpecCP.

Next I will argue that the analysis of to in \(C^0\) for control constructions is compatible with the negation facts of control clauses. Consider the examples in (45).
(45) a  John promised not [that he would wash his car], but that he might wash it
  b  John promised [that not he would wash his car], but his sister
  c  *John promised [that he not would wash his car]
  d  John promised [that he would not wash his car], but hoover it/but fix his bike/but (wash) his bike

The sentence in (45a) is only grammatical with an emphatic contrast in the second conjunct. The emphatic contrast allows for constituent negation of the CP. Without emphatic contrast, English negation requires do-support. In (45b), we have an instance of constituent negation of the subject. (45c) shows that negation cannot appear between the subject and the modal, while (45d) shows that it can occur between the modal and the lexical verb. This suggests that there may be an independent NegP in between the lexical verb and the modal (cf. Pollock 1989; Belletti 1988).

When considering the infinitival counterparts of (45), we see an apparently different pattern.

(46) a  John promised [not to wash his car], but to ...
  b  John promised [to not wash his car], but hoover it, but (fix) his bike

The grammaticality of (46b) is as expected, since (45d) shows that not can occur between the modal and the lexical verb, so that whether to is in Agr$S^0$ or $C^0$, not is expected to occur in between to and the infinitive. The grammaticality in (46a), on the other hand, is not immediately clear. If we assume that to is in $C^0$, this is problematic for (45a), since the example in (46a) is not restricted to an emphatic contrastive interpretation. However, if we assume that to in controlled clauses is in Agr$S^0$, this is problematic for (45c), since not cannot intervene between the subject and the modal, in spite of the fact that the distribution of quickly showed that the lexical subject and the modal are in two different projections.

On the basis of the ungrammaticality of sentences like (45a), and the fact that raising infinitives also allow the not-to word order, as in (47), B&dD (1989) claim that to cannot be in $C^0$, because not cannot be left adjoined to a complementizer.

(47) a  John does not seem to be happy
  b  John seems not to be very happy
B&dD (1989) also argue that, as the word order not-to in (46a) and (47b) is more basic than that to-not in (46b), the infinitive marker must be in its base-generated position in $T^0$ in sentences like (46a), while it has moved to Agr$S^0$ in (46b). The problem for this approach, however, is that the basic word order of modals and negation is precisely the 'exceptional' word order for infinitival to and negation, so that modals must also be assumed to move to Agr$S^0$. If to moves to Agr$S^0$ only in control clauses, we would expect that only control clauses allow split-infinitives and to-not word orders. Compare the sentences in (48).

(48) a John promised [to quickly wash the car]
    b John promised [to not wash the car]
    c John expected Mary [to quickly wash the car]
    d John expected Mary [to not wash the car at all]

The examples in (48c,d), however, show that raising-to-object infinitives allow split-infinitives and a to-not word order as well as the controlled clauses, so that we must conclude that movement to Agr$S^0$ does not distinguish between to in a raising or a control construction. If to in both types of constructions can be in Agr$S^0$, we would expect that the elements all and ever can also precede to in controlled clauses, since both these elements may occur to the left of a modal in Agr$S^0$. The examples in (32) - (38), however, have crucially shown that this prediction is not borne out.

Therefore, I propose that to in control infinitives always moves to C$^0$, but that negation is free to move along or stay in a lower position. In English, negation tends to cliticize to the finite auxiliary or modal in Agr$S^0$. In spite of the fact that a construction with cliticized negation is a derived construction, it is more natural than non-cliticized negation, as in (45d). I will assume that finite modals and auxiliaries are base-generated in $T^0$ and adjoin to Neg$^0$ on their way to Agr$S^0$. This always results in the (cliticized) word order auxiliary/modal-not. In order to account for the fact that both orders to-not and not-to are grammatical word orders of infinitival clauses, I will assume that infinitival clauses do not contain a NegP, but allow adjunction of not to any XP, inducing constituent negation at various levels. Thus, I conclude that to in control clauses obligatorily moves to C$^0$, which explains why FQs like all and averbials like ever cannot occur to the left of to in these constructions, since these
cannot be left-adjointed to lexical complementizers like *that*, either.\footnote{The position of Dutch *te* in infinitival clauses is an entirely different matter, since Dutch has an overt complementizer *om* which appears in $C^0$ in control clauses. Dutch *te* cliticizes to the infinitival verb and may be seen as an infinitival Tense marker. As its surface position and nature are not directly relevant to the licensing of PRO, I will not discuss this element here. For a brief discussion of infinitival *te* see Zwart (1993: 98-105).}

If *to* is thus in $C^0$ in controlled infinitival clauses, it seems to pattern with the Belfast English (BE), Dutch and French examples, repeated in (49).

(49) a I tried [for PRO to get them] \hspace{1cm} (BE, Henry 1992)
b Ik probeerde [om PRO ze te krijgen] \hspace{1cm} (Dutch)
    I tried \hspace{1cm} [for PRO them to get]
c Jean essaie [de PRO comprendre] \hspace{1cm} (French, Kayne 1991)
    Jean tries \hspace{1cm} for PRO to-understand]

As mentioned in section 3.2, however, these sentences pose a problem for the licensing of PRO, since the prepositional counterpart of each of these complementizers normally assigns structural accusative Case to its complement. As PRO is assigned nominative Case by the infinitival $T^0$, however, I will assume that it cannot also check the accusative Case properties of the prepositional complementizer. Instead, I propose that the prepositional complementizer in these constructions functions as an inherent Case-marker, making the entire controlled clause syntactically visible as a selected argument. Thus, raising of *to* to $C^0$ allows the infinitival marker to function as an inherent Case-marker for a controlled complement or subject clause.

If selected control infinitives are thus inherently Case-marked, however, it must be explained why raising-to-subject and object position is required for other subject and complement clauses. From the above argument that infinitival *to* in raising constructions is not in $C^0$, I will conclude that the infinitival marker *to* can only function as an inherent Case-marker when it is in $C^0$, but not when it is in a lower functional position.

Following Rooryck’s (1997) analysis of raising versus control, which we adopted the previous chapter, I will assume that the difference in lexical properties of the higher verb, and therefore, in feature specification of the infinitival CP determines whether a construction is a raising or a control construction. Both types of constructions must be Case-marked, because they must both be identified as a selected argument, but each type of construction has a
different mechanism of Case-checking. Thus, a [+Focus] complement clause lacks prepositional features in C⁰, but instead triggers overt raising of the embedded AgrSP to the embedded SpecCP, so that the embedded subject is triggered to move into the higher clause and check the available structural Case in subject or object position. A [+Control] C⁰, on the other hand, either contains a prepositional complementizer (for (BE), to (StE), om (Du), de (Fr)) by which the argument clause is inherently Case-marked or, if there is no prepositional complementizer (as in controlled SCs), the entire clause must check structural accusative Case at LF.

3.5.5. Conclusions with respect to the distribution of PRO in infinitival clauses

In the above discussion we argued that the PRO-theorem does not adequately account for the distribution of PRO, because it does not explain how PRO is syntactically licensed. Instead, I argued that PRO is licensed by infinitival Tense and underspecified AgrS⁰, so that PRO can be made visible to the syntax by checking nominative Case in the specifier of T⁰ and it must check its underspecified φ-features against the local AgrS⁰. The structural Case checking of PRO may be considered the formal licensing mechanism for PRO, since empty pronouns are formally licensed by structural case (cf. Jaeggli & Safir 1989).

It was furthermore argued that the embedded PRO subject in infinitival complements is protected from moving to a matrix licensing position for lexically realized DPs by a CP-barrier. It was argued on the basis of the respective position of FQs like all and adverbs like ever, on the one hand, and infinitival to, on the other, that the C⁰ position in controlled infinitives is filled by the infinitive marker to, which has moved from T⁰ via AgrS⁰ to C⁰. It was proposed that prepositional complementizers in C⁰ may function as inherent Case-markers for the selected controlled infinitive. The trigger for movement is presumably a lexical feature of the higher [+control] verb.

With respect to the precise position of PRO in adjunct clauses, we merely stated in the previous chapter that adjuncts are not L-selected, so that they qualify as independent binding domains for PRO. Here I want to argue that infinitival adjuncts are also CPs. Consider the examples in (50)-(54).
(50) a John ran with his sister to the station [\text{pp} in order [\text{cp for her/Them to be in time for the train}]]
b John ran with his sister to the station [\text{cp for her/Them to be in time for the train}]
c John ran with his sister to the station [\text{pp (in order) [cp [\text{pro to be in time for the train}]]}]

In (50c) we see that a controlled clause is optionally embedded in a PP. In (50b,c) we see that the purpose clause allows a lexical subject Case-marked by \text{for} in \text{C}^0, so that we may conclude that the control clause in (50c) is also a CP. Consider next the examples in (51).

(51) a [After [\text{pro having finished his homework}] \text{John went to bed}]
b [Before [\text{pro going to school}] \text{Mary sorted out her books}]

The temporal adjuncts contain controlled gerunds as complements to a preposition. As in the case of infinitival control clauses with a prepositional complementizer, we may analyze these prepositions in (51) as prepositional complementizers, so that the gerundive clauses are inherently Case-marked by the preposition by which they are selected. If the prepositional complementizer heads the CP of which PRO is the subject, PRO is sufficiently Case-marked for structural nominative Case by the gerundive Tense. Alternatively, it may be argued that the preposition selects a CP complement with an empty \text{C}^0.\footnote{Cf. Aarts 1992 for alternative analyses of prepositions as \text{P}^0, \text{C}^0 or \text{I}-elements in Small Clause complements.} If we adopt this analysis, we would expect that the preposition allows \text{wh}-question complements. Consider, however, the examples in (52).

(52) a *After [\text{what, having finished t} \text{j}], \text{John went to bed}
b *Before [\text{where, going t} \text{j}], \text{Mary sorted out her books}
c *[\text{What, (after) having finished t} \text{j}], \text{John went to bed}
d *[\text{Where, (before) going t} \text{j}], \text{Mary sorted out her books}

These examples show that English does not allow a \text{wh}-operator in the complement clause to the preposition, so that we may conclude that the complement clause to the preposition is an IP, and the preposition itself functions as a prepositional complementizer. The fact that the temporal adjunct does not allow a \text{wh}-operator in SpecCP, as illustrated in (52c,d), however, suggests that there may be
some other feature in this position. The CP-analysis for the temporal gerundive adjunct is supported by the finite equivalents in (53).

(53) a After he$_{ij}$ had finished his homework, John, went to bed
b *After [what$_k$ he$_{ij}$ had finished $t_k$], John, went to bed
c *[What$_k$ after [he$_{ij}$ had finished $t_k$], John, went to bed

These examples show that the equivalent finite clauses with a lexical pronominal subject do not allow a $wh$-operator following the preposition, nor preceding it. Therefore, I will conclude that the preposition is in $C^0$ position of the gerundive temporal adjunct and functions as prepositional complementizer, unable to structurally Case-mark the embedded subject.\(^7\) I suggest that the complementizer function of a preposition like before or after is related to the fact that these prepositions have temporal features, which must be checked in $C^0$ (cf. Raposo 1987). As $wh$-operators are not allowed in SpecCP, and the default interpretation of the lexical pronominal subject in (53) is parallel to the control relation in (52), I propose that the embedded SpecCP contains an empty operator to which the lexical pronoun may, but PRO must be bound, so that PRO is obligatorily controlled by the matrix subject via the operator.

For infinitival relatives the CP-analysis is motivated by equivalent finite relatives. Consider the examples in (54).

(54) a We found someone [$_{CP}$who$_i$ [$t_i$ could fix the sink]]
b This is an album [$_{CP}$which$_i$ [one can stick pictures in $e_i$]]
c We found someone [$_{CP}$Op$_i$ [PRO$_i$ to fix the sink]]
d This is an album [$_{CP}$Op$_i$ [PRO to stick pictures in $e_i$]]
e *How$_i$ did we find someone [$_{CP}$Op$_i$ [PRO$_i$ to fix the sink $t_i$]]
f *How$_i$ is this an album [$_{CP}$Op$_i$ [PRO to stick pictures in $e_i$ $t_i$]]

---

\(^7\)It was brought to my attention by P. Coopmans (p.c.) that there are also temporal adjuncts which may be followed by lexical subjects in gerundive clauses, as illustrated by examples from Johnson (1988) in (i) and (ii).

i Liz left without John telling a story
ii Sam left despite John saying that he wouldn’t

According to Johnson, the prepositions in constructions like (51) above are inside the gerundive CP-clause, while the prepositions in (i) and (ii) are outside the gerundive IP-clause. This is compatible with our analysis here, where the preposition in (51) has a complementizer function. The preposition in (i) and (ii) may remain a genuine preposition with Case-assigning properties that can reach the embedded subject, as in the case of ECM-verbs.
ON THE DISTRIBUTION AND STRUCTURAL LICENSING OF PRO

The examples in (54e,f) support the analysis that (54c,d) is analogous to the analysis of (54a,b), since long-w movement of how is blocked by the empty operator in the embedded SpecCP.

The examples in (50) to (54) have shown that infinitival and gerundive adjuncts should also be analyzed as CPs with a nominative PRO in SpecIP. In the next section we will extend this analysis of nominative PRO to controlled SC-complements.

3.6. PRO licensing in Small Clause predicates

3.6.1. Introduction

In this section it is argued that PRO in controlled verbal and non-verbal Small Clauses (SCs) is structurally licensed in the same way as PRO in infinitival clauses, namely by a [−finite] Tense head.8 I adopt Stowell’s (1983) idea that all syntactic categories have a subject position. As mentioned in chapter 1, I follow Chierchia (1984), Déchaïne (1993) and Déchaïne, Hoekstra & Rooryck (1994), who argue that lexical projections cannot simply predicate of a subject, but that some ‘predication operator’ must be present to license the relation between subject and predicate. We have seen that Tense is the functional head which can be argued to be a predication operator, since it formally licenses subjects in the syntax by assigning structural nominative Case to its specifier position. If such a predication operator is not present, a lexical projection cannot function as a predicate, but will function as an argument (DP or PP), or as an attributive modifier (AP). The different functions of lexical projections are illustrated in (55)-(57).

(55) a John gave a book [PP to Mary]
   b John wanted Mary [TP t [PP off his ship]]
   c John came home [TP PRO [PP in a new car]]

(56) a John saw [DP a man]
   b I consider John [TP t [DP a wiser man]]
   c John came home [TP PRO [DP a wiser man]]

8 It is tacitly assumed that Small Clauses in English and Dutch have underspecified subject agreement against which PRO checks its own underspecified φ-features. As structural Case is the relevant licensing feature related to syntactic visibility of arguments, in our discussion we will concentrate on Tense, rather than Agr$.$
(57) a  This is a [AP nice [NP house]]
b  I thought John [TP t [AP unhappy]]
c  John came home [TP PRO [AP totally exhausted]]

In this section I argue that non-finite and verbless Small Clauses contain (abstract) Tense as a predication operator, which licenses a subject by nominative Case assignment. I will refer to this third type of Tense as ‘dependent’ tense, because SCs can only be temporally modified within the scope of the matrix Tense, if at all. Consider the examples in (58).

(58) a  *Yesterday, John came home [TP PRO [PP in a new car] today/in the afternoon]
b  *Yesterday, John came home [TP PRO [DP a wiser man] today/later that day]
c  *Last night, John came home [TP PRO [AP totally exhausted] this morning/later that night]
d  Last week, I saw John [TP t [VP leave] on Sunday night/*yesterday]
e  Yesterday, I saw John [TP t [VP leaving] late in the afternoon/*this morning]
f  Yesterday, John wanted [CP [TP PRO to [VP leave] early next week]]

The examples in (58) show that SC adjuncts cannot be temporally modified at all, as in (58a-c), and that the temporal adverb of the selected SCs must be within the scope of the temporal specification of the matrix verb (58d,e). The construction in (58f), however, shows that independent temporal adjuncts are licensed in both the controlled infinitival clause and the matrix clause. The reason for this restriction on temporal modification in SCs may be sought in the descriptive nature of the SC adjuncts and complements. The absence of temporal morphology may be taken to reflect the temporally dependent nature of these clauses in the syntax.

The finite and infinitival complement constructions discussed so far all involve a verb and a Tense morpheme, so that a predication relation can be established. We have argued that Tense, whether finite or infinitival, assigns structural nominative Case to its specifier position, and that this is sufficient to license an empty argument syntactically, but insufficient for this argument to be lexically realized in languages like English and Dutch. In some languages, however, like Modern Hebrew (MH) and Modern Standard Arabic (MSA), nominative Case is sufficient to license lexical subjects.
In subsection 3.6.2 it is argued on the basis of MH and MSA data, that SCs in languages like English and Dutch also have (abstract) Tense, which assigns structural nominative Case to its specifier position, so that a subject-predicate relation can be licensed. In the absence of [+specified] \( \phi \)-feature agreement, however, lexical nominative subjects are not licensed. In subsection 3.6.3 it is argued that, for reasons of uniform complementation, SC raising complements may be syntactically represented as CPs, undergoing movement of the entire AgrSP to SpecCP along the lines of Rooryck (1997). It is also argued, however, that controlled SC complements and adjuncts must be analyzed as CPs, in order to protect the PRO subject of gerundive complements, and to supply a syntactic analysis of obligatory control via operator-binding in the embedded SpecCP.

### 3.6.2. Motivation from Hebrew and Standard Arabic for TP in Small Clauses

In this section it is argued that, Modern Standard Arabic (MSA) and Modern Hebrew (MH) matrix clauses contain abstract Tense, because they may have lexical nominative subjects. By analogy, it will be assumed that languages like English and Dutch also have an abstract predicative operator in \( T^o \), which heads the embedded SCs, licensing the subject-predicate relation within these clauses. Chierchia (1984) proposes that such a predication operator could be Tense or COMP, which may be lexical, but can also remain abstract. Déchaine (1993) shows that not only in finite, but also in infinitival complements English needs a lexically realized Tense projection, usually instantiated by a finite verb or an auxiliary; but in case of non-verbal predicates, English often inserts some form of the copula be. Other languages (e.g. Modern Standard Arabic and Modern Hebrew) may do without a lexical TP in case of a non-verbal predicate, so that in these cases abstract Tense may be assumed, since the take lexical subjects, which are assigned nominative case.

(59) a Zayd-un sadia-ii
    -Nom friend-my
    ‘Zayd is my friend’

b Zayd-un fit d-aari
    -Nom in the-house.Gen
    ‘Zayd is in the house’
c Zayd-un mariid-un
   -Nom sick-Nom
   ‘Zayd is sick’

(60) a Dani more ba-universita
    teacher in.the-university
    ‘Dani is a teacher in the university’

b Dani al ha-gag
    on the-roof
    ‘Dani is on the roof’

c Dani nexmad ad meod
    nice very
    ‘Dani is very nice’

(Déchaîne 1993: 294)

In all these examples, the English translation needs a lexically realized tensed form of be, but MSA and MH only have abstract Tense. Although these examples do not always show agreement features on the predicate, the English translation suggests that MH and MSA contain abstract subject agreement. This idea is supported by the fact that when a sentence like (60c) is negated, the negation, which has the status of a negative copula (cf. Déchaîne 1993: 424), agrees (singular, masculine) with the subject.

(61) a Dani ’eyn-o nexmad
    Neg-sm nice.sm
    ‘Dani [is] not nice’

b *Dani ’eyn nexmad
    Neg nice.sm
    ‘Dani [is] not nice’

Déchaîne (1993: exx. 175/6b)

The fact that non-agreeing negation is ungrammatical suggests that SCs also contain a projection to check the φ-features if the subject. The claim that SCs contain not only a TP, but also an AgrSP on top of their lexical projection raises the question whether it is not possible to analyze SCs as full CPs, since this would make complementation more uniform, and may prove to be useful for analyzing the difference between raising and control constructions of SC-complements. In the next section it is indeed argued that SC are in fact to be represented as CPs, which only seem to be reduced, because Tense and AgrS are never lexically realized.
3.6.3. The syntactic structure of Small Clauses

If we consider the examples in (55) to (57) again, it turns out that the difference between the raising and control constructions correlates with their respective status of argument and adjunct clauses. If the argument versus adjunct status of a SC always correlates with its nature as raising or control clause, it may seem sufficient to conclude that PRO is formally licensed in SpecTP, because the adjunct clause is an independent binding domain by virtue of not being L-selected, whereas a lexical accusative subject is licensed, when the complement TP is transparent for A-movement to a higher Case-position. However, as PRO must also be licensed for content, and there are no morphological content-licensers in SC-adjuncts, a CP-status of SCs is motivated by the need for PRO to be identified for content. If we assume adjunct SCs to be full CPs, PRO can be content-licensed via operator-binding, which leads to obligatory control.

The motivation for the CP status of a controlled complement SC is to protect the embedded subject of a SC-complement from moving to a higher Case position. The only SC-complements with control properties, however, are gerundive clauses, since all non-verbal predicates require some form of be, have or some other verb (cf. Déchaine 1993).

(62) a John remembered [PRO bringing the wine]  
    b John tried [PRO *(to be/being) good]  
    c John wanted [PRO *(to be) at home]  
    d John wanted [PRO *(to have) a new car]

These examples show that monotransitive subject control verbs do not allow non-verbal SCs, but always require a verbal element. There is, however, one more type of non-verbal SC which we have not yet discussed, namely SCs with predicative as. Consider the examples in (63).

(63) a I regarded them; [t; as clowns]  
    b I described him; [PRO; as a fool]  
    c John, behaved [PRO; as an idiot]

Aarts (1992: 112ff.) argues that the SC in (63a) is a complement clause which allows its subject to raise to the matrix object position, the SC in (63b) is is an adjunct to the object DP. He motivates the analyses by showing that the object in (63a) can be expletive it or
there, whereas it cannot be an expletive in (63b). This is illustrated in the examples in (64).³

(64) a I regarded it as foggy enough to cover our retreat
    b I regarded there as too many people present
    c *I described there as being a riot
    d *I described it as raining all day

Although I am not convinced that the examples in (64a,b) are grammatical, the criteria of entailments suggest that there is indeed a difference in thematic role assignment properties of the higher verbs. Consider (65).

(65) a I regarded them as clowns
    b *I regarded them
    c I described him as a fool
    d I described him

Whereas the sentence in (65b) is not an entailment of the sentence in (65a), the sentence in (65d) is an entailment of the sentence in (65c). This leads to the conclusion that regard does not assign a θ-role to its object position, while describe does.¹⁰ Thus, the SC in (63a) is a raising-to-object complement and the the SC in (63b) is a controlled adjunct. If we apply the same tests to the example in (63c), we must conclude that the SC in this case is also a controlled adjunct.

(66) a *It behaved [John as a fool]
    b *There behaved [someone as a fool]
    c #John behaved (well)

These examples in (66a,b) show that the subject of behave is not raised, but is assigned a θ-role by the verb. The example in (66c) shows that although it is not an entailment of the clause in (63), the SC functions as a modifying adverbial of manner. From these examples we may conclude that the predicative as-constructions also distinguish between raising complements and controlled adjuncts, so that the syntactic licensing of PRO does not seem to require a CP-barrier. For reasons of content-identification for PRO, however, it

---

³Example (64a) is from Postal (1974), cited in Aarts (1992), and the examples (64b-d) are from Aarts (1992: 112, 117).

¹⁰According to Aarts (1992: 118) examples like I regarded him with envy are not counterexamples, because these involve a semantically different verb.
may be argued that the controlled adjuncts in (63b,c) are full CPs, so that PRO can be bound to an empty operator in the embedded SpecCP, which induces obligatory control from the higher argument. With respect to the raising construction in (63a), it may be argued for reasons of uniform complementation, that this SC-complement is also analyzed as a full CP. In this case, I will adopt the analysis as proposed by Rooryck (1997) for raising infinitives, namely, that the embedded AgrSP raises to SpecCP position, from where the subject can undergo A-motion to a matrix Case position. Extending this analysis of raising infinitives to SCs can be semantically motivated, because a verb like regard seems to belong to the same semantic class as consider or believe. From this I will conclude that SC-complements and adjuncts alike are full CPs, with this difference that the AgrSP of the raising clauses raises to SpecCP to license A-motion of the embedded subject, while the SpecCP of the controlled clause contains an empty operator, which induces obligatory control for PRO.

The presence of the CP-level may thus be required for controlled SC-adjuncts for interpretational reasons. In chapter 2, we saw that infinitival relatives must contain a CP-level, because they contain a variable which must be bound to an empty operator in SpecCP. If the empty subject of infinitival relatives is thus operator-bound, it is obligatorily linked to the higher argument. I propose that this analysis likewise applies to controlled SC-adjuncts, since these are syntactically licensed as empty pronouns by being assigned nominative Case by abstract Tense, but they cannot be content-identified, not even minimally, since there is no morphology which can minimally identify PRO in these cases. If the obligatory control of PRO in SCs is to be syntactically represented, I propose that this may syntactically be represented by an operator-variable

---

11 Although Coopmans & Stevenson (1991) present an interesting alternative analysis for the CP-status of ECM-infinitives and SCs, I cannot adopt this analysis here, because it clashes with the analysis of Rooryck (1997). In the latter analysis SpecCP is crucially the locus for movement of the entire embedded AgrSP, while in the former analysis the embedded SpecCP must be available as an intermediate landing-site for long wh-movement to ensure antecedent government of the lower trace. As I have tried to dispense with the notion of government in this study and a selected SC never shows evidence of overt wh-elements in SpecCP, I will continue to assume a CP-analysis of complement clauses along the lines of Rooryck (1997).

12 The predicative head as is a potential minimally content-identifying morpheme, but as the control relation is also compelling in these cases, I will assume the same representation for these clauses as for the other SC-adjuncts.
relation, as illustrated in (67).

(67) a  John; came home [CP Op₁ [AgrS/TP PRO₁ [ [PP in a new car]]]]
    b  John; came home [CP Op₁ [AgrS/TP PRO₁ [ [DP a wiser man]]]]
    c  John; came home [CP Op₁ [AgrS/TP PRO₁ [ [AP totally exhausted]]]]
    d  I described him; [CP Op₁ [AgrS/TP PRO₁ [ as a fool]]]
    e  John; behaved [CP Op₁ [AgrS/TP PRO₁ [ as an idiot]]]

With respect to the status of as, I assume that in raising constructions as is in T⁰ (cf. Aarts 1992), where it may function as a Tense-operator licensing the subject-predicate relation in the embedded clause. In controlled SCs, as may either be in T⁰ or in C⁰. If the position of FQs like all and preverbs like ever is also relevant for the position of the predicator in adjunct clauses, the examples in (68) suggest that as is in T⁰, rather than C⁰.

(68) a  They behaved [CP Op₁ [AgrS/TP PRO₁ [ all as idiots]]]
    b  John described them ironically [CP Op₁ [AgrS/TP PRO₁ [ all as idiots]]]

Returning now to the status of gerundive complement clauses. We have seen that gerundive complements may be raising or controlled complements, as in (69).

(69) a  John; remembered [CP [TP PRO₁ [ bringing the wine]]]
    b  John; remembered him;[
        [CP [TP t₁ [ bringing the wine];] C⁰ [AgrSP t_k ]]
    c  John; remembered himself;[
        [CP [TP t₁ [ bringing the wine];] C⁰ [AgrSP t_j ]]

In spite of the different constructions in (69), I will argue that all three clauses in (69) are CPs. A CP-analysis along the lines of Rooryck (1997) for the gerundive raising clause can be motivated by a semantic difference between the constructions in (69a) on the one hand and (69b,c) on the other, with respect to Focus features. According to Rooryck (1997) controlled clauses do not contain a [+Focus] feature in C⁰, whereas raising clauses do. This seems to be compatible with the two variants in (69), where the embedded subject can only receive a [+Focus] interpretation when realized as a raised accusative subject. Coreference of PRO with the matrix subject cannot receive special focus in the control variant in (69a), but does receive special focus in the raising variant in (69c).
As the PRO subject in (69a) must be protected from raising to
the accusative Case position, the presence of the CP is required to
function as a barrier against possible raising of the embedded subject.
As the embedded subject in (69b,c) must be licensed for A-movement
and the [+Focus] feature in C₀ must be checked, the AgrSP moves
into CP, licensing A-movement for the embedded subject. Thus,
both types of complements can be analyzed as CP constructions.

For gerundive clauses in temporal adjuncts, I argued in section
3.5.5 that these are CPs headed by a prepositional complementizer.¹³
Although the gerundive complements do not show evidence of a
lexical complementizer, the obligatory control relations indicate that
the SpecCP may host an empty operator which obligatorily links the
PRO subject to the matrix controller. As the interpretation of PRO
is compelling for both temporal adjuncts and gerundive complement
clauses the relations of (51) and (69a) may be represented as in (70).

(70) a  [CP Op₁ After [ₜp PRO₁ having finished his homework]]
        John₁ went to bed

b  [CP Op₁ Before [ₜp PRO₁ going to school]] Mary₁ sorted out
    her books

c  John₁ remembered [CP Op₁ [ₜp PRO₁ bringing the wine]]

If obligatory control in these cases is indeed mediated by operator-
binding, this explains why there is no position for a wh-operator,
since SpecCP is filled by the empty operator.

In this section I have argued that, both for reasons of content-
identification and for reasons of uniform complementation, all SCs
are to be analyzed as CPs. The analysis of raising SC-complements as
CPs can be motivated by the semantic requirement for a [+Focus]
interpretation, which is syntactically represented by checking a
[+Focus] feature in SpecCP, licensing A-movement of the embedded
subject. The analysis of control clauses as CPs is motivated by the
need to protect PRO in complement SCs and by the need for

¹³The idea that gerundive SCs contain abstract Tense which assigns
nominative Case to the subject position is supported by the fact that gerundive
adjuncts sometimes license a nominative subject, as in (i).

i  Elaine’s winking at Roddy was fruitless, he being a confirmed bachelor
    (Reoland 1983: ex. 1a)

The nominative subject in the gerundive adjunct clause may be seen as an
exceptional lexical realization of a structurally licensed nominative position, since
lexical subjects in English usually require finite Tense. I do not think this is an
instance of default or lexical Case, since default Case in English is accusative and
lexical Case is never nominative.
content-identification of PRO in adjunct SCs. Structurally, PRO in complement and adjuncts clauses is licensed by being in an independent binding domain, where it is assigned structural nominative Case by the predicative head $T^c$. For its content-identification, however, PRO is obligatorily controlled by an argument in the higher clause. I proposed that the requirement of content-identification for PRO in SCs is syntactically reflected by operator-binding of PRO to an empty operator in the embedded SpecCP, from where it is linked to a argument of the next higher clause. Thus the CP-status of a controlled SC-adjunct can be motivated by the requirement of content-identification of PRO.

3.7. Conclusions

In this chapter I have shown that the traditional GB-approach to the distribution of PRO as ungoverned element is problematic for the syntactic licensing of the empty argument. In section 3.3 and 3.4 it was shown that the Barriers and KoL analyses do not provide a solution for this problem, because they retain the PRO-theorem at least with respect to government from the outside (cf. also Kayne 1991). As syntactic Visibility for argument chains is achieved by structural Case assignment, and Case assignment in these approaches works under government, PRO cannot be syntactically visible in the traditional approaches, unless by stipulation.

Therefore, we proposed in section 3.5 that PRO is structurally licensed by Tense, which assigns nominative Case to the subject position in its specifier and that PRO is content-licensed minimally by morphology and more specifically by control. It was furthermore argued that the complementary distribution of PRO and lexically realized nominative DPs is due to the underspecification of its $\phi$-features. Thus we concluded that structural nominative Case alone is sufficient to make the argument chains of subjects syntactically visible, but that it is not always sufficient for the lexical realization of nominative DPs, depending on language-specific requirements. We have argued that the licensing features for lexically realized nominative DPs are [+finite] Tense and/or [+specified] agreement. These conclusions were formulated in the rules in (24)-(26), repeated here.

(71) Rule of structural nominative Case assignment

[+finite] Tense assigns nominative Case to its specifier in a local Spec-Head relation
(72) **Structural licensing rule for PRO**

PRO is syntactically licensed by checking

a. nominative Case in [-finite] SpecTP, and

b. [-specified] $\phi$-features in SpecAgrSP

(73) **Licensing rule for lexical nominative DPs**

A lexical nominative DP is licensed by checking

a. [+finite] Tense in SpecTP and/or

b. [+specified] $\phi$-features (i.e. person and number) in AgrSP

In section 3.6, I argued that the licensing of PRO by non-finite Tense and underspecified AgrS also extends to controlled Small Clause adjuncts and complements. It is furthermore argued that both controlled SCs and raising SCs can uniformly be syntactically represented as CPs.

The licensing rules for PRO are compatible with the hypothesis that PRO is a pronoun and with the definitions of locality domain and content-licensing, as proposed in chapter 2.

(74) **Locality domain for PRO**

A is the locality domain for PRO if A is the minimal maximal projection containing PRO and the Complete Functional Complex of the head of A.

(75) **Minimal content-licensing of PRO**

PRO is minimally content-licensed by non-finite morphology with underspecified $\phi$-features.

(76) **Referential content-licensing of PRO**

PRO is licensed for referential content by control from a higher argument.

Finally, the analysis of PRO as an empty pronoun avoids the three problems evoked by the analysis of PRO as an ungoverned pronominal anaphor. As Tense assigns nominative Case, the thematic role of PRO is automatically visible to the syntax (i.e. formal licensing); as the embedded clause contains the minimal CFC within which the grammatical functions of PRO and its co-arguments are fully syntactically realized, this can be defined as the local domain in which PRO may not be bound; and as PRO is pronominal, both its being linked to an argument in the matrix clause, and its being independently interpreted in other instances is expected.
4 The Syntactic Licensing of External Argument PRO

4.1. Introduction

This chapter is a comparative case study of the licensing of empty subjects in te- and to-less (i.e. bare) infinitival complements to the permissive and causative verb laten in Dutch and let/have in English. We mainly concentrate on Dutch and English constructions like those in (1), but include examples from other languages, such as French, Italian and Swedish, when relevant.

(1) Jan liet (Marie) de auto wassen
    Jan let (Marie Acc) the car wash-INF
    'Jan let/had *(Marie) wash the car'

These examples show, that Dutch may optionally leave out the accusative DP, while English cannot. The traditional analysis of constructions like (1) with a lexical accusative DP is that they are accusativus cum infinitivo (Acl) constructions. By this analysis, the embedded subject is assigned structural accusative Case by exceptional case marking (ECM) under government from the matrix verb, or by raising to the object position of the matrix clause.

Constructions like those in (1) without a lexical accusative DP have been analyzed as so-called Passive Infinitives (PI) (cf. Bennis & Hoekstra 1989b; Coopmans 1985; Vanden Wyngaerd 1990, 1994), or as complex verbs (cf. Kayne 1975; Zubizarreta 1985; Coopmans and Everaert 1988; Guasti 1993; Haider 1997). The PI-analysis is motivated by the existence of constructions like (2a), where the embedded external argument appears to be realized as a passive-like door-phrase. The complex verb analysis is motivated by the existence of constructions like (2b), where a lexically realized PP is licensed, which appears to function as a Goal argument.
(2) a  Jan liet de auto wassen (door Marie)
   Jan let the car wash--INF (by Marie)
   'Jan had the car washed (by Marie)'
b  Jan liet de auto zien (aan Marie)
   Jan let the car see--INF (to Marie)
   'Jan showed the car (to Marie)'

In this chapter, however, I argue that Dutch laten-constructions of the type in (1) and (2) are all variants of a ditransitive construction involving a controlled infinitival complement clause and an optionally realized (in)direct or prepositional object. When lexically realized, the latter is the controller of the embedded PRO subject.

In section 4.2, I show that laten semantically behaves as a lexical verb with two different argument structures. One occurrence of laten is that of a monotransitive verb, and the other occurrence is that of a ditransitive verb. In section 4.3 I extend this distinction between monotransitive and ditransitive laten to constructions with infinitival complements. I argue that all occurrences of monotransitive laten with infinitival complements are to be analyzed as raising-to-object constructions, whereas all occurrences of ditransitive laten with infinitival complements should be analyzed as object control constructions. I show that the monotransitive constructions allow passivization of the raised embedded subject, while the ditransitive constructions do not allow passivization of their indirect object, whether it is realized as a PP or as a DP. From this I conclude that the DP-realization of the indirect object must have inherent Case.

Having established that laten can function as a ditransitive verb, I argue against an overall Passive Infinitive (PI) analysis of 'subjectless' laten in section 4.4. I show that certain predictions made by a PI-analysis are not borne out, and that an active infinitive analysis with a PRO subject is an adequate alternative. I do not explicitly argue against the complex verb analysis, but assume on the basis of the projection principle that the thematic roles of the embedded predicate must all be syntactically realized.1 In the end of this section, I argue that the relatively high position of the embedded object in laten-constructions cannot generally be motivated by Case-driven movement, and conclude that the obligatory scrambling of the object must be part of a larger word order problem, presumably related to the OV-character of Dutch and the syntactically modal nature of laten.

In section 4.5, we discuss the licensing of PRO in ditransitive

1See Haider (1997) for an analysis involving merger of thematic roles.
*laten*-constructions. I propose that the empty embedded subject is assigned structural nominative Case by the embedded (dependent) Tense head. This claim links the licensing of PRO in *te*-less infinitives to the licensing of PRO in non-verbal and gerundive Small Clauses, as discussed in the previous chapter. There, we adopted the idea that all Small Clauses contain a dependent TP, the head of which structurally licenses an empty subject in its specifier by checking nominative Case in this position. Unlike PRO in controlled non-verbal SCs, however, PRO in Dutch *laten*-constructions is licensed without a lexical controller and receives an independent, arbitrary interpretation comparable to the independent interpretation of PRO in *to*-infinitival subject clauses.

I propose that PRO in *laten*-constructions is minimally identified for content by the infinitival ending *-en*, which identifies PRO as an arbitrary external argument with indefinite or generic reference. Support for this claim comes from the behavior of nominalized infinitives versus the behavior of deverbal nouns in Dutch. It is shown that nominalized infinitives only license external arguments as genitive subjects, while deverbal nouns license both external and internal arguments as pre-nominal genitives (cf. Safir 1987).

In section 4.6, I argue that the English *let/have* constructions can be analyzed in the same way as the equivalent *laten* constructions in Dutch. I show that the English equivalents of the Dutch ditransitive *laten*-constructions do not allow raising of the accusative DP to matrix nominative position under passivization, either. From this, I conclude that the accusative DP in these *let/have* constructions is not structurally assigned accusative Case, but must have inherent Case, which is comparable to the inherent Case of the second object in double object constructions. If so, the accusative DP can be analyzed as an internal argument of *let/have*, which functions as the controller for the empty subject of the bare infinitival complement clause. The difference between English and Dutch with respect to the obligatory and optional realization of the controlling argument is explained by the fact that Dutch, but not English, has an infinitival ending (*-en*), which may minimally content-identify PRO.
4.2. The argument structure of laten

4.2.1. Introduction

In this section we discuss the lexical properties of the Dutch permissive and causative verb laten. I postpone a comparison with the properties of the equivalent verbs *let/have in English to section 4.6, because a clear discussion of the behavior of the Dutch verb will put the issue in perspective. In this section, I show that the Dutch verb laten is semantically a lexical verb, because it has an independent argument structure. In what follows I show that laten may be either a monotransitive verb or a ditransitive verb.

4.2.2. Monotransitive laten

The Dutch verb laten not only occurs with verbal complement clauses, but also licenses constructions as those in (3).

(3) a Kees liet een windje/een boer
   b *Kees let a fart/a burp
      ‘Kees farted/burped’
   c Laat dat!
   d *Let that!
      ‘Don’t do that!/Leave that!’

The examples in (3) show that Dutch laten licenses a simplex monotransitive complement by assigning it accusative Case. The sentences (3a,c) show that laten may independently function as a lexical verb in the same way as English leave in (3d), selecting a direct object DP. In (3a) the object is a referential DP, while in (3b) the object is a demonstrative pronoun referring to some activity.

The Dutch causative verb also allows non-verbal SC-complements, as illustrated in (4).

(4) a Fred liet [zijn hond uit]
   Fred let [his dog out]
   ‘Fred walked his dog (outside)’
   b Katja liet [haar hond los]
   Katja let [her dog loose]
   ‘Katja unleashed her dog’
The non-verbal heads of the SC-complements do not themselves license a lexically realized embedded subject. The fact that the embedded subjects are nonetheless licensed as lexical accusative DPs, as illustrated in (5), suggests that they are Case-marked by the higher verb.

(5) a Fred liet [hem uit]
Fred let [him out]
‘Fred walked him (outside)’
b Katja liet [haar los]
Katja let [her loose]
‘Katja unleashed her’

If the embedded subjects are indeed assigned structural accusative Case by the matrix verb, we expect that they must raise to nominative subject position under matrix passivization. The examples in (6) show that this prediction is correct.

(6) a De hond werd door Fred uitgelaten
The dog was by Fred out-let-PTC
‘The dog was walked outside by Fred’
b De hond werd door Katja losgelaten
The dog was by Katja loose-let-PTC
‘The dog was unleashed by Katja’
c De boel werd de boel gelaten door Herman
The stuff was the stuff let-PTC by Herman
*?‘Things were let to take care of themselves by Herman’

As the embedded subject can be moved into matrix subject position under passivization, the conclusion is justified that matrix structural accusative Case is assigned to the embedded subject. For these constructions, I will adopt a raising analysis as proposed in section 3.6 of the previous chapter. In both raising-to-subject and raising-to-object SC-constructions, the embedded subject position is not protected from raising to a higher Case position.

Although we have argued in chapter 3 that embedded Tense, whether finite or non-finite, is always capable of assigning structural nominative Case to its specifier, the raising-to-object operation must nonetheless be assumed to be Case-driven, since further passivization
is licensed. The raising-to-object movement in (4) and the raising-to-subject movement in (6) are motivated by the need for the structural Case feature of the matrix verb to be checked, and by the need for the embedded argument to be content-licensed. As the matrix verb is not a control verb, there is no potential controlling argument, and the content of the embedded subject can only be licensed by movement of this argument into a position where it can be made lexical.

Monotransitive laten thus assigns structural accusative Case to the embedded subject. In the next section, we consider ditransitive laten.

4.2.3. Ditransitive laten

This subsection presents evidence for the hypothesis that Dutch laten also occurs as a ditransitive verb. Crucial examples are given in (7).

(7) a Jan liet de eer aan Marie
    Jan left the honor to Marie
    ‘Jan let Marie have the credit’

b Hij liet haar de eer
    He left her the honor
    ‘He let her have the credit’

These examples show that Dutch laten not only occurs with monotransitive verbless complements, but also with ditransitive verbless complements. The DP de eer in (7a) is the direct object, and the PP aan Marie is the indirect object. The examples in (7) are two variants of the so-called dative alternation constructions, where the example in (7a) is the dative variant and the example in (7b) is the double object variant of the ditransitive construction.²

For Dutch it is a well-known fact that indirect objects and their double object realizations cannot be promoted to nominative subject position, because these objects have inherent Case. The fact that the first object in example (7a) can, but the first object in example (7b) cannot be passivized shows that the first DP in the double object

²For a detailed analysis of the dative construction and double object alternation see Den Dikken (1992; 1995) and Mulder (1992) and references cited there. The former argues that the two constructions are variants of one and the same underlying construction, while the latter argues that the two constructions are not syntactically related.
construction is not marked for structural Case. Consider (8).

(8) a  De eer werd aan Marie gelaten (door Jan)
     The honor was to Marie let (by Jan)

b  (Aan) Haar/*Zij werd de eer gelaten (door Jan)
    (To) Her/*She was the honor let (by Jan)

These examples show that _laten_ can have a ditransitive argument structure, but that in these cases, the indirect internal argument cannot raise to nominative subject position under passivization, because they are not structurally Case-marked. I will use this analysis to support my hypothesis that the traditional Acl-analysis of examples like (1) should be replaced by an object control analysis of these constructions.

### 4.3. _Laten_ and infinitival complement clauses

#### 4.3.1. Introduction

In this section, I extend the analyses of both mono- and ditransitive _laten_ to constructions with a verbal direct internal argument. First, I present an inventory of what may seem to be four different occurrences of _laten_ with an infinitival complement. Then, I argue that these four different instances can be reduced to two basically different constructions, namely a monotransitive and a ditransitive one. It turns out that the monotransitive constructions involve unaccusative complement clauses, and the ditransitive constructions involve unergative and transitive complement clauses. Another conclusion is that only the monotransitive constructions are genuine cases of Acl, which can be analyzed as raising-to-object constructions. Finally, I argue for an object control analysis of ditransitive _laten_ constructions.

#### 4.3.2. Four types of infinitival complements

The examples in (9) represent four superficially different occurrences of _laten_ and infinitival complements.
(9)  
  a  Jan liet (Marie) de auto wassen/ zien  
      Jan let (Marie) the car wash/ see  
  b  Jan liet de auto wassen (door Marie)  
      Jan let the car wash (by Marie)  
      'Jan let Marie wash the car'  
  c  Jan liet de auto zien (aan Marie)  
      Jan let the car see (to Marie)  
      'Jan showed Marie the car'  
  d  Jan liet *(de vaas) vallen  
      Jan let the vase fall  
      'Jan dropped the vase'  

Constructions like (9a,d) have traditionally been analyzed as instances of Acl-constructions. Constructions like (9b) have been analyzed as Passive Infinitives (cf. Bennis & Hoekstra 1989b; Coopmans 1985; Vanden Wyngaerd 1990, 1994). And constructions like (9c,d) have been analyzed as complex verb constructions (cf. Kayne 1975; Zubizarreta 1985; Coopmans and Everaert 1988; Guasti 1993; Haider 1997).

All three analyses start from the initial assumption that the accusative DP in (9a,c) is assigned structural accusative Case. In the Acl-analysis, the accusative Case is assigned by the matrix verb to the embedded subject (9a). In the PI-analysis of (9b), it is argued that the infinitival ending -en is capable of absorbing the structural accusative Case from the matrix verb, in the same way as has been argued for passive morphology (cf. Baker, Johnson & Roberts 1989; Jaeggli 1986). In the complex verb analysis, the verbal complex assigns structural accusative Case to its direct object. For all these analyses we expect that if they are correct, the embedded subject of the active Acl-construction, the underlying embedded object of the PI-construction and the direct internal argument of the complex verb analysis will be available for promotion to matrix nominative subject position.

Consider the examples in (10).

(10)  
  a  *Zij werd/is de auto laten wassen (door Jan)  
      She was the car let wash (by Jan)  
  b  De auto *werd/%is laten wassen (door Marie)  
      The car was let wash (by Marie)  
  c  *Zij werd/is de auto laten zien (door Jan)  
      She was the car let see (by Jan)  
  d  De auto *werd/%is laten zien (aan Marie)  
      The car was let see (to Marie)
De vaas *werd/%is laten vallen (door Jan)
The vase was let fall (by Jan)

The examples in (10a,c) show that native speakers of Dutch never allow promotion of the embedded ‘subject’ to matrix nominative position under passivization of laten with transitive infinitival complements. The examples in (10b,d,e), however, show that some native speakers allow passivization of the embedded subject of PI and complex verb constructions, but only when the auxiliary of the perfect is used (cf. Coopmans 1985). Therefore, I propose that only for those speakers who find (10b,d,e) grammatical, it must be concluded that the accusative DP in (9b,c,d) is a genuine instance of structural accusative Case. For standard Dutch speakers, however, the accusative DPs in (9), cannot be analyzed as structurally Case-marked DPs, since they cannot be raised to matrix nominative position. This suggests that these DPs have inherent Case, comparable to the inherent Case of the indirect object of ditransitive laten with a non-verbal complement. This also suggests that the DPs with inherent Case may not be subjects at all, but indirect objects.

The inadequacy of the Acl, PI and complex verb analyses is also supported by cross-linguistic evidence. Zubizarreta (1985) provides examples from French and Spanish, showing that these languages do not allow passivization of the embedded underlying object. She also shows, however, that a language like Italian does allow such long passivization. Consider the examples in (11).

(11) a On a fait construire la maison par Casimiro (French)
   ‘We made construct the house by Casimiro’

   b *La maison a été faite construire (par Casimiro)
   c *La casa fué hecha construir (por Casimiro) (Spanish)
   The house was made construct (by Casimiro)

   d Quei brani furono fatti legere (da Giovanni) (Italian)
   ‘Those passages were made to be read (by Giovanni)’

The fact that the passive verb worden (to be) cannot be used suggests that laten does not assign structural accusative Case. The fact that some dialects, however, allow passivization with the perfective verb zijn (to be) suggests that the matrix subjects in these constructions derive from an object position with structural Case. In these cases it seems best to adopt a complex verb analysis.

The examples in (11) have been taken from Zubizarreta (1985: 268, exx. 59, 60). The Italian example originates from Burzio (1981: 371).
From these examples we may conclude that *la maison* in (11a) does not receive structural accusative Case from the matrix verb, because it cannot be passivized to matrix nominative position in (11b). The same can be concluded for *la casa* in the Spanish example in (11c). The Italian example, however, shows that not all languages have the same syntactic representations for their causative constructions. The example in (11d) suggests that *quei brani* must have been in matrix object position, so that it can be promoted to matrix nominative position after passivization. Thus, although for some speakers the examples in (9b,c,d) may pattern with the Italian causative and allow structural Case marking of their embedded subjects, the examples in (11a,b,c) and (9a) do not.

For the Acl-analysis this means that the embedded ‘subject’ in the latter examples may not be a subject at all. For the complex verb analysis this means that the argument cannot be a genuine direct object, but must be an indirect object with inherent Case. I assume that the embedded infinitive heads an independent clause with its own argument structure, including the external argument of unergative and transitive constructions. From the examples in (3) and (4) we know that *laten* is capable of assigning structural accusative Case, but as the accusative arguments in (9) cannot generally be passivized, we must conclude that they are not licensed by structural Case in these particular instances. In (7) we saw that *laten* also licenses ditransitive constructions, and that the indirect object may be realized as an inherent Case-marked accusative DP. Therefore, I propose that the direct argument may sometimes be realized as an infinitival clause, while the indirect argument is realized either as a PP or a DP with inherent Case.

This proposal is supported by the fact that *laten* also allows *te*-infinitival clauses as direct internal arguments. This is illustrated in (12).\(^5\)

---

\(^5\)Some native speakers prefer a lexical particle *over* in these constructions, as in *over-laten*. Many speakers allow the constructions in (12) both with and without an overt particle. The presence of the particle, however, does not affect the present analysis. It does, however, support the idea that ditransitive constructions are to be syntactically represented in a Small Clause structure headed by a(n abstract) particle, as has been advocated by Hoekstra (1984), Kayne (1984; 1994), Den Dikken (1992; 1995). By their analyses dummy *het* in (12) is a SC subject and the *aan*-PP is the SC predicate. The head of the SC is either empty or filled by the particle *over*. 
(12) a Jan liet het aan Marie [om PRO de auto te wassen],
    Jan let it to Marie [for the car to wash
    'Jan left it to Marie to wash the car'
b Het werd (door Jan) aan Marie gelaten [om de auto te
    wassen]
    It was (by Jan) to Marie let [for the car to wash]
    'It was left to Marie to wash the car (or not)'
c #Jan liet het [om PRO de auto te wassen]
    Jan let it [for the car to wash]
    'Jan did not wash the car'

In this example, the object position of the matrix verb laten is occupied by a 'dummy' pronoun het, which functions as a kind of quasi-argument (cf. Bennis 1986), the content of which is specified in the appositive control clause. In this case, the object pronoun can be promoted to subject position under passivization, as in (12b), and the indirect object remains the controlling argument. The (c) example is marked by a #, because its semantics are different from (12a,b): the monotransitive construction in (12c) does not have a permissive reading with object control, but an 'omissive' reading with subject control.

Although the interpretations of the examples in (12a,b) are not identical to those of the examples in (9a,b), I believe that it is the same ditransitive verb laten which is involved in (9) and (12). The examples in (9) allow either a causative or a permissive reading of laten, whereas the examples in (12) only allow a permissive reading. I suggest that the difference in meaning between (9a) and (12a) is related to the status of the infinitival clauses. In (9), the infinitival clause is the direct internal argument of the matrix verb laten, comparable to the direct internal argument of non-verbal ditransitives as in (7). The om..te-infinitival clause in (12), on the other hand is an appositive clause, structurally realized as an adjunct. The adjunct status of this clause is supported by the fact that the complementizer om cannot be left out. Compare the examples in (13).

(13) a Jan beloofde Marie [(om) PRO de auto te wassen]
    Jan promised Marie [(for) PRO the car to wash]
b Jan moest hard rennen [*(om) PRO de trein te halen]
    Jan had-to fast run [for PRO the train to catch]
c Jan liet het aan Marie [*(om) PRO de auto te wassen]
    Jan let it to Marie [for PRO the car to wash]
The complementizer *om* in (13c) is obligatory, as is the complementizer in the purpose adjunct in (13b), but in the infinitival argument in (13a) the complementizer is optional. This supports the analysis of the *om...te* infinitive in (12) as a syntactic adjunct.

Another difference between (9) and (12) is that in (12) the controlling argument may not remain implicit, whereas (9b) shows that absence of a lexical controller for these constructions in unproblematic. In constructions like (12c), with the indirect object left implicit, the interpretation of a monotransitive *laten* is forced, yielding an interpretation as in (12c) (*Jan didn’t do it*), where no implicit object control is possible. Instead, we have subject control.

In this section, I have shown that *laten* may function as a ditransitive verb, and that it can assign structural accusative Case. I have also shown that this structural accusative Case is not assigned to traditional Acl-subjects, and for most native speakers of Dutch, it is not assigned to the underlying embedded object of a ‘subjectless’ infinitive, either. Having established that the traditional Acl-subjects of infinitival complements to *laten* are not assigned structural Case, but must be analyzed as the indirect internal argument in a double object construction, I will now present more evidence against a Passive Infinitive analysis of ‘subjectless’ infinitival complements to *laten*.

### 4.4. Evidence for an active infinitive analysis

#### 4.4.1. Introduction

In this section I argue that PRO is licensed in bare infinitival complement clauses to Dutch *laten*, even when there is no lexical controller present. In this section, we consider *laten*-constructions with an infinitival complement clause the subject of which remains unexpressed, as in (14).

\[
\begin{align*}
(14) & \quad \text{a} \quad \text{Jan liet de auto wassen} \\
& \quad \text{Jan let the car wash-INF} \\
& \quad \text{‘Jan let/had someone wash the car’} \\
& \quad \text{b} \quad \text{Jan liet de jurk zien} \\
& \quad \text{Jan let the dress see-INF} \\
& \quad \text{‘Jan showed the dress’}
\end{align*}
\]

Below, I present various arguments against a PI-analysis of these
‘subjectless’ infinitives. I propose that only for those speakers who allow passive constructions in (10b,d,e), the embedded object must have moved through the matrix object position in order to be promoted to the matrix nominative position. A PI-analysis, however, raises the question why the infinitival ending –en never absorbs the embedded accusative Case in (om.) te-infinitives. Therefore, in this and the next section, I argue that –en never absorbs structural accusative Case, but is involved in the content-licensing of a PRO subject.

4.4.2. The syntactic status of the internal argument in ‘subjectless’ infinitives

If the constructions in (14) are to be analyzed as instances of PI, we would expect that the object of the embedded verb must move to embedded subject position, since the structural accusative Case of the embedded verb is absorbed by the infinitival ending. Dutch word order is not very helpful in deciding whether subjectless infinitival complements are active or passive constructions, since Dutch has SOV surface word order, so that the object always precedes the infinitive, whether active or passive. On the basis of equivalent Swedish examples, however, I argue that Dutch ‘subjectless’ infinitival complements to laten are active constructions. I show that Swedish allows active infinitives without a lexical subject. In these constructions it can be seen from the surface (S)VO word order that the object does not move into subject position. Second, the active status of these constructions is confirmed by the absence of passive morphology. Swedish has the property of morphologically marking its infinitives for passive by the suffix -s. The subjectless infinitives with VO-order do not have passive morphology. Analyzing such constructions as PIs is incompatible with both syntactic and morphological facts. Consider the examples in (15).

(15) a Jan lät (några småpojkar) tvätta bilen
Jan let (some little boys) wash car-DEF
b Jan lät tvätta bilen (av några småpojkar)
Jan let wash car-DEF (by some little boys)
‘Jan had the car washed (by some little boys)’
c Jan lät bilen tvätta-s (av några småpojkar)
Jan let car-DEF wash-PASS (by some little boys)
‘Jan had the car washed (by some little boys)’

(K. Börjars p.c.)
The examples in (15) show that the embedded internal argument only moves to precede the embedded verb, when the infinitive has additional passive morphology, resulting in the SV-order, as in (15c). In case of an active infinitive, the external argument may also remain implicit, but the internal argument appears to the right of the verb, in a VO-order, as illustrated in (15b).

The fact that the av-PPs do not only occur with the passive infinitives (15c), but also with active infinitives (15b) suggests that the agentive by-phrases identify the content of the unexpressed external argument of the embedded verb. A PI-analysis of (15b) must be ruled out as incorrect, since both the morphology and the syntactic structure in this construction are active, rather than passive. The existence of these subjectless active infinitive constructions in Swedish suggests that Dutch subjectless infinitival Small Clauses may be active constructions, as well.

This idea is furthermore supported by the behavior of the Dutch emphatic anaphor zelf (cf. Everaert 1986; Petter 1994). This anaphor can emphasize any DP it is adjacent to, but if it is not adjacent to a DP it can only be bound by subjects. Compare the examples in (16) and (17).

(16) a Ik š duwde de president; zelf k/1 vanmorgen in de auto
I pushed the president self this morning in the car
‘I (myself) pushed the president (himself) into the car this morning’

b Ik š duwde de president; vanmorgen zelf k/1 in de auto
I pushed the president this morning self in the car

c De president; zelf; werd vanmorgen in de auto geduwd
The president self was this morning in the car pushed
‘The president himself was pushed into the car this morning’

d De president; werd vanmorgen zelf; in de auto geduwd
The president was this morning self in the car pushed
‘The president himself was pushed into the car this morning’

In (16a), the transitive verb duwen (push) is realized in an active

---

The sentence in (15c) seems to be slightly odd, and native speakers prefer an active infinitive in combination with the by-phrase, as in (15b). Perception verbs, however, only occur in combination with passive infinitives, as illustrated in (i).

i Jan hörde en sång sjunga-*(s) inne i huset
Jan heard a song sing-*(PASS) inside the house
‘Jan heard a song being sung inside the house’ (K. Börjars p.c.)
construction. The direct object is immediately followed by the emphatic reflexive, and the coindexation indicates that zelf may emphasize either the object or the subject. In (16b), the emphatic reflexive is separated from the object by an adverb, with the result that zelf can no longer emphasize the object, but only the subject. In (16c), the transitive verb is passivized, and the emphatic reflexive emphasizes the surface subject, de president. The construction in (16d) shows that even when the derived subject and the emphatic reflexive are not adjacent, the reflexive can be related to the derived subject. Now consider the examples in (17).

(17) a  Ikₗ liet de presidentᵱ vanmorgen zelfᵱᵲ in de auto klimmen
I let the president this morning self in the car climb
‘I let the president climb into the car by himself this morning’

b  Ikₗ liet de lijfwachtenᵱ de presidentᵱ zelfᵱᵲᵲ in de auto duwen
I let the bodyguards the president himself/themselves in the car push
‘I let the bodyguards (themselves) push the president (himself) into the car’

c  Ikₗ liet de lijfwachtenᵱ de presidentᵱ vanmorgen zelfᵱᵱᵱ in de auto duwen
I let the bodyguards the president this morning themselves in the car push
‘I let the bodyguards themselves push the president into the car this morning’

d  Ikᵱ liet de presidentᵱ vanmorgen zelfᵱᵱᵱᵱ in de auto duwen”
I let the president this morning myself in the car push
‘I myself had some people push the president into the car this morning’

7If there is an empty PRO subject in the embedded clause, we would expect that zelf may emphasize the arbitrary interpretation of this PRO-subject (A. Hulk p.c.). The fact that zelf cannot be bound by the empty subject, however, suggests that non-specific empty subjects do not license an emphatic interpretation. The same phenomenon occurs with impersonal passives, as in (i).

i  *Er werd zelf geduwd
There was self pushed

In spite of the ungrammaticality of (i), it has been argued that passives contain a syntactically licensed empty external argument (cf. Fukui & Speas 1986; Hoekstra & Roberts 1993).
In all of the sentences in (17), the emphatic reflexive can be construed with the matrix subject. In the (a) sentence, _de president_ is the subject of an intransitive construction. The DP is separated from its emphatic reflexive by an adverb, but _zelf_ may still emphasize the embedded subject. In (17b) we have an embedded transitive verb. The reflexive follows the embedded object immediately, and can be associated with this object, or with the matrix object DP _de liifwachten_. The fact that _zelf_ can be bound by the matrix object _de liifwachten_ while the intervening embedded object should block binding to non-subjects supports our hypothesis that the embedded clause contains a PRO subject, to which _zelf_ may be bound, and which is controlled by the matrix object. In the (c) sentence an adverb intervenes between the reflexive and the embedded object, hence the reflexive can no longer be associated with the embedded object. In the (d) sentence, we have an embedded transitive predicate without an overt subject. The underlying object is separated from the reflexive by an adverb, and it turns out that they cannot be coindexed, so that it must be concluded that the underlying object has not moved to the embedded subject position.

This leads to the conclusion that the (d) sentence in (17) cannot receive a passive analysis, since _zelf_ cannot be bound by the embedded internal argument. Instead, the _zelf_-facts support the analysis of this construction as an active infinitive without an overt subject. Thus, I will conclude that, in the light of the Theta Criterion and the Projection Principle, the embedded infinitival clause contains an empty subject. In section 4.5 we will discuss the licensing of this empty subject.

Although we have argued that subjectless infinitival complement constructions with _laten_ should be analyzed as ditransitive active infinitives, a passive infinitive analysis must be allowed to account for superficially similar constructions with perception verbs. As mentioned in footnote 5, in Swedish subjectless infinitival complements to perception verbs only appear with passive morphology, as illustrated in (18).

(18)  
Jan hörde en sång sjunga-"s"(s) inne i huset

Jan heard a song sing-PASS inside the house

‘Jan heard a song being sung inside the house’

(K. Börjars p.c.)

This suggests that similar constructions in Dutch with the perception verb _horen_ (= _hear_) may be passive infinitives, as well. This idea seems supported by the fact that this verb does not allow non-verbal
double object constructions. Consider the example in (19).

(19) a  *Jan hoorde het liedje aan Piet
        Jan heard the song to Piet
  b  Jan hoorde (Piet) een liedje zingen
        Jan heard Piet a song sing
         ‘Jan heard Piet sing a song’
  c  Jan zag *(Piet) de piano bespelen
        Jan saw *(Piet) the piano on-play
         ‘Jan saw Piet play on the piano’

The fact that *hooren does not select a ditransitive complement suggests that the constructions like (19b,c) are genuine Acl constructions. The fact that *hooren allows the embedded subject to remain implicit seems to be an idiosyncratic property of this verb, since other perception verbs do not allow this. If these constructions are Acl-constructions, it is surprising, however, that they cannot undergo matrix passivization, as illustrated in (20).

(20) a  *(Piet werd gehoord/horen een liedje zingen
        Piet was heard/hear-INF a song sing
  b  *(Piet werd een liedje zingen gehoord/horen
        Piet was heard a song sing heard/hear-INF

A possible explanation for this fact is that the SC-complement cannot satisfy the requirement that embedded clauses be Tense-linked to the matrix Tense, because passive participles and IPP-infinitives are not possible T-links. A detailed account of this phenomenon is beyond the scope of the present study, but see Bennis & Hoekstra (1989b).

Alternatively, we may on the basis of the examples in (20c,d) conclude that the perception verbs are ditransitive after all.

(20) c  Jan hoorde aan Piet, [dat hij, zenuwachtig was]
        Jan heard to Piet [that he nervous was]
         ‘Jan heard in Piet’s voice that he was nervous’
  d  Jan zag aan Piet, [dat hij, blij was]
        Jan saw to Piet [that he happy was]
         ‘Jan saw in Piet’s face that he was happy’
  e  Jan hoorde Piet steeds zenuwachtiger worden
        Jan heard Piet increasingly more-nervous get
         ‘Jan heard Piet getting increasingly more nervous’
Jan zag Piet steeds blijer kijken
Jan saw Piet increasingly happier look
‘Jan saw Piet looking happier all the time’

In (29c,d) the perception verbs horen and zien have a three-place argument structure, with the aan-PP as the indirect argument and the finite clause as the direct argument. If perception verbs are ditransitive in (19) and (20), this explains why the passivized clauses in (20a,b) are ungrammatical, since indirect arguments cannot be passivized to nominative position in Dutch. However, I will leave the ultimate explanation for further research and continue our discussion of the behavior of Dutch laten.

4.4.3. Ditransitive laten with infinitival complements

If subjectless infinitival complement constructions to laten were always to be analyzed as PIs, we would expect that the implicit external argument can always be recovered for content by a passive door-phrase. If, however, laten selects an infinitival perception verb or verb of knowledge, a door-phrase is ungrammatical, in spite of the fact that perception verbs themselves can independently be passivized. Consider (21).

\[(21) a\] Jan liet een foto zien aan Kate/*by Kate
Jan let a photo see to Kate/*by Kate
‘Jan showed a photograph to Kate’

\[(21) b\] Jan liet het plan weten aan Martin/*by Martin
Jan let the plan know to Martin/*by Martin
‘Jan made the plan known to Martin’

\[(21) c\] Jan liet de brief lezen aan Marie/door Marie
Jan let the letter read to Marie/by Marie
‘Jan let Marie read the letter’

A PI-analysis for the sentences in (21a,b) cannot be correct, since it would predict that a passive door-phrase can recover the content of the embedded subject, but the examples show that a door-phrase is impossible.8

---

8It may be suggested that a complex verb analysis is appropriate in these particular cases, since the combination laten zien (=let see) has a synonymous counterpart in the simplex Dutch verb tonen (=show), as illustrated in (i).

\[(i) a\] Jan liet de foto zien (aan Kate)
This is all the more striking, because a perception verb like zien (=see) can independently be passivized, and never occurs with an aan-PP. Instead, a door-PP is always used to identify the content of the underlying demoted subject, as in (22).

(22) a  Kate zag de foto  
         Kate saw the photo  
 b  De foto werd door/\*aan Kate gezien  
         The photo was seen by/\*to Kate

Moreover, the verb weten (=know) in Dutch cannot be passivized at all, nor does it select a Goal argument, as is shown in (23), and yet it can occur embedded in a laten-construction without an overt subject, as in (21b).

(23) a  Jan wist (van) het plan  
         Jan knew (of) the plan  
 b  \*Het plan werd door/aan Jan geweten  
         \*The plan was by/to Jan known

In (21c), on the other hand, the verb lezen (read) allows a door-phrase, so that a PI-analysis may be argued to apply to this particular construction. However, the fact that the embedded subject may also be recovered by an aan-PP suggests that a PI-analysis is not forced. Moreover, the fact that the aan- and door-PPs cannot co-occur, suggests that they represent the same argument, as illustrated in (24).

(24) a  \*Jan liet aan Marie de brief door Kate lezen  
         Jan let to Marie the letter by Kate read  
 b  \*Jan liet aan Marie, de brief lezen door haar,  
         Jan let to Marie the letter read by her

\[\]

Jan let the photo see to Kate  
 b  Jan toonde de foto (aan Kate)  
         Jan showed the photo to Kate  
 ii  a  Jan liet (Kate) de foto zien  
         Jan let the Kate photo see  
 b  Jan toonde (Kate) de foto  
         Jan showed Kate the photo

In section 4.3, however, I argued that laten can also function as a ditransitive verb. The relatively independent behavior of laten as a lexical verb and the θ-criterion force the conclusion that the causative and embedded verbs should both be represented as independent lexical verbs with their own argument structure.
These examples argue against the idea that the by-phrase is an argument of the embedded verb, while the aan-PP is an argument of the matrix verb. If this were so, we would expect that the two PPs may refer to different people, which is not possible, as shown in (24a). We would also expect that the pronoun in (24b) is allowed to corefer with the aan-PP object if the embedded clause constitutes a binding domain independently of the matrix clause, or else if the embedded clause is transparent for binding from the matrix clause we expect that the anaphor in (24c) may corefer with the aan-object. As none of these constructions is grammatical, we must conclude that the aan- and door-PP represent one and the same argument, namely the indirect internal argument of the higher verb.

In Romance languages, the variation between Agentive and Goal-like prepositions is much more common. French and Italian causative structures, for instance, allow either preposition for many combinations of infinitival complement with the causative verbs faire and faire, respectively. As can be seen from the French examples in (25), the Agent of the embedded clause is expressed in a prepositional phrase, which can be headed either by Agentive par, or the Goal preposition à (cf. Cannings and Moody (C& M) 1978: 335).

(25) a J'ai fait écrire la dissertation par un copain
    'I had a friend write the composition'

    b J'ai fait écrire une dissertation à mes étudiants
    'I had my students write a composition'

Although the example in (25a) might still be analyzed as a passive infinitive, the example in (25b) certainly cannot, since the à-PP is not a passive Agent, but a Goal. According to C&M, there is a difference in 'affectedness' between the two PPs. In combinations with the Goal preposition, as in (22b), the students are meant to be 'affected' by their writing, i.e. they are expected to learn something from it. In the case of the Agentive preposition, as in the (a) example, the friend need not be affected by his writing the composition. C&M argue that in both constructions the infinitive is active with the different prepositions indicating a difference in

---

9The examples in (11), however, have shown that the embedded object cannot be promoted to the matrix nominative subject position under passivization of the higher verb. Therefore, I believe that a PI analysis of (25a) is incorrect.
affectedness, i.e. the Agent of the writing process need not be affected in the (a) sentence, but in the (b) sentence it must be affected.

Similar examples for Italian are given in (26), where the embedded Agent is also expressed by a ‘subjectless’ infinitive followed by a a or da-PP.

(26) a Maria ha fatto riparare la macchina da Gianni
Maria has made repair the car by Gianni
b Maria ha fatto riparare la macchina a Gianni
Maria has made repair the car to Gianni  (Guasti 1993: 26)

These examples might suggest that a complex verb analysis for Romance causatives may exist alongside a passive-infinitive analysis, since either a passive by-phrase or a Goal-PP may be used to give referential content to the embedded Agent. However, in the light of the EPP-requirement of a subject for every clause, the fact that not only the Agentive by-phrase, but also the overt Goal-PP is interpreted as the Agent of the embedded infinitival Small Clause may also be taken to indicate that the external θ-role of écrire and riparare is syntactically represented as an empty subject, which is controlled by the indirect internal argument of the higher verb.

On theoretical grounds, I will adopt the latter analysis, because the examples in (7), section 4.2, have shown that laten occurs as an independent lexical verb with a ditransitive argument structure. By the Projection Principle, both internal arguments must be syntactically represented. If one of these arguments (e.g. the direct complement) is clausal, the θ-roles within the embedded clause must be represented independently from the θ-roles of the higher clause, by the θ-criterion. The examples in (11), section 4.3, have furthermore shown that in French and Spanish the embedded object of ‘subjectless’ infinitives to causative verbs are not marked for structural Case by the matrix verb, because they cannot be promoted to nominative position. In these cases, therefore, the embedded objects must be licensed in the embedded clause itself. The matrix accusative Case may in these cases be checked (at LF) by the selected infinitival head itself, because the infinitival ending has nominal properties (cf. Reuland 1983; Raposo 1987; Kayne 1991). For Italian, it may be argued that the argument structure of fare is only monotransitive, since the Italian AcI subject may be promoted to matrix nominative position under matrix passivization, and long passivisation of the embedded object is allowed, as illustrated in (27).
(27) a Il prigionieri furono fatti lavorare nelle minieri
the prisoners were made work in the mines
‘The prisoners were made to work in the mines’
b Quei brani furono fatti leggere (da Giovanni)
those passages were made read (by Giovanni)
‘Those passages were made to be read (by Giovanni)’
(Zubizarreta 1985: 279, 268)

This suggests that the causative constructions in Italian are
monotransitive raising constructions while the causative
constructions in Dutch, French and Spanish are ditransitive control
constructions. By the Projection Principle and the Theta Criterion,
languages in the latter group license an empty subject in the
embedded infinitival clause. In the next section we discuss how the
empty subject is licensed, but first I want to address the problem of
the position of the embedded object in laten-constructions.

4.4.4. Ditransitive analysis laten and Dutch word order

One of the arguments in favor of a PI-analysis of ‘subjectless’ laten-
constructions is that the embedded object has moved to a higher
position, which is always to the left of laten. We saw above that this
underlying object does not behave as a subject, which is a valid
argument for rejecting the PI-analysis for these constructions. The
fact remains, however, that the embedded object is not licensed in a
surface position adjacent to the selecting verb. In this subsection, I
show that this fact is not specific to ‘subjectless’ laten-complements,
but can also be observed in laten-constructions with a lexical
‘embedded subject’. It turns out that this word order is the same in
constructions with verb clusters headed by modals or auxiliary verbs
of the perfect. Thus, we must conclude that, although laten is a
lexical verb with respect to its argument structure, it behaves as an
auxiliary verb with respect to verb clustering and object placement.¹⁰

¹⁰The account of the position of the embedded object is problematic for the
underlying SVO-analysis of Dutch. Under the earlier SOV-analysis, verb-raising to
a right-headed Infl node accounts for the fact that that verbs appear to cluster and
subjects and objects all precede the entire verb cluster. In the more recent SVO-
analysis of Dutch, all projections are left-headed, and word order phenomena are
accounted for by left-ward movement for reasons of feature checking. This makes it
difficult to account for the obligatory word order of (superficial) Acl constructions,
since there is only one AgrOP where accusative Case features are to be checked. In
spite of these problems, we have adopted the feature-checking analysis for syntactic
This conclusion, however, does not exclude an analysis in which a Small Clause infinitival complement licenses a PRO subject.

If the 'subjectless' infinitival complement to laten is a controlled clause rather than a Passive Infinitive, we expect the embedded object to be licensed in the embedded clause. The examples in (28), however, suggest that the embedded object is licensed in the matrix clause, in spite of the fact that we saw earlier that it does not behave as a subject with respect to emphatic reflexives.

(28) a ... dat Jan gisteren de auto heeft laten [wassen]  
    ... that Jan yesterday the car has let wash  
 b ... dat Jan de auto gisteren heeft laten [wassen]  
    ... that Jan the car yesterday has let wash  
 c *... dat Jan gisteren heeft laten [de auto wassen]  
    ... that Jan yesterday has let the car wash  
 d *... dat Jan heeft laten gisteren [de auto wassen]  
    ... that Jan has let yesterday the car wash

These examples show that the embedded object is not licensed immediately to the left of embedded verb, but to the left of the highest verb. At first impression, these facts seem to support a PI-analysis, because the embedded object obligatorily moves into the higher clause. However, in what follows I show that the position of the embedded object is also to the left of the highest verb when the 'embedded subject' is lexically realized; in fact both embedded arguments appear to be realized in the matrix clause. This is not expected if the position of the embedded object were related to the Case absorption properties of the infinitival ending -en. Moreover, if this were so, we would expect that the embedded object of te-infinitives must also move into the matrix clause in order to be licensed. However, below it is illustrated that the embedded object in te-infinitives never moves into the higher clause, although it always appears to the left of a cluster of verbs, as is also the case in finite dat-constructions.

Consider first the laten-examples in (29) with a lexically realized 'embedded subject'.
The examples in (29d,e) show that even though the accusative DP Marie is lexically present, the embedded object de auto and the temporal adverb gisteren must be licensed to the left of the highest verb. Under a traditional Acl-analysis, the embedded subject receives structural accusative Case from the matrix clause, so that there seems to be no A-position available for the embedded object to move as high as it does. This suggests that the movement of the embedded object is not necessarily Case-driven. The fact that the embedded object cannot be licensed immediately to the left of the embedded verb in (29e) may seem to argue that it is licensed by the matrix verb, but other examples show that constructions with high licensing of the embedded object are not specific to the verb laten.

A similar clustering of verbs is to be observed in constructions with the auxiliary verb of the perfect (hebben) and in constructions headed by modals, as illustrated in (30) and (31), respectively.

(30) a  ... dat Jan gisteren Marie de auto heeft laten wassen
       ... that Jan yesterday Marie the car has let wash
 b   ... dat Jan Marie gisteren de auto heeft laten wassen
 c   ... dat Jan Marie de auto gisteren heeft laten wassen
 d   *... dat Jan Marie de auto heeft laten gisteren [wassen]
 e   *... dat Jan Marie gisteren heeft laten [de auto wassen]

(31) a  ... dat Jan gisteren Marie de auto zou hebben laten wassen
       ... that Jan yesterday Marie the car would have let wash
 b   ... dat Jan Marie gisteren de auto zou hebben laten wassen
 c   ... dat Jan Marie de auto gisteren zou hebben laten wassen
 d   *... dat Jan Marie de auto zou hebben laten gisteren
     [wassen]
 e   *... dat Jan Marie gisteren zou hebben laten [de auto wassen]
 f   *... dat Jan Marie de auto zou hebben gisteren [laten
     wassen]
 g   *... dat Jan Marie gisteren zou hebben [de auto laten wassen]
The examples in (30d,e) and (31e,f,g) show that the temporal adverb and the embedded object cannot break up the verbal cluster headed by an auxiliary of the perfect tense or a modal verb, i.e. anything other than a verb must be realized to the left of the entire verb cluster. The fact that it is not only the embedded object, but also other material, such as adverbs, which may not occur inside a cluster of verbal elements, suggests that the relatively high position of the embedded object is not to be explained as Case-driven movement. In the constructions with another accusative DP, an Acl-analysis cannot account for the high position of the embedded object, since the ‘embedded subject’ is assumed to be licensed by structural accusative Case from the matrix clause, so that there is no structural Case position left in the matrix clause for the embedded object.

If the licensing of the embedded object in a higher position is related to the Case-absorbing properties of the infinitival –en, we expect that the embedded object cannot be licensed in embedded to-infinitives, either. However, the examples in (32) show that embedded objects are always licensed inside the embedded clause, although they must appear to the left of the entire verbal cluster in te-infinitival constructions.

(32) a  Jan beloofde Marie [om PRO vóór de volgende week de auto te zullen hebben gewassen]
        Jan promised Marie [for PRO before the following week
        the car to will have washed
        ‘Jan promised Marie that he would have washed the car
        before next week’

        b  *Jan beloofde Marie [om PRO vóór de volgende week te
            zullen hebben de auto gewassen]

        c  *Jan beloofde Marie [om PRO vóór de volgende week te
            zullen de auto hebben gewassen]

        d  *Jan beloofde Marie de auto [om PRO vóór de volgende
            week te zullen hebben gewassen]

The examples in (32b,c) show that even in te-infinitives the object of the most deeply embedded verb cannot be licensed immediately next to this verb, but that it must be licensed to the left of the entire verb cluster, including te. The example in (32d), however, shows that the object cannot be licensed in the higher clause, forcing the conclusion that the structural Case-licensing properties must be available within the embedded clause. The fact that the object is licensed in the embedded clause itself provides an argument against the ambiguous Case-absorption properties of –en, which are essential for a PI-
Finally, similar verb clustering phenomena and licensing of the object of the most deeply embedded verb in a high structural position are also to be observed in finite constructions, as in (33).

(33) a Jan belooft Marj [dat hij voor de volgende week de auto zou hebben gewassen]
    Jan promised Marj [that he before the following week the car would have washed]
    'Jan promised Marj that he would have washed the car before next week'

b *Jan belooft Marj [dat hij voor de volgende week zou hebben de auto gewassen]

c *Jan belooft Marj [dat hij voor de volgende week zou de auto hebben gewassen]

d *Jan belooft Marj de auto [dat hij voor de volgende week zou hebben gewassen]

These examples show that in both finite and non-finite constructions objects and adjuncts cannot break up a cluster of verbs, so that even the object of the most deeply embedded verb is realised in a relatively high position. When we compare the examples in (29), (30) and (31) to the examples in (32) and (33), we must conclude, however, that there is an obvious difference between the two types of constructions. In the former group, the verbs all cluster together, so that the objects appear to the left of all verbs. In the latter group, the matrix verb (or verb cluster) is separated from the embedded verb cluster, where the embedded arguments appear in between the two verb clusters.

From the examples in (29) to (33), I conclude first that the position of the embedded object in Dutch laten-constructions shows that laten has structural properties in common with modals and auxiliary verbs, which are different from purely lexical verbs. Thus, like (deontic) modals laten may be characterized as a hybrid form between an auxiliary and lexical verb, because on the one hand it has structural properties in common with auxiliary verbs, while on the other hand it has an independent argument structure like lexical verbs.¹¹ Second, the fact that not only objects, but also other non-verbal material must occur to the left of a verb cluster in Dutch

¹¹As laten is ambiguous between an auxiliary and a lexical verb it may also be referred to as a so-called ‘light verb’. Light verbs generally occur in constructions with bare infinitival complement clauses.
leads me to conclude that this cannot be analyzed as Case-driven movement, but is typical of the word order of Dutch (and German), related to the OV-character and verb-clustering properties of these languages. Various explanations have been sought for OV word order in Dutch and German. For a verb-final analysis see Den Besten & Edmondson (1983), and for a more recent movement analysis to functional head positions, see Zwart (1993). As a detailed analysis of this word order problem is beyond the scope this dissertation, I will leave it as an issue for further research. Here, I conclude that word order does not pose a problem for my analysis of infinitival complements to ditransitive laten as containing a PRO subject.

4.5. The syntactic licensing of PRO in infinitival complements to ditransitive laten

4.5.1. Introduction

In this section I argue that the infinitival complements to ditransitive laten contain a PRO subject, which is licensed for structural nominative Case and which is minimally content-identified by the infinitival ending -en of Dutch 'bare' infinitives. The examples from (1) and (2) are thus argued to be structured as in (34).

(34) a Jan liet (Marie) de auto [PRO wassen]
    Jan liet (Marie) the car [PRO wash-INF]
    ‘Jan let/had Marie/someone wash the car’

    b Jan liet de auto [PRO wassen] door Marie
    Jan let the car [PRO wash-INF] by Marie
    ‘Jan had the car washed by Mary’

    c Jan liet de auto [PRO zien] aan Marie
    Jan let the car [PRO see-INF] to Marie
    ‘Jan let/had Marie see the car’

The idea that the infinitival ending is involved in the licensing of the empty subject is supported by the fact that those European languages which allow a causative verb to combine with a 'subjectless' infinitival complement all appear to have infinitival endings, as illustrated in (35).12

12The German and Old English (from Wulfstan p. 149, l.116) examples are from Vanden Wyngaerd (1994), the Swedish example from K. Börjars (p.c.), and the
(35) a  *John let e wash the car (by Mary)  (English)
b  Jan låt e tvätta bilen (av Maria)  (Swedish)
c  Gianni fa e lavare la macchina (a/da Maria)  (Italian)
d  Jean fait e laver la voiture (a/par Marie)  (French)
e  Jan liet de auto e wassen (door Marie)  (Dutch)
f  Er ließ das Haus (von den Soldaten) e zerstören  (German)
He let the house (by the soldiers) destroy

He let [...] forhergian eall þæt land  (Old English)
He let destroy all that land

The examples in (35) suggest that for an empty subject to be licensed in an infinitival complement of a ditransitive construction, the infinitive must be morphologically marked as such. In subsection 4.5.3 I argue that the infinitival ending is essential for the content licensing of an external argument PRO.\(^\text{13}\) In subsection 4.5.2, I relate the licensing of PRO in bare infinitival Small Clauses to that in non-verbal Small Clauses, as discussed in chapter 3. It is concluded that they are similar in the sense that a dependent Tense licenses the empty subject for structural Case, but that they are different in the sense that only verbs with an infinitival (or gerundive) ending are able to minimally identify the content of the empty subject as an arbitrary external argument with indefinite or generic reference. As a consequence, PRO in Dutch infinitival Small Clauses need not have a lexical controller, while PRO in non-verbal Small Clauses does.

### 4.5.2. PRO and structural nominative Case

In this subsection we relate ‘subjectless’ infinitival complements of ditransitive laten to non-verbal Small Clause control constructions, arguing that ‘bare’ infinitival SCs may contain a PRO subject, because the dependent Tense of the infinitival clause assigns structural nominative to the embedded SpecTP. In section 3.6. of the previous chapter, it was argued with examples from Modern Hebrew (MH) and Modern Standard Arabic (MSA) that Small Clauses contain an abstract Tense projection, the head of which assigns nominative Case to its specifier.

\(^{13}\)It should be noted that the requirement of this lexical ending for the licensing of an empty subject is a language specific requirement, which applies to the languages represented in (35), but not to languages like Chinese (cf. Huang 1984, 1989).
By analogy, we concluded that such an abstract TP is universal for Small Clauses, but that it depends on language-specific requirements whether a nominative subject may be lexicalized or not. It appears that for languages like MH and MSA it is sufficient for lexical DPs to be assigned nominative Case, but for Germanic and Romance languages there is an additional requirement, namely that Tense must be finite or Agreement features must be pronominal (i.e. include person and number features) for a lexical subject to be licensed. As English and Dutch do not have pronominal agreement features for non-verbal predicates, the subject position in non-verbal Small Clauses is always empty. As the control relation with the higher argument is compelling, I argued that if this is syntactically represented, PRO may be bound to an empty operator in the embedded SpecCP, as is also the case for infinitival relatives. Examples of non-verbal SCs are given in (36).

(36) a John, came home [\text{CP} \text{Op} \ [\text{TP} \text{PRO} \ [\text{DP} \text{a wiser man}]])
   b John, came home [\text{CP} \text{Op} \ [\text{TP} \text{PRO} \ [\text{AP} \text{totally exhausted}]]]
   c John, remembered [\text{CP} \text{Op} \ [\text{TP} \text{PRO} \ [\text{VP} \text{bringing the wine}]]]

I propose that the infinitival complement clauses to ditransitive *laten* (and its cross-linguistic variants in (35)) also contain a PRO subject, which is structurally licensed for nominative Case in the dependent SpecTP of the verbal Small Clause and controlled by the other internal argument of *laten*. As the ditransitive *laten*-construction with an infinitival complement is licensed even when the controlling argument is not lexically realized, the embedded subject must be minimally content-identified in some other way, to be discussed in the next subsection.

4.5.3. **The infinitival ending as minimal content-identifier for PRO**

In this subsection, I argue that the PRO subject in constructions like (34a) is minimally identified for content by the infinitival suffix *-en*. As the infinitival ending *-en* has the same morphological shape as the plural agreement morpheme in Dutch, I will assume that the infinitival *-en* is an agreement morpheme (cf. Reuland 1983) with underspecified \(\phi\)-features (cf. Vanden Wyngaerd 1990, 1994). These match the underspecified \(\phi\)-features of the empty subject, and license an arbitrary interpretation for PRO in constructions like (37).
In (37a), the arbitrary interpretation of PRO is indefinite, and in (37b), the interpretation is generic.\(^{14}\) Compare these constructions to the passive constructions in (38).

(38) a  De auto werd gewassen
        ‘The car was washed’
        (i.e. Someone washed the car)

   b  Hier wordt altijd hard gewerkt
        Here is always hard worked
        ‘One (i.e. everyone) always works hard here’

\(^{14}\) SeeDiesing (1992) and Rizzi (1986) on different analyses of how indefinite versus generic reference is established. Diesing (1992) claims that generic (universal) reference is attained by adjoining the argument in question to IP (in what she calls the restrictive clause), while indefinite reference is attained by the argument in question being licensed in the VP, i.e. the nuclear scope of the clause. A counterexample to this idea is that indefinite subject can surface either lower or higher in the clause, as in (i).

   i  a  There is a cow in the field
        b  A cow is in the field

Rizzi (1986) claims that generic reference of an empty argument is attained by relating the argument in question to generic tense. A counterargument to this idea, however, is that some empty arguments are naturally interpreted as indefinite, even when the tense of the clause is generic, as in (ii).

   ii  a  Jan laat elke vrijdag gratis PRO autowassen
        Jan lets every Friday free car-wash
        ‘Jan lets people (i.e. everyone) wash their cars for free every Friday’

        b  Jan laat elke vrijdag zijn auto PRO wassen
        Jan lets every Friday his car was
        ‘Jan lets someone wash his car every Friday’

In (iia), the interpretation of PRO is generic, as expected under Rizzi’s analysis, but in (iib) the interpretation of PRO is indefinite, although the tense of the clause is generic. The difference between (iia) and (iib) seems to be related to a difference in aspect, in that (iia) involves a non-telic event of car-washing in general, while (iib) involves the telic event of washing one particular car. The relation between sentential aspect and the interpretation of arguments has been discussed by Dowty (1989), Borger (1994) and Tenny (1988, 1994). As the topic of aspect is beyond the present study on control, I refer the reader to these studies and references cited there.
Although both interpretations are also available for passive constructions, I have shown above that a Passive Infinitive analysis for the constructions in (37) is not adequate, since the external argument is not always recoverable by a passive-like door-PP.

What passives and laten-constructions have in common, however, is that the morphological endings of the participle and the infinitive seem to play an important role in the licensing of an empty external argument. I will argue that, in the same way as infinitival to and gerundive -ing minimally identify the content of PRO and license an arbitrary interpretation for this subject, infinitival -en minimally identifies the content of an external argument PRO in laten-constructions and likewise licenses an arbitrary interpretation. We saw above that laten does not license PRO subjects for unaccusative infinitive complements, as in (39).

(39) a  Jan liet *(de vaas) vallen
      Jan let *(the vase) fall
      ‘Jan dropped the vase’
 b  Jan liet *(iets) vallen
      ‘Jan dropped something’

In these cases, laten must be analyzed as a monotransitive verb, licensing the embedded subject in matrix accusative position. The fact that the embedded subject cannot be left unexpressed suggests that -en is not capable of minimally identifying the content of an internal argument. This lack of identification must have syntactic reasons, since semantically, the embedded subject of a construction like (39b) naturally receives an indefinite interpretation.

The fact that the internal argument of the unaccusative verb is forced to move into a Case-position in the higher clause, suggests that some other empty element may occupy the embedded SpecTP. I propose that the embedded SpecTP position is occupied by an empty expletive subject (PRO∅), so that the examples from (39) can be structurally represented as in (40).

(40) a  Jan liet de vaas; [TP PRO∅ vallen t₁]
        Jan let the vase; [TP PRO∅ fall t₁]
        ‘Jan dropped the vase’
 b  Jan liet iets; [TP PRO∅ vallen t₁]
      ‘Jan dropped something’

If these representations are correct, we can account for the fact that
the embedded internal argument cannot be left implicit, since it cannot be structurally identified within the embedded clause. As the embedded internal argument must be identified by structural Case and the nominative position in the embedded clause is occupied by an expletive PRO, the embedded object must be realized in a matrix structural Case position. As expletives only need to be structurally licensed, but need not be identified for (referential) content, PRO_{\text{eq}} is sufficiently licensed by structural nominative Case in the embedded SpecTP and may be minimally identified by underspecified agreement, in the same way as expletive pro occurs with default third person singular in pro-drop languages. Expletive PRO, however, will never be controlled by a thematic argument. As the expletive is sufficiently licensed in the embedded SpecTP without being referentially controlled, there is no need to assume a CP-level for the SC, so that the embedded object can move to the matrix SpecAgrOP via A-movement.

As transitive and unergative verbs select an external argument, these argumental PRO subjects can be minimally identified for content, but also allow argument control, when required by the higher verb. Thus, the external argument PROs in (37) and the expletive PROs in (40) can all be (minimally) identified by \text{-en}, but the internal arguments cannot. In (37a) the embedded object is assigned Case by the transitive embedded verb, but in (39), the embedded object can only be licensed in a matrix accusative Case position.

If this analysis is correct, to-infinitives must have an additional licensing feature for internal arguments to appear as PRO subjects in passive constructions, so that the licensing of expletive PRO is restricted to environments where this PRO is controlled by an expletive in the matrix clause.\footnote{Because of their potential control properties, subjects of weather-expressions have been argued to be quasi-argumental (cf. Bennis 1986).} Consider the examples in (41).

(41) a  
Jan, beloofde Marie, [PRO_{\text{eq}}{\text{g}} een mooi cadeau te kiezen]  
Jan promised Marie [PRO a nice present to choose]  
'Jan promised Marie to select a nice present'

b  
Jan, beloofde Marie, [PRO_{\text{eq}}{\text{g}} gekozen te worden]  
Jan promised Marie [PRO chosen to become]  
'Jan promised Marie to be elected'

c  
*Jan, beloofde Marie, [PRO_{\text{eq}}{\text{g}} mooi weer te worden]  
Jan promised Marie [PRO nice weather to become]
d  [Na PRO, twee weken te hebben gesneeuwd] beloofde het; eindelijk [ti weer mooi weer te worden]  
[After PRO, having snowed for two weeks] promised it; finally [ti again nice weather to become]  
‘After having snowed for two weeks, it finally promised to be nice weather again’

These examples illustrate that control verbs often lexically select for a default controller. In the case of promise the default controller is the matrix subject, as in (41a). The example in (41b), however, shows that control relations may shift from one matrix argument to the other, and that the internal argument may be a controlled PRO subject after passivization. The examples in (41c,d) show that an expletive PRO is not licensed, when the matrix verb requires argument control, but it is licensed, when the matrix controller itself has no argumental properties.

The difference between (39) and (41b) appears to be that the infinitival Tense morpheme to is able to license either external or internal arguments, while the empty dependent Tense head and the Agr morpheme -en are only capable of licensing external argument PROs. A possible explanation for this difference is that unlike empty T°, the infinitival Tense morpheme to allows different modal interpretations for syntactically similar constructions, as illustrated in (42).

(42)  

a  John, asked Mary, [PRO, to leave early]  
b  The, pupil asked the teacher, [PRO, to leave early]  

The embedded clause in example (42b) is interpreted as to be allowed/permission to leave (cf. Farkas 1988). As to-infinitives allow shifts in modal interpretations, I conclude that infinitival to adds modal features to T°, thus making it possible to license either external and internal arguments. As argumental subjects can thus be licensed whether they are external or internal arguments, expletive PRO subjects are only licensed when no arguments are selected by the embedded predicate (i.e. by the EPP) and no argument control is required by the matrix verb, so that (41c) is ungrammatical, because the matrix verb requires argument control, and (41d) is grammatical, because both the matrix and the embedded predicates are expletive constructions.

Although I do not provide an analysis of the position of te in Dutch (but see Zwart 1993), I showed in chapter 3 that English to originates in T° and argued that in control clauses to moves to C°.
We saw that English *to* has many properties in common with modals. The latter are grammaticalized elements in IP, whose [+finite] features license lexical subjects in their Specifier. These lexical subjects are licensed regardless of their status as internal or external argument, as illustrated in (43).

(43) a  Jan zegt dat Marie een mooi cadeau mag kiezen
       Jan says that Marie a nice present may choose
       'Jan says that Marie may select a nice present'

       Jan zegt dat Marie gekozen mag worden
       Jan says that Marie chosen may be
       'Jan says that Marie may be elected'

The embedded subject in (43a) is an external argument, whereas the embedded subject in (43b) is an internal argument. In the same way, PRO is licensed in SpecIP of controlled *to*-infinitives, regardless of the argumental status of the subject as internal or external argument. As the dependent Tense of the 'bare' infinitive in Dutch does not license different modal interpretations, the *-en* morpheme cannot minimally identify an internal argument as a PRO-subject.

The *-en* morpheme, however, adds the feature [+nominal] to infinitives (cf. Booij 1989), which is shown by the fact that 'bare' infinitives in Dutch can be nominalized and may be preceded by the definite article *het*. The idea that *-en* is restricted to minimal content-licensing of external argument PRO only is supported by the behavior of these nominalized infinitives with respect to the argument they allow in prenominal genitive position. Consider the examples in (44).

(44) a  Het wassen van Pietje door Jan
       The washing of Piet by Jan

       Jans wassen van Pietje
       Jan's washing of Pietje

       *Pietjes wassen door Jan
       Pietje's washing by Jan

       Pietjes gewassen worden door Jan
       Pietje's washed be by Jan

It is remarkable that these nominalized infinitives do not seem to license their internal argument as a genitive subject. This is a general phenomenon, which also extends to the internal argument subjects of unaccusatives, as is shown in (45).
(45) a Het ongelukkig vallen van/*door Jan op zijn stuitje was de oorzaak zijn blindheid
The unfortunate falling of/*by Jan on his tailbone was the cause of his blindness

b ?Jans ongelukkig vallen op zijn stuitje was de oorzaak zijn blindheid
?Jan’s unfortunate falling on his tailbone was the cause of his blindness

c Het bewust geplande vallen van/door Jan op de vloer (in zijn beroep als clown) heeft hem veel blauwe plekken bezorgd
The consciously planned falling of/by Jan on the floor (in his profession as clown) has him many blue spots given
‘The consciously planned falling on the floor of/by Jan (in his profession as clown) has given him many bruises’

d Jans bewust geplande vallen op de vloer (in zijn beroep als clown) heeft hem veel blauwe plekken bezorgd
Jan’s consciously planned falling on the floor (in his profession as clown) has him many blue spots given
‘Jan’s consciously planned falling on the floor (in his profession as clown) has given him many bruises’

Although the example in (45b) is less unacceptable than the examples in (44c), both the unaccusative and the passive examples suggest that the prenominal genitive position of nominalized infinitives requires some agentivity on the part of the genitive argument, i.e. they license external arguments more easily than internal arguments.

In this respect the nominalized infinitives differ from deverbal nouns, because the latter allow either external or internal arguments to be realized as the genitive subject of the DP, as illustrated in (46) and (47).

(46) a the doctor’s examination of John
      b the patient’s examination by the doctor
      c the examination of John by the doctor

(47) a dr. Weismans operatie van patient Jansen
      dr. Weisman’s operation of patient Jansen
      b patient Jansens operatie door dr. Weisman
      patient Jansen’s operation by dr. Weisman
      c dr. Weismans opereren van patient Jansen
      dr. Weisman’s operating on patient Jansen
4.6. The status of English *let/have

4.6.1. Introduction

In this section we compare the status of English *let/have to the status of Dutch laten. For the latter I have argued that it behaves as a lexical verb with two different argument structures, a monotransitive and a ditransitive one. In this section I show that the argument structure of English *let/have can be argued to be the same as that of the Dutch verb laten. Morphological evidence for an auxiliary status status of *let/have is very weak, because, although *let has no different forms for present and past tense and participle, it does distinguish the third person singular of the present tense from the other persons by an -s ending. Unlike modals, but like auxiliaries and lexical verbs, *let can be used in present and past tenses. The fact that the morphological forms of present and past tenses are identical for *let is not indicative of either a lexical or auxiliary status, because other
lexical verbs like *cut and *hit show the same weak morphological differences. Moreover, auxiliaries like *have and *be clearly distinguish the morphological forms of present and past tenses. I conclude that both permissive *let and causative *have function as lexical verbs, because they both select an argument (permitting authority or causer) in addition to the arguments selected by the embedded predicates. In this section, we consider the argument structure of both these verbs. It is argued that both *let and *have at least have a monotransitive occurrence, in which the embedded subject is assigned structural accusative Case by the matrix verb, but that there are also arguments for a ditransitive analysis of some occurrences of *let and *have, namely in those cases where the accusative DP cannot be passivised to matrix nominative position. Finally it is argued that English and Dutch causative/permissive constructions only differ in one respect, namely the absence or presence of an infinitival ending for the embedded verb. It is this difference which I take to be the cause of the fact that Dutch can, but English cannot license an uncontrolled empty subject in the embedded infinitival clause.

4.6.2. Monotransitive and ditransitive *let and *have

As we saw in section 4.2, English *let does not select a single nominal object, unlike *laten and *have. Compare the examples in (48).

(48) a Jan liet een boer
    b *John let a burp
    c John burped
    d John has a car

Although the English construction in (48d) is not a causative use of *have, it shows that this verb may select an object of its own, in the same way as Dutch *laten may. In spite of the fact that the English verb *let does not select an object of its own, it may, however, assign structural accusative Case, as is shown in (49).

(49) a His friends all let him down
    b He was let down by all his friends
    c John let Pete in on the secret plan
    d Pete was let in on the secret plan
    e The teacher let us off our homework because of the concert
    f We have been let off our homework because of the concert
In these examples, the accusative subjects of the non-verbal Small Clauses are promoted to matrix nominative subject position under matrix passivization. If we next consider the lexical verb have, however, it is problematic to assume that this verb also assigns structural accusative Case, since both possessive and causative uses of have disallow passivization, as illustrated in (50).

(50) a  John has a car  
b  *A/*The car was had by John  
c  John had Mary wash the car

The striking fact about these examples is that, although have may select its own object, this object cannot become a matrix subject, regardless of its status as the direct object of have or—what seems to be—the subject of the embedded clause. Moreover, although let in (49) was shown to assign structural accusative Case, in (51b) it cannot be passivized.

(51) a  *Mary/*She was had wash the car  
b  *Mary/*She was let wash the car

The fact that in these constructions the accusative DP cannot be passivized to matrix nominative position suggests that the accusative DP is not assigned structural Case, because passivization is a diagnostic for structural accusative Case-assignment.\(^{16}\) If this is

\(^{16}\text{Cf. Den Dikken (1992; 1995), Hoekstra (1994), Déchaine, Hoekstra & Rooryck (1994) for an analysis in which have is decomposed as ‘be+preposition’. In these analyses the preposition has been incorporated into be so that the prepositional object becomes a derived subject. A Dutch example of this is given in (i).}

\(i\)  
a  Jan heeft een auto  
Jan has a car  
b  De auto is van Jan  
The car is of Jan  
'it's John's car'

In a decomposition analysis, hebben (have) in (i.a) is derived from the unaccusative construction zijn (be) in (i.b). Abstracting away from the definiteness effect, which is also involved in this process, it is concluded that the object in (i.a) is a derived object, so that it does not receive structural accusative Case. If it is not assigned structural Case, the object cannot be promoted to nominative position by the structural movement operation of passivization. Although the syntactic derivation
correct, these constructions are exceptional for English, because English generally assigns structural Case to all direct objects, including the first object in a double object construction. The evidence for structural Case assignment to objects in first position of double object constructions comes from the fact that this object can undergo syntactic A-movement to nominative position under passivization, as illustrated in (52).

(52) a  She gave a book to him
b  She gave him a book
c  He was given a book (by her)

In other Germanic languages like Dutch and German, however, it is generally the case that indirect objects have inherent Case, regardless of their structural surface position. The fact that the indirect object in these languages cannot undergo structural A-movement to nominative position is generally considered proof of its status as a DP with inherent Case. Compare the examples in (53).

(53) a  Marie gaf een boek aan hem
Mary gave a book to him
b  Marie gaf hem een boek
Mary gave him a book
c  (Aan) hem/*Hij werd een boek gegeven
(To) him/*He was a book given

The (c) example shows that the indirect object cannot become a

is not transparently reflected in the morphological shape of the two related verbs *hebben (have) and zijn (be), it is clear that they have the same argument structure, and only differ in syntactic realization of these arguments.

Similarly, it may be suggested that *laten (let/have) is related to the deontic modals *mogen (may) and *moeten (must), since in Dutch deontic modals can express the deontic authority overtly by way of the preposition *van. Compare the examples in (ii).

ii  a  Jan mag/moet [de auto wassen] van Piet
Jan may/must [the car wash] of Piet
   b  Piet laat Jan [de auto wassen]
   Piet lets Jan [the car wash]

The deontic modals and the permissive/causative verb appear to have the same argument structures, consisting of an eventive Theme (*wash the car), a Deontic Authority (*Piet) and a Goal argument (*Jan). The modal and causative verbs each project their arguments to different syntactic positions. In chapter 6, we will discuss the relation between deontic modals and *laten and the effect of deontic modality on control relations in more detail.
nominative subject.
As the English *let/have*-constructions with an embedded transitive verb in (50) do not allow A-movement of the accusative DP to nominative position, either, I suggest that constructions like the one in (50c) are idiomatic expressions, historically related to a Germanic ditransitive construction, the indirect object of which has inherent Case.

4.6.3. Ditransitive *let/have* and object control

The analysis of English *let/have* as ditransitive constructions with a causer/permitter subject, a clausal direct object and a nominal indirect object raises two questions. First, why does the indirect object never occur as a PP? And second, why is it impossible for the indirect object to remain implicit?

With respect to the first question, I adopt the above suggestion and propose that the *let/have* constructions with a transitive SC-complement are frozen ditransitive expressions, in which the infinitival clause is invariably preceded by an indirect object with inherent Case. Although (in)direct objects of ditransitive constructions with to-infinitival complement clauses do not have inherent Case, these constructions show the same fixed word order. Whereas verbs like *tell* and *promise* allow dative alternation in simplex constructions, they require a double object construction for more complex sentences. Consider (54) and (55).

(54) a I won’t tell this story to anyone
    b He told me that story
    c You promised that book to me
    d You promised me that book

(55) a Please, don’t tell anyone [that I failed my driving test]
    b *Please, don’t tell [that I failed my driving test] to anyone
    c I told him [PRO to go home]
    d *I told [PRO to go home] to him
    e You promised me [that I could borrow that book]
    f *You promised [that I could borrow that book] to me
    g You promised me [PRO to read that book]
    h *You promised [PRO to read that book] to me

The examples in (54) and (55) show that ditransitive verbs like *tell* and *promise* only allow dative constructions when both objects are
nominal. When the direct object is clausal, the indirect object is obligatorily realized as an accusative DP, because clauses resist Case and are too ‘heavy’ to appear to the left of DP-objects.

These examples show that the fact that the obligatory double object construction for *let* and *have* with an infinitival complement is not exceptional, but expected if the embedded clause is a full clause containing an empty subject. On the basis of the argument in the previous subsection I will assume that *let* and *have* are ditransitive like Dutch *laten*, so that the embedded clause must contain a PRO subject.

This analysis makes the *let*/*have* constructions object control constructions, similar to the one in (55c). The only difference with a verb like *tell* is that the causative/permission verbs select a bare infinitive rather than a *to*-infinitive. Although we have seen in earlier chapters that English imposes more restrictions on the presence of a lexical controller than Dutch, we have seen that controlled *to*-infinitives in subject position are licensed without a lexically present controller, and that, depending on the selectional properties of the matrix verb, controlled complements clauses with *to*-infinitives may also license PRO with an arbitrary interpretation. The examples in (1) above, however, have shown that infinitival complements to *let*/*have* are ungrammatical when the controlling object is left implicit.

In the previous section, I argued that PRO in Dutch *laten*-constructions is licensed even in the absence of a controlling object, because the infinitival ending *-en* is able to minimally identify the embedded subject as an indefinite external argument. I claim that it is precisely this morphological element which causes the difference between Dutch and English with respect to these constructions. Although English bare infinitives do not have a minimally identifying morpheme, the requirement for a (minimal) $\phi$-feature identification of an empty pronoun nonetheless also applies to the PRO subject of English causative/permission constructions. In the absence of an identifying morpheme for English bare infinitives, the content of PRO must be identified in a different way in order for the empty subject to be licensed. Therefore, the controlling argument must be lexically present as a relatively local and matching antecedent outside the minimal binding domain of PRO. In the previous chapter, definition (74), I defined the minimal binding domain for PRO as ‘the minimal maximal projection (A) containing PRO and the Complete Functional Complex of the head of A’. As PRO is the subject of the embedded clause, the embedded clause is its minimal domain, and for reasons of content-identification it must
be controlled by the object of the matrix clause, since there is no minimal content-identifying morphology.

In conclusion, Dutch and English causative/permissive constructions have the same argument structures and syntactic representations, but differ with respect to infinitival morphology, so that the Dutch laten-constructions license PRO via a minimal content-identification from the infinitival ending –en, whereas the English let/have constructions require the lexical presence of the controlling object as the only way to license the content of PRO.

4.7. Conclusions

In this chapter I have argued for the licensing of a PRO subject in infinitival complement clauses to permissive and causative laten in Dutch. It was argued that the traditional Acl-analysis of the accusative DP in constructions with embedded infinitives containing an external argument cannot be correct, because this analysis implies that the accusative DP is assigned structural Case. I have shown that for laten-constructions with a transitive complement clause this analysis wrongly predicts that the embedded subject can be promoted to matrix nominative position under matrix passivization.

I have also argued that a passive infinitive (PI) analysis of ‘subjectless’ infinitives cannot account for the fact that the embedded subject may sometimes be identified for content by a Goal-like aan-PP, rather than by a passive door-phrase. It has furthermore been shown that the PI-analysis wrongly predicts that the embedded object moves to Acl-subject position. Although the embedded object does move to a higher position in Dutch, it retains its grammatical function of object, and allows the empty subject to be licensed in the embedded clause.

With respect to a complex verb analysis, I concluded that it is incompatible with our initial assumptions of the Projection Principle and the Theta Criterion, in that the external argument of the embedded infinitive cannot simply be left unrepresented. Instead, I proposed that the external argument is licensed as an empty PRO subject.

On the basis of the analysis for controlled non-verbal Small Clauses discussed in the previous chapter, I claimed that the infinitival Small Clauses contain an abstract Tense projection, the head of which licenses the empty subject for structural nominative Case. It was furthermore argued that the infinitival ending –en can minimally identify the embedded PRO subject as an external
argument with arbitrary reference.

It was observed that the PRO subject is always embedded in the infinitival complement clause of ditransitive laten. The second internal argument, i.e. the indirect object, functions as the referential controller of PRO, but need not always be lexically realized in Dutch. The fact that a ditransitive laten construction is grammatical even when the controlling argument remains implicit supports our hypothesis that PRO is an empty pronoun, rather than an anaphor, since anaphors need a lexically realized local antecedent. The pronominal character of PRO is also supported by the fact that the controlling argument, whether lexically realized or not, is outside the minimal binding domain of PRO. The controlling argument is not included in the CFC of the empty subject because it is part of an argument structure selected by a different verbal head with control properties.

It was furthermore argued that both Dutch laten and English let/have allow a ditransitive argument structure, so that both languages license an object control construction when this verb is ditransitive and contains an infinitival complement. I proposed that the difference between the Dutch and English causative/permissive constructions lies in the fact that the infinitival ending -en in Dutch can minimally identify the content of PRO as an external argument with arbitrary interpretation, while the absence of this type of morphology forces the controlling object to be lexical in English. Thus, Dutch laten licenses a PRO with arbitrary interpretation, whereas the English equivalents let and have require a lexical controller.

The conclusion that the empty subject in 'bare' infinitival complements to ditransitive laten is the same empty pronoun as PRO in te/to-infinitival constructions and non-verbal Small Clauses completes the picture of the distribution of PRO, showing that PRO may occur as the empty subject of any clause, provided this clause constitutes an independent binding domain. We saw that in each of these cases PRO is structurally licensed by nominative Case in a SpecHead relation with ±finite Tense. With respect to the content licensing of PRO we saw that there are some differences: in non-verbal SCs PRO always requires a lexical controller, while in infinitival clauses PRO may be licensed without a lexical controller, in the presence of minimal identifying morphology (i.e. te, to, -en, -ing). In non-verbal SCs, there is no content-identifying morpheme, so that control by a lexical argument is the only way for PRO to be content-licensed.
The Interpretation of PRO: Where Syntax and Semantics Meet
5 The Reference of PRO

5.1. Introduction

This chapter deals with the actual reference assigned to PRO. It is rather descriptive in nature and does not present new analyses, but is meant to serve as background information for the discussion in chapter six. The aim of the present chapter is to show that the actual reference of PRO supports the hypothesis that PRO behaves as a pronoun.

The chapter consists of two parts. In the first part a selected set of proposals from the literature is discussed, showing that purely syntactic analyses of local binding and purely semantic analyses of the interpretation of PRO are both inadequate to account for the variety of interpretations of PRO. It is concluded that syntactic and semantic factors must inevitably interact for the determination of the actual reference of PRO, which is expected if the nature of PRO is that of a pronoun.

The second part provides a classification of the various types of control verbs into three main groups, namely, the traditional subject and object control classes and a class of verbs allowing 'varying' control relations. The latter class of control verbs contains verbs which allow uncontrolled PRO, shifts in control relations, split control relations and long distance control. It is the actual control relations of this third class of controlled complements which will be analyzed in more detail in the next chapter. Although pronominal behavior of PRO in subject and adjunct clauses is expected, because these clauses constitute an independent binding domain, I will conclude that the possibility of varying control relations even for controlled complement clauses further supports the claim that PRO is an empty pronoun throughout all its occurrences.
5.2. A selected literature review

5.2.1. Introduction

In this section we discuss various earlier accounts of the reference of PRO. It is shown that these approaches all succeed in accounting for the 'core' cases of control, i.e. those cases in which the control relation between PRO and its controller is unmarked. It is also shown, however, that these analyses generally cannot account for, often equally acceptable, 'non-core' or marked control relations. I argue that the incapability of accounting for non-core control relations is due to the fact that the accounts fail to allow an interaction between lexical properties and syntactic relations, because either the coreference relations allowed within a lexical thematic hierarchy are too rigidly defined, or the nature of PRO as an anaphoric element requires an invariable local binding relation, so that there is no room for shifts in control relations.

In subsection 5.2.2 I discuss the syntactic approaches of predication (Williams 1980), Minimal Distance Principle (Larson 1991) and operator bound PRO (Epstein 1984). In subsection 5.2.3 I consider the lexical approaches of Lexical Functional Grammar (Bresnan 1982) and Thematic Identity (Růžička 1983). In subsection 5.2.4 I present the main ideas of the formal semantic approach by Chierchia (1984) and in subsection 5.2.5 two more approaches based lexical properties of control verbs are discussed (Sag & Pollard 1991; Rooryck 1992). In subsection 2.6 I formulate interim conclusions on the basis of the literature discussion.

5.2.2. Syntactic approaches to control

5.2.2.1. Obligatory and non-obligatory control

The syntactic approach of Williams (1980) divides the cases of control roughly into two types of constructions. In this view one type of control constructions, namely obligatory control (OC), involves syntactic relations between the controlled clause and the controlling argument along the lines of a subject-predicate relation. In these control relations the controller must be lexically present and locally c-command PRO. The other type of control constructions, namely non-obligatory control (NOC), do not require a controller
to be lexically present, or if it is, it is not required to be in a local c-command relation to the controlled clause. These cases of control do not constitute a subject-predicate relation.

For Williams (1980) control is not an interpretational relation between PRO and an antecedent, but rather a relation between an entire clause with an open variable in subject position (i.e. PRO) and a controlling higher argument, to which that clause is related. The control relation is a local syntactic c-command relation for OC, and an arbitrary relation for NOC.

As in some OC constructions there is more than one potential controlling argument, the actual controller in these cases is argued to be determined by lexical properties of the matrix predicate when the controlled clause is a selected complement (i.e. thematic control), and by grammatical relations when the controlled clause is an adjunct (i.e. grammatical control). The controlled clauses are coindexed with their controllers, as illustrated in (1).

(1)  
   a  John, promised Bill [PRO to leave],
   b  John persuaded Bill, [PRO to leave],
   c  John ate the meat, [PRO raw],
   d  John; ate the meat [PRO naked],

Williams assumes that control from the Theme argument is the least marked option, as in (1b), but he allows for an individual lexical property of agent control, as with promise in (1a). Adjunct control depends on the level of attachment, so that in (1c), the AP must be adjoined at the VP level, resulting in obligatory object control, while in (1d) the AP must be adjoined at the IP level, resulting in obligatory subject control.

NOC clauses, on the other hand, are not coindexed with an antecedent NP, but marked arb as in (2a). This arb may, however, be rewritten as a referential index, so that the NOC control clause may be coindexed with a lexical controller, as in (2b-d).

(2)  
   a  [PRO to leave],arb, is nice
   b  [PRO to leave], is nice for Bill,
   c  [PRO to leave], would be my; pleasure
   d  It is important to me, [PRO to leave], (Williams 1980)

The analysis of PRO as an open variable, however, is a semantic rather than a syntactic characterization of the empty subject in (2). If PRO is also syntactically to be represented as a variable, we would expect it to be bound to a(n empty) operator in SpecCP. When we
consider the finite equivalents of these sentences in (3), however, we must paraphrase the PRO subject by a lexical pronoun, which is not obviously linked to an operator, as is the case for (infinitival) relative constructions.

(3) a It would be nice [if one could leave immediately]
b It would be nice for Bill [if he could leave now]
c It would be my pleasure [if I could to leave now]
d It is important to me [that I leave immediately]

The fact that these examples are equivalent to the control construction in (2) supports the idea that PRO is basically a pronoun.

The idea that lexical properties of the matrix verb alone determine the actual control relation for complement clauses wrongly predicts that instances of control shift, as in (4), are ungrammatical, since the only difference with the core cases of control is the mood or modal interpretation of the embedded clause.

(4) a John, promised Bill [PRO to leave]
b John persuaded Bill, [PRO to leave]
c John, promised Bill, [PRO to be allowed to leave]
d John, persuaded Bill, [PRO to be allowed to leave]

Moreover, the claim that the level of attachment always determines the actual control relations for controlled adjunct clauses is not always borne out. Consider (5).

(5) a The waiter served the guests [after PRO having cleared the table]
b The guests were served (by the waiter) [after PRO having asked for drinks]
c Joan hired Fred, [PRO to fire Bill]

Although the temporal adjunct clauses in (5a,b) show invariable control by the surface subject, this is not the case for the purpose adjunct in (5c). This suggests that the syntactic level of attachment does not automatically explain the nature of all adjunct control relations, either, since purpose clauses are attached at the VP-level. In section 5.3 it is argued that for an adequate analysis of control relations, the argument structure of the embedded clause and syntactic properties of the embedded arguments should be taken into account as well.
5.2.2.2. The Minimal Distance Principle (MDP)

With respect to obligatory control relations, various other syntactic proposals have been made (cf. Rosenbaum 1967, 1970; Larson 1991). Rosenbaum (1967) proposes an 'erasure principle' by which the argument syntactically closest to the controlled clause should always be the controller. This nicely accounts for the core control relations of verbs like *ask* and *persuade*, where the object is the closer NP.

As noted by Larson (1991), however, such a Minimal Distance Principle (MDP) for controllerhood cannot be operational at surface structure, because this leads to wrong predictions for verbs like *promise*. Therefore, Larson (1991) proposes that the MDP applies at Deep Structure, the level of syntax where lexical material is directly mapped onto the syntax.

(6) **Minimal Distance Principle (MDP)**

An infinitive complement of a predicate $P$ selects as its controller the minimal c-commanding noun phrase in the functional complex of $P$. (Larson 1991: 115)

In his case-study of *promise*, Larson (1991) argues that the control verb *promise* should be analyzed in the same way as the ditransitive verb *promise*, which selects a direct and an indirect object, or a double object structure, as in (7).

(7) a John promised Mary a sports car  
b John promised a sports car to Mary

By analogy, Larson suggests that the underlying structure of (8a) is as in (8b).

(8) a John promised Mary to return home by 5:00 p.m.  
b John promised [to return home by 5:00 p.m.] [to Mary]

The structure in (8b) is based on Larson's (1988) analysis of double object constructions, where it is assumed that these are derived from dative constructions, as represented in (9).
In the underlying structure, the embedded clause is the direct complement and the addressee is the indirect object of the verb *promise*, so that at D-structure, the subject is the only available c-commanding antecedent for PRO.

Larson (1991) can also account for the object control constructions of verbs like *force* and *persuade*, since he claims that the D-structures of these verbs are the same as their S-structures, so that at D-structure, the object NP is the nearest c-commanding NP for the embedded clause.

(10) a. John persuaded Mary to return home by 5:00 p.m.
    b. John forced Mary to return home by 5:00 p.m.

Although a syntactic mapping of lexical argument structure onto D-structure is relatively uncontroversial, the idea that (anaphoric) control relations are determined by applying the MDP at this level of syntactic representation is not easy to maintain.\(^1\) Although we saw above that the MDP cannot always be applied at S-structure, because this predicts the wrong control relations for *promise* (and similar verbs like *threaten*), applying the MDP always at DS leads to exactly the reverse problem for the Dutch verb *vragen* (=*ask*), as shown in (11) and (12).

(11) Jan vroeg (aan) Marie, [om PRO; te vertrekken]
    Jan asked (to) Marie [for PRO; to leave]

---

\(^1\)Belletti & Rizzi (1988) argue on the basis of anaphoric relations in psych-verb constructions that binding may sometimes be established at DS or LF rather than at SS. As the present thesis does not argue for an anaphoric binding analysis of PRO, but rather for a pronominal reference relation for PRO, I will not consider this proposal in detail.
The sentence in (11) is the surface structure of the control verb *vragen*. This verb may, however, also take two non-verbal objects, as in (12).

(12) a  Jan vroeg [Marie] [om een koekje]  
        Jan asked [Marie] [for a biscuit]  

   b  Jan vroeg [een koekje] [aan Marie]  
        Jan asked [a biscuit] [to Marie]

The sentence in (12b) suggests that *Marie* may well be the underlying indirect object, in which case the application of the MDP at D-structure would predict subject control for *ask* in (11), because the underlying structure is as in (13).

(13)  Jan vroeg [om PRO te vertrekken] *aan Marie*  
        Jan asked [for PRO to leave] to Marie

The core control relation for *vragen*, however, is an (in)direct object control relation, as indicated in (11) by coindexation. Moreover, if control is always a D-structure MDP relation, the examples of controlled adjunct clauses, as in (5), remain unexplained, because these are not selected at DS, so that they require an S-structure control relation.

Therefore, it must be concluded that if we want to formulate a general theory of control which can cover the various control relations considered above, neither versions of the MDP are adequate, since it cannot be generally applied at D-structure, nor at S-structure. An SS-application of the MDP will always make the wrong predictions for verbs that show subject control in the presence of a closer c-commanding argument (e.g. *promise*), while a DS-application of the MDP will always make the wrong predictions for object control verbs where the object does not c-command the controlled clause at DS (e.g. Dutch *vragen*). In addition, an overall DS-application of the MDP fails cannot account for the control of adjunct clauses, since adjuncts are not selected at DS.

Moreover, as the syntactic MDP in (6) requires a control relation with a c-commanding DP, it cannot account for control by implicit arguments or arguments embedded within a PP, as in the case of the examples in (14).

(14) a  It would be nice for Kate, [PRO, to win the first prize]  

   b  It is always nice (for Kate) [PRO to win the first prize]
c It would be better for the environment [PRO_{arb} to produce less toxic waste]

Finally, if the MDP applies at DS, no variation in core control relations is expected, contrary to fact, as was shown by the examples in in (4), and is further supported by the 'varying' control relations allowed for the complement clause of the communication verbs in (15).

(15) a John; signaled Mary; [PRO_{i/y/i+1} to leave]
   b John; shouted to Mary; [PRO_{i/y/i+1} to leave]

Although one of the matrix arguments is always involved in controlling PRO it cannot be predicted on syntactic grounds whether the controller is the subject or the (prepositional) object, or both. Therefore, the semantic interpretation of the embedded clause must be taken into account for an adequate analysis of the possible control relations. The fact that these control relations may vary in the way indicated in (15), allowing even split control, provides strong support for the characterization of PRO as a pronoun.

5.2.2.3. Operator-bound PRO

While the cases of NOC and arbitrary control have not received a satisfactory analysis from either Williams (1980) or Larson (1991), Epstein (1984) sets out to explain exactly those types of control constructions. He argues that the empty subject in constructions like (16) is always controlled by the matrix Beneficiary object, even when this remains implicit, in which case it is represented as an object pro.

(16) a It is fun for Lucy [ PRO; to play baseball]
   b It is fun pro_{arb} [ PRO_{arb} to play baseball]
   c ∀, it is fun pro; [PRO; to play baseball]

As can be seen from the representation in (16c), Epstein (1984) assumes that there is a generic operator in the matrix SpecCP, by which pro is bound, and as PRO is controlled by pro, it also receives a generic interpretation.

It may, however, be objected that in this analysis the generic interpretation of PRO also occurs in sentences where the Beneficiary object cannot function as a controller for PRO (cf. Van Haafsten 1991), as in (17a).
(17) a  It would be better for the environment [PRO to produce less toxic waste]
     b  (Op) It would be better for the environment [CP (Op) [TP PRO: to produce less toxic waste]]

In this example, the Beneficiary argument the environment is not compatible with the Agentive properties of the embedded subject, so that it cannot function as controller for PRO, and PRO must receive its generic interpretation in a different way.

It was proposed by Lebeaux (1984), that PRO is A-bar (A'-) bound to the matrix generic operator in SpecCP, without first having to bind to an argument position. Alternatively, it has been proposed by Rooryck (1992) that this type of generic reference of PRO should be analyzed as an operator-variable relation within the embedded clause itself, so that the embedded SpecCP contains an empty operator, in the same way as in infinitival relatives.

Although these are possible analyses, we argued in chapters 2 and 3 that PRO need not be operator-bound in order to be syntactically licensed, because as an empty pronoun PRO is sufficiently licensed by Tense and infinitival morphology. We furthermore suggested that PRO may be operator bound for reasons of interpretation, but that an arbitrary interpretation can be licensed by minimal content-identifying morphology. Consider the finite constructions in (18).

(18) a  It would be better for the environment [CP if [TP one produced less toxic waste]
     b  It would be better [CP if [TP one produced less toxic waste]
     c  It would be better for Mary: [CP if [TP she/it produced less toxic waste]
     d  How would it be better for the environment [CP if [TP one produced less toxic waste]
     e  When would it be better for the environment [CP [TP PRO to produce less toxic waste]

The example in (18c) shows that a lexical pronominal subject can also have free reference, so that in this case it is not operator-bound. The examples in (18d,e) furthermore shows that when the potentially controlling argument is not suited to function as the controller, the pronominal embedded subject cannot receive its arbitrary interpretation from a generic operator in the matrix SpecCP, since this position contains a wh-operator. From these examples I will conclude that only when the reference of the
embedded subject and the potentially controlling matrix argument is the same, the embedded subject may be bound to an empty operator in the embedded SpecCP. If PRO were an anaphor, it would be surprising that it can be licensed by operator-binding at all, since anaphors may not be (locally) bound to A'-elements, because this would violate condition A of the binding theory. As operator-binding for interpretational reasons is applicable to both lexical and empty pronouns, it is compatible with our claim that PRO is a pronoun.

5.2.3. The interpretation of PRO as a lexical property of control verbs

5.2.3.1. A Lexical Functional Grammar approach

Within the framework of LFG, it is claimed that PRO is not syntactically represented, but considered to be a semantically represented empty pronoun. Like Williams (1980), Bresnan (1982) distinguishes between predicative control and non-predicative control. Within the first group she makes a distinction between cases of ‘lexical functional control’, where the controlled clause is a complement, and ‘constructional functional control’, where the controlled clause is an adjunct (cf. Williams’s ‘thematic’ and ‘grammatical’ control). Her analysis of controlled complements is, however, more explicit than Williams’s with respect to the thematic role of the lexically determined controllers.

Bresnan (1982) argues that the choice of controller for complement clauses is predictable from the hierarchy of grammatical functions, as given in (19).

(19) OBJ2 > OBJ > SUBJ

Here, control by the subject is most marked, while control by the secondary object is least marked, and all oblique arguments, including indirect object PPs, can only serve as controllers in non-predicative control environments. Unfortunately, this hierarchy of grammatical functions must allow for exceptions of subject control verbs like promise, discussed above, which have a syntactically represented (in)direct object, but do not select this object as a controller, as was illustrated in (4a).
(4) a John promised Bill [PRO to leave]

Second, the ‘constructional functional control’ analysis of controlled adjuncts is not unproblematic either. The analysis predicts that the controller is always lexically present and that it always locally c-commands PRO, as in Williams’s (1980) account. The fact that an implicit Agent may also control PRO in purpose adjuncts is thus wrongly predicted to be ungrammatical, as illustrated in (20).²

(20) The ship was sunk (by the crew), [PRO to collect the insurance money]

In these cases it is an underlying subject, rather than a lexically realized subject which controls PRO.

A third class of control relations distinguished by Bresnan (1982) can be compared to Williams’s (1980) cases of NOC, but Bresnan refers to them as cases of ‘anaphoric control’, where the term ‘anaphoric’ should not be confused with the binding theoretic sense of anaphoric, because for Bresnan ‘anaphors’ do not require a local syntactic binding relation; rather they are pronominal elements which find their actual reference in the (non-)linguistic context. Controlled clauses selected by communication verbs like shout and signal, as illustrated in (15) above, fall within this class of ‘anaphoric control’. Bresnan’s (1982) examples of this anaphoric use of PRO in (21) have discourse reference, because they are interpreted by a DP in a higher clause.

(21) a Mary was happy and excited. PRO to have involved herself in the group was a risky action. But it was proving that she could change her life.
    b Tom felt sheepish. PRO pinching those elephants was foolish. He shouldn’t have done it.
    c She sighed and looked around the empty room. It was unclear what PRO to do with herself now that Molly was gone.

The discourse reference in (22) is even more striking, because PRO is interpreted by an entity two sentences higher in the paragraph, while there are potential antecedents in the intervening sentence and in the matrix clause itself.

²For more examples of this type, see Roeper (1987).
(22) Frankly, I’m worried about Mary. What has she gotten herself into? Don’t get me wrong. I think it was fine PRO to join the group. But PRO getting herself photographed with those starving wolves was dangerous.

These examples of PRO with an interpretation in the wider context provide support for the characterization of PRO as an empty pronoun. Although Bresnan (1982) assumes that PRO is a pronoun throughout, she nonetheless distinguishes between two basically different types of control, namely grammatical function control and discourse related anaphoric control.

Although it may be suggested that the ‘anaphoric’ control in (21) and (22) can be reduced to control from a lexically selected implicit argument, the fact that these arguments are PPs, when lexically realized, shows that they cannot be structurally licensed as empty DPs, since they are inherently Case marked. Consider the examples in (23).

(23) a ... PRO to have involved herself in the group was a risky action of Mary...
   b ... PRO pinching those elephants was foolish of Tom...
   c ... It was unclear to her what PRO to do with herself ...
   d ... I think it was fine for Mary (PRO) to join the group...
   e ... But PRO getting herself photographed ... was dangerous for Mary.

Even though these examples seem to argue strongly in favor of implicit argument control for PRO in these subject clauses, the characterization of PRO as a syntactically licensed pronoun can still be maintained, because the implicit arguments, if syntactically represented, are outside the embedded clause, i.e. outside the local domain in which PRO may not be bound. Moreover, the lexically represented controlling argument is embedded within a preposition, so that, strictly speaking, it cannot c-command PRO, and a local structural relation between PRO and its controller is not licensed (cf.

---

3Although the implicit arguments in (21) and (22) are not syntactically licensed in the overt syntax, because these elements are not assigned structural Case, it may be argued that, for interpretational reasons, they are licensed at LF. This assumption, however, violates the Projection Principle, since lexically selected material is no longer represented at all syntactic levels of representation, but only the interpretational level. This problem may be solved if the implicit arguments are syntactically licensed by a null preposition or inherent Case (cf. Rizzi 1986).
the discussion in chapter 2, section 2.2).

A final problem for Bresnan's (1982) analysis is that control shifts like those in (4) above are not expected, because controlled complement clauses are supposed to be subject to the thematic hierarchy for control relations in (19). Although pronouns, whether lexical or empty, are subject to semantic relations for their referential content, this subsection has shown that these relations cannot be defined in terms of a rigid thematic hierarchy. The next section also shows that the semantic relations cannot be restricted to lexical properties of the matrix verb, only.

5.2.3.2. A Thematic Identity approach

In his account of the reference for PRO, Růžička (1983) proposes that there are two conditions identifying two different types of control relations, namely, a Thematic Identity Condition (TIC) and a Thematic Distinctness Condition (TDC). He claims that each matrix control verb is lexically marked for one of these two conditions. Thus, a verb like promise is a [+TI] verb, because the matrix Agent controls the embedded Agent, and a verb like persuade is a [+TD] verb, because the matrix Patient controls the embedded Agent, as in (24).

(24) a John_{AG} promised Mary_{PA} [PRO_{AG} to leave early]  [+TI]  
b John_{AG} persuaded Mary_{PA} [PRO_{AG} to leave early]  [+TD]

The TIC and TDC account was proposed as an alternative to Chomsky's (1981) proposal which identifies the the lexical properties of control verbs as [±underlying subject control]. This approach cannot explain the grammaticality of 'double passive' constructions as in (25), because promise has the lexical property of [±underlying subject control] and Mary is the underlying object.

(25) Mary_{PA} was promised [PRO_{PA} to be allowed to leave early]

The TIC/TDC approach is able to account for the grammaticality of (25), since promise is a [+TI] verb, so that the Goal-Goal control relation is correctly predicted to be grammatical.

As noted by Růžička himself, the TIC/TDC approach is, however, problematic for verbs like try, want and like, since these always allow their surface subject (Agent or Experiencer) to control PRO, whether the latter is an Agent, as in (26a,c) or a Patient, as in
(26b,d).

(26)  
   a  John_{AG} tried [PRO_{AG} to leave early]  
   b  John_{AG} tried [PRO_{PA} to be elected]  
   c  Pete_{EX} likes [PRO_{AG} to cycle to his work]  
   d  Pete_{EX} doesn’t like [PRO_{PA} to be hit]  
   e  Pete_{EX} doesn’t like [PRO_{EX} to feel ill]  

As this approach is based on the type of thematic relation between
the controller and the controlled, rather than (underlying) grammat
ical functions of the controller alone, Růžička (1983) has to
assume that these verbs are lexically marked with respect to their
control properties.

Thus, although the Thematic Relations approach solves the
problem of ‘double passivization’ with verbs like promise, which the
traditional LGB-approach cannot explain, it also evokes new
problems, which were accounted for by the older analysis. Both
accounts have advantages and disadvantages, but neither can provide
an overall account of controlled complements. Moreover, neither of
these accounts can be applied to controlled subject or adjunct
clauses, since in these constructions the matrix predicate does not
impose selectional restrictions on the controlled clause.

5.2.4.  Control and formal semantics

Working within the framework of truth conditional semantics,
Chierchia (1984) claims that lexical properties of control predicates
are not sufficient to account for all types of control relations, and he
proposes that the ‘modal frames’ of each control verb play an
important role in the actual interpretation of PRO. A modal frame
(cf. Kratzer 1981, 1991) contains information about the modality (i.e.
necessity or possibility) and ‘conversational background’ of the
matrix verb. Chierchia’s definitions of latter are given in (27).

(27)  
   a  deontic conversational backgrounds:
      functions that assign to each context of use a set of
      propositions p such that p is commanded by somebody to
      somebody else.  
   b  teleological conversational backgrounds:
      functions that assign to each context of use a set of
      propositions p such that p is somebody’s aim.
THE REFERENCE OF PRO

(Chierchia 1984: 315 (39), my italics, MEP)

Chierchia (1984) proposes that the interpretation of PRO is determined via an entailment relation in possible world semantics, of the type in (28b,d) for the sentences in (28a,c).

(28)  
\[\text{If a} \quad \text{John promised Mary [PRO to leave early]}\]
\[\text{then in some possible world,} \quad \text{(modality)}\]
\[\text{b} \quad \text{John leaves early} \quad \text{(entailment)}\]

\[\text{If c} \quad \text{John forced Mary [PRO to leave early]}\]
\[\text{then of necessity,} \quad \text{(modality)}\]
\[\text{d} \quad \text{Mary left early} \quad \text{(entailment)}\]

Here, (28a/b) is an example of a teleological conversational background with the modal relation of possibility, and (28c/d) is an example of deontic conversational background with the modal relation of necessity. For both cases, Chierchia claims that the controller is determined by his control principle.

In the final formulation of Chierchia’s control principle (1984: 347), the potential candidates for controllerhood are restricted to those co-arguments of the controlled clause which participate in the modal frame and which are semantically f-adjacent co-arguments of the controlled clause, independent of syntactic operations like passivization and detransitivization. Arguments are f-adjacent if their semantic functions are adjacent and no other argument intervenes (cf. Chierchia 1984: 343). If more than one potential controller is present (i.e. if two co-arguments are adjacent to the controlled clause) the actual controller is ultimately determined via the application of a lexical redundancy rule (Chierchia 1984: 333), which generally follows the thematic ($\theta$)-hierarchy in (29), but individual verbs (like promise) may be lexically specified for a different thematic role as controller.

(29)  \[\text{Theme} > \text{Goal} > \text{Source} > \text{Beneficiary} > \ldots > \theta'\]
Here, $\theta'$ is the most marked option for a controller, and refers to an entity that does not bear a $\theta$-role in relation to the matrix predicate. As this thematic hierarchy is formulated in addition to and independently of the modal frame, it must be concluded that the modal frame alone cannot always determine the actual choice of controller. Instead, a lexical rule determines the controller, with the exception, however, of some marked cases like *promise*. In effect, the lexical rule in (29) is similar to the hierarchy of grammatical functions as proposed by Bresnan (1982), and it has the same shortcomings.

The lexical rule of thematic hierarchy wrongly predicts that shifts in control relations and split-control relations do not occur. Finally, the control principle of Chierchia (1984) is only meant to account for controlled complement clauses, so that control relations with controlled adjunct or subject clauses receive no explanation.

5.2.5. More on lexical properties of control verbs

5.2.5.1. Introduction

In this subsection we discuss two approaches to control relations, which are based on the lexical properties of control verbs. The two analyses are, however, fundamentally different, because one approach aims to define three distinct classes of control verbs on the basis of prototypical semantic roles for the controlling argument (Sag & Pollard, S&P 1991), while the other approach aims to define each individual control verb in such a way that the lexical decomposition of the aspectual (sub)event structure of these verbs automatically points out the designated controller (Rooryck 1992). What these two approaches have in common, though, is that it is the semantics of the matrix verb which ultimately decides the control relation. As a consequence, the phenomenon of control shift under influence of the semantics of the embedded clause remains problematic for these approaches.

5.2.5.2. A lexical relations approach

Within the framework of Head-driven Phrase Structure Grammar (HPSG), Sag & Pollard (1991) develop a lexical account of control relations. They argue that verbs which select controlled complement
clauses can be classified in three lexical types, namely control verbs of influence, commitment and orientation (S&H 1991: 66). Examples of influence type control verbs are order, permit, allow and force; of commitment type verbs are promise, try, decline and threaten; and of orientation type verbs are want, expect, need, hope and hate. Depending on which of the three relations (R) distinguished above is involved in a complement control construction, the unexpressed subject is interpreted as in (30).

(30) In a complement control construction with relation R, the controller for PRO is
a the influenced participant, if R is of the influence type
b the committer participant, if R is of the commitment type
c the experiencer participant, if R is of the orientation type

(S&H 1991: 66)

S&H argue that this classification of control is not restricted to account for complement clauses to verbs, but is also applicable to complements of nominal expressions. In the latter case the syntactic realization of the controller is not relevant, but its semantic role remains constant, as exemplified in (31).

(31) a Sandy promised Tracey to leave the party early
b Sandy’s promise to Tracey to leave the party early caused quite an uproar
c The promise by Sandy to leave the party early caused quite an uproar
d The promise that Sandy made, to leave the party early, caused quite an uproar
e Sandy made Tracey a promise. It was to leave the party early
f The promise to leave the party early, which Kim knew would be immediately forthcoming from Sandy, was going to cause quite an uproar

(S&H 64, 68)

In all these examples it is the committer participant which controls the unexpressed subject of the infinitive. S&H (1991) assume that the controlled unexpressed subject is a reflexive anaphor (1991: 81). The local domain for reflexive anaphors is defined in such a way that it includes matrix arguments as controllers for PRO in complement and subject clauses. Anaphoric relations are defined in terms of obliqueness-command, in the sense that a local antecedent of an
anaphor must be less oblique than the anaphor, or the subcategorized constituent in which the anaphor is embedded. By the latter clause, the anaphoric domain of PRO includes the matrix clause.

By this approach, objects are more oblique than subjects, and DP objects are less oblique than PPs and clausal arguments (S&G 1991: 72). As both subjects and complements are on the SUBCAT list, and clauses are more oblique than any other argument, PRO within a subject or complement clause may always be controlled by a higher argument. It must be noted, however, that controlled adjunct clauses cannot be argued to contain an anaphoric PRO, so that at least for these constructions pronominal PRO must also be allowed. Controlled adjunct clauses are not discussed in any detail.

In spite of the syntactic mechanism for the interpretation of anaphors, including PRO, the lexically determined control relations defined in (30) are indispensable, since the anaphoric o-command relations often predict the wrong control relations, for instance, in the case of ask and persuade, since by definition an object is more oblique than a subject, so that these verbs are wrongly predicted to show subject control. If the semantic relations take precedence over syntactic ones, and ask and persuade belong to the INFLUENCE class, then the object control relations are correctly predicted.

Unfortunately, this type of lexical relations approach cannot immediately account for instances of control shift, as illustrated in (32).

(32) a John promised Bill [PRO\textsubscript{i} to leave]
b John asked Bill, [PRO\textsubscript{i} to leave]
c John promised Bill, [PRO\textsubscript{j,\#1} to be allowed to leave]
d John asked Bill, [PRO\textsubscript{j,\#1} to be allowed to leave early]

As promise is classified as a COMMITMENT type of verb, we wrongly expect that in (32) the ‘committor’ argument, i.e. the subject, controls PRO. Even if we take into account that the embedded verb allow is also a control verb, but rather of the INFLUENCE type, the preference for object control cannot be explained, since the passivization of allow only predicts that the underlying object of allow controls the PRO subject of leave, it does not predict a shift in the higher control relations.

In order to solve this problem, S&G (1991: 82-92) propose that the control shift constructions in (32c,d) can be explained if the embedded clauses are analyzed as a case of ‘causative coercion’, where the implicit external argument functions as the ‘interpolated
causer', and is itself a reflexive element with anaphoric properties. Being anaphoric, the implicit external argument is controlled by the 'committer' of promise and the 'influenced' of ask, so that control must shift.

However, this explanation predicts that control shift is obligatory, since the implicit external argument is analyzed as a reflexive, so that it requires a syntactic antecedent. The examples in (32c,d), however, show that control shift is optional.

5.2.5.3. Controllers as arguments of unrealized subevents

In his analysis of control relations, Rooryck (1992) sets out to motivate control classes of 'exclusive' (subject or object control), 'non-exclusive' (subject and/or object control), 'arbitrary' and 'pronominal' control via a decomposition of the aspectual (sub)event structure of the matrix verb. He assumes that PRO is anaphoric, except in subject and adjunct clauses. Following Stowell (1981, 1982), Rooryck (1992) adopts the view that selectional properties of the matrix verb are syntactically represented in the $C^0$ of the selected clause.

Thus, the [+unrealized] temporal interpretation of the infinitival complement clause is related to the aspectual event structure of the matrix verb, by identification of the unrealized tense via coindexation in the embedded $C^0$. It is claimed that exclusive and non-exclusive control complements are thus identified by coindexation with the aspectual event structure of the matrix verb. It is argued that in these cases, only matrix arguments which are involved in an unrealized subevent are eligible as actual controllers. Examples of exclusive and non-exclusive control are given in (33) to (35).

(33) exclusive control
   a  John$_i$ tried [PRO$_i$ to fix his bike]  (subj. ctrl)
   b  John$_i$ likes [PRO$_i$ to swim]            (subj. ctrl)
   c  John$_i$ forced Mary$_j$ [PRO$_{o/i}$$_j$ to fix his bike] (obj. ctrl)

(34) non-exclusive preferential control
   a  John$_i$ promised Mary$_j$ [PRO$_{o/i}$$_j$ to fix her bike]
   b  John$_i$ promised Mary$_j$ [PRO$_{o/i}$$_j$ to be allowed to fix her bike]
   c  John$_i$ asked Mary$_j$ [PRO$_{o/i}$$_j$ to fix his bike]
   d  John$_i$ asked Mary$_j$ [when PRO$_{o/i}$$_j$ to fix her bike]
(35) *non-exclusive variable control
   a  John\(_i\) suggested to Mary\(_j\) [\(\text{PRO}_{i/j/i+j}\) to go to the movies]
   b  John\(_i\) proposed to Mary\(_j\) [\(\text{PRO}_{i/j/i+j}\) to go to the movies]

The verb *try* in (33a) is a process verb, the subject of which is always involved in a non-punctual subevent of this process, hence naturally qualifies as the controller. The verb *like* in (33b) is a stative verb, all of the subevents of which are non-punctual, so that the subject qualifies as a controller. In (33c) the verb *force* is a ‘transition’ verb, with a subevent involving the subject and object in a ‘forcing’ event, and another subevent involving the object and the infinitival clause. It is claimed that only this latter subevent is relevant to the control relation, and as it does not involve the matrix subject, the matrix object is the exclusive controller.

The verbs in (34) and (35) are all transition verbs, involving both their subject and object in unrealized subevents of the matrix verb. The verbs in (34) are cases of ‘preferential control’, because they have a default subject or object control, which may shift because of embedded passivization. The verbs in (35) are instances of ‘variable control’, since, depending on the pragmatic situation, the subject and/or object may control the embedded subject. It is these cases, which form a challenge for any theory of control. We will come back to these later in this subsection.

Cases of arbitrary control involve controlled (infinitival or gerundive) complements to certain ‘communication’ and ‘association’ verbs, like *discuss* and *associate*. In neither of these cases is the embedded C\(_0\) identified for unrealized temporal properties, because subject clauses are not lexically selected and the complement clauses can both refer to past and future events with respect to the matrix tense (Rooryck 1992: 45), while (non-)exclusively controlled complement clauses cannot refer to past with respect to the matrix tense.

Examples of arbitrary control are given in (36).

(36) a  They\(_i\) discussed [\(\text{PRO}_{i/arb}\) donating money to charity]
   b  John\(_i\) associates [\(\text{PRO}_{i/arb}\) eating lettuce and carrots] with rabbits
   c  They\(_i\) discussed [\(\text{PRO}_{i/arb}\) having drunk too much the night before]
   d  *They\(_i\) tried [\(\text{PRO}_{i/arb}\) having drunk too much the night before]

Arbitrary control constructions may be independently interpreted
without being associated with a higher argument. According to Rooryck (1992) the difference in grammaticality between (36c) and (36d) shows that there is no selectional restriction with respect to unrealized tense for the embedded clause in (36c).

Finally, pronominal control occurs in sentential subjects and controlled adjuncts, since these clauses are barriers, so that they form an independent binding domain (cf. Chomsky 1986a). As a consequence PRO cannot be anaphorically bound to an argument of the matrix clause, but must be related to these arguments in different way, namely, by pronominal reference rather than binding. This is borne out by controlled subject clauses, since these often show an independent interpretation, as in (37), where (37a) is from Rooryck (1992: 54).

(37) a PROarb making noise at midnight frightens Sue  
b It is fun (for Susan,) [PROi/arb to win the first prize]

For adjuncts, however, this is not always the case. The examples in (38) illustrate that purpose clauses allow implicit controllers, whereas temporal adjuncts do not.

(38) a Theyi sank the ship [PROi to collect the insurance money]  
b The ship was sunk (by them,) [PROi/arb to collect the insurance money]

c The boysi stole a car [after PROi seeing a movie on joy-riding]  
d *The car was stolen (by the boysi) [after PROi/arb seeing a movie on joy-riding]  
e The cari was stolen (by the boys) [after PROi having been left unlocked]

Examples like these are explained by Rooryck (1992: 62) by assuming that, in spite of the barrier formed by the adjunct, the temporal adjunct is nonetheless coindexed with the matrix Tense 'for reasons of temporal sequencing'. According to Rooryck (ibid.), this type of coindexing licenses 'indirect binding of the anaphoric infinitival AGR', suggesting that the control relation in these constructions is anaphor binding. If adjuncts are independent binding domains, however, this kind of anaphoric binding remains problematic.

In chapter 3 section 3.5.5, however, I argued that temporal gerundive adjunct clauses are CPs, so that the requirement for temporal sequencing may be reflected by functional features in C0,
rather than Agr, as has also been argued for temporal features in finite and infinitival clauses (cf. Den Besten 1983; Raposo 1987). Assuming furthermore that, like other temporal adjuncts, the temporal control clause is adjoined at TP level, PRO must be controlled by the surface subject via operator-binding. The ungrammaticality of (38d) must result from a semantic incompatibility, since PRO can be controlled by the surface subject in (38e).

The semantic decomposition of the subevents involved in control constructions thus seems to be relevant for establishing the exact control relation, regardless whether the controlled clause is an argument or an adjunct. On the one hand, there are complement clauses (to verbs of communication and association), which are not identified as part of an unrealized subevent, so that they allow ‘arbitrary’ (i.e. generic) interpretations for PRO; and on the other hand, there are (temporal) adjunct clauses which are identified as part of a matrix unrealized subevent, and therefore require exclusive control.

The definition of controller assignment given in (39), is from Rooryck (1992: 7, def.15).

(39) The aspectual restriction on controller assignment (ARCA)

A. Only arguments embedded in temporally UNREALIZED subevents (States or Processes) as co-arguments of the infinitival argument are controllers of the unexpressed PRO subject of the infinitival argument.

In this descriptive definition of potential control relations, a ‘temporally unrealized subevent’ is defined as in (40).

(40) a The subevent is not linked to a specific point on the time axis representing the temporal development of the verb [...]  
    b [...] the subevent refers to a ‘possible future’  
    (Rooryck 1992: 6, def. 14)

In this sense, stative verbs and process verbs always involve their (subject) argument in an unrealized subevent together with the infinitival clause, as illustrated in (33) above.

The aspectual (sub)event approach seems to adequately describe monotransitive control verbs with exclusive subject control and ditransitive transition verbs like force in (33c) with exclusive object
control. To account for the latter, it is enough to say that the subject occurs only in one subevent, namely the *forcing-the-object* event, while the object is involved in two subevents, namely the *forcing* event and an unrealized event involving the infinitival clause, so that only the object is related to the embedded clause.⁴

For ditransitive constructions like those in (34) and (35), however, the aspectual restriction cannot determine the actual controller, since both arguments occur in a subevent together with the infinitival verbs, and are therefore potential controllers. In order to account for the actual reference in particular situations, Rooryck (1992: 7) adds a second clause to his ARCA, resorting to a thematic hierarchy of controller choice, as represented in (41):

(41) ARCA

B. If the set of possible controllers determined by A
[i.e. (39)] is greater than one, a thematic hierarchy determines that the (Proto-)Agent argument must be the controller of PRO.

Following Dowty (1989), the role of ‘(Proto-)Agent is viewed as a cluster of properties such as *volition, sentience, causation* and *movement*’ (Rooryck 1992: 6). The application of ARCA.B remains somewhat unclear, since the four properties are often divided over both potentially controlling arguments.

Rooryck (1992: 32) claims that the thematic hierarchy ensures that the Agentive subject of *promise* and the Patient object of *ask* are preferential controllers, but that this preference may be interfered with by the requirement of so-called ‘thematic matching’ of an implicit passive Agent (as in 34b,d) and the preferential controller. The problem for this idea is the same as for the ‘interpolated causer’ proposal of S&I (1991), namely, that control shift in these cases is not compelling.

5.2.6. Interim Conclusions

The above discussion of selected literature on control relations has shown that the interpretation of PRO is a complex problem. We saw that the distinction between so-called obligatory or exclusive

---

⁴As also noted by Rooryck (1992: 15 fn.7), his ‘unrealized subevent’ of the matrix verb is equivalent to what Chierchia (1984) calls an ‘entailment’ of the entire control relation.
control and non-obligatory or non-exclusive and arbitrary control does not correlate exactly with the syntactic distinction between L-selected complement clauses, on the one hand, and adjunct and subject clauses, on the other. While most controlled complement clauses show obligatory control, complement clauses to communication verbs like signal and shout, but also promise and ask allow their control relations to shift. And while some controlled adjunct clauses allow control shift and implicit controllers (i.e. purpose adjuncts), other adjuncts require exclusively surface subject control (i.e. temporal adjuncts).

If PRO were anaphoric in nature, we would not expect such variety in interpretation, since anaphors must be locally A-bound, so that in absence of a local binder constructions with an unbound anaphor are ungrammatical. In this and the previous chapters we saw that PRO is often licensed without a local antecedent, may have split reference and allows control relations to shift. Having set out to develop a unified analysis of all occurrences of PRO, at least with respect to its syntactic nature and distribution, I conclude that hypothesis that PRO is a pronoun allows us to adequately account for its distribution over subject positions of non-finite and verbless clauses and for its syntactic behavior as an element which is A-free in its local domain, i.e. the controlled clause. Syntactically, PRO is parallel to lexical pronominal subjects, in that these are also heads of argument chains which are A-free in the clause they are the subject of. PRO, however, differs from lexical pronominal subjects in that it is not (always) locally identified for ϕ-features.

With respect to the interpretation of PRO, I argued in chapter 3 that PRO in clauses without minimally content-identifying morphology must be controlled by a lexical argument of the immediately higher clause, to be identified for content. As minimally content-identifying morphology does not identify specific ϕ-features for PRO, it must be controlled if a referential interpretation is required. In chapter 2, section 2.2 I showed that the default reference of lexical pronominal subjects in equivalent constructions with an embedded finite clause is the same as the (default) reference of PRO. This strongly suggests that lexical properties of the matrix verb are involved in determining the core control relations for PRO, in the same way as they determine the default interpretation of lexical pronominal subjects. Throughout this study we have seen that there are certain instances of control where the reference of PRO must remain constant even in infinitival and gerundive constructions in which PRO can be minimally identified. Examples of such constructions are complements to certain control verbs, infinitival
relatives and temporal adjuncts. We have also seen, however, various
instances of control where the reference of PRO may shift, such as
in purpose clauses and complement clauses to certain types of verbs,
mainly verbs of communication. This suggests that lexical properties
of the matrix verb are not always conclusive with respect to the
actual control relations.

From this we may conclude that the actual interpretation of
PRO may be determined in three different ways. Sometimes the
reference of PRO is determined purely by syntactic factors, as in the
case of SC-complements without minimally content-identifying
morphology, infinitival relatives and temporal adjuncts. It must be
noted that the syntactic factors determining these control relations
are not instances of anaphoric binding, but involve empty operator-
binding for (specified) φ-feature identification. Sometimes, however,
the actual control relation is determined purely by lexical properties
of the matrix verb, as is the case for certain control verbs like force
and try. At other times, however, the lexical properties of the matrix
verb determine the core control relations of a construction, but
(extra-)linguistic factors may interfere with these core control
relations and force a shift in control relations.

In the next section, I will give a classification of control verbs
according to the type of control relations they license, i.e. whether
they induce control on a purely lexical basis or allow (extra)linguistic
factors to interfere. A more detailed discussion of the latter type of
control constructions and control in infinitival relatives will follow
in the next chapter, because the constructions clearly illustrate the
pronominal behavior of PRO by allowing control shifts.

5.3. Classification of control verbs

5.3.1. Introduction

In this section, I present a classification of control verbs of Dutch
and English in two main classes according to the control relations
they induce. This section does not contain new information, but
provides systematic background information for the analysis in the
next chapter. I do not discuss subject and adjunct clauses here, but
restrict myself to the different types of lexically selected control
clauses, since these clauses have been most controversial with respect
to the status of PRO. In section 5.3.2 I list verbs selecting invariably
(underlying) subject or object control, and in section 5.3.3 I list verbs
selecting a core control relation for their complements, but allow
these relations to shift or remain implicit. The lists presented here
are illustrative, rather than exhaustive. The two main classes are split
in subsections, listing monotransitive and ditransitive verbs,
respectively. Monotransitive verbs are verbs selecting a subject and a
complement clause. Ditransitive verbs are verbs selecting a subject,
an object and a complement clause. The existence of the class of
verbs which allow their control relations to vary provides clear
support for the hypothesis that PRO is a pronoun.

5.3.2. Invariable control

5.3.2.1. Introduction

In this subsection I list invariable subject control and (underlying)
object control verbs for Dutch and English, respectively. In
subsection 5.3.2.2 monotransitive verbs are listed, and in subsection
5.3.2.3 ditransitive verbs are listed.

5.3.2.2. Monotransitive verbs and subject control

(42) het aandurven (dare), het aankunnen (be able to), aanvangen
(start), aarzelen (hesitate), het afzweren (renounce), begeren
(desire), behoren (ought to), het bestaan (have the guts),
bevestigen (affirm), bewijzen (prove), doordrijven (push),
doorzetten (keep on), durven (dare), er (niet) veel mee
ophebben ((dis)like), er niets van moeten hebben (dislike), er
niets tegen hebben (consent), er (n)iets voor over hebben (be
(not) particularly interested in), ervan houden (love), het
mijden (avoid), nalaten (neglect), het ontgroeven (grow out of),
ontkennen (deny), ontwennen (get off the habit), ervoor
openstaan (be open for), ophouden (stop), oppassen (take care),
ertoe overgaan (proceed to), ertoe overbellen (tend), overwegen
(consider), pogen (attempt), popelen (desperately want),
pretenderen (pretend), proberen (try), het schuwien (fear), ernaar
smachten (long for), ernaar terugverlangen (long after), eraan
toe komen (get around to), ervoor terugdeinzen (shrink), ervoor
terugschrikken (recoil), uitproberen (try out), uitstellen
(postpone), veraschwenen (hate), verdienen (earn), het
verdommen (flatly refuse), verdragen (endure), vergeten
(forget), verleren (lose one's skill) vermijden (avoid), vertikken (balk at), verzaken (neglect), waarderen (appreciate), ervan walgen (loath), eraan wennen (get used to), weigeren (refuse)

These are all monotransitive verbs selecting the control clause as their direct complement. In all cases, they show invariable subject control. Some verbs, however, require or allow the controlled clause to be related by the dummy pronoun *het* in direct object position, as in *het mijden* (to avoid it). In case of verbs with an obligatory preposition, the controlled complement clause is usually linked to the dummy pronoun *er*, as in *ervan bouden* (to love it). Syntactically these extraposed complement clauses behave like adjuncts, with the consequence that impersonal passivization is often allowed in these cases. As the expletives to which the extraposed clauses are linked are in argument position, they are still semantically selected arguments.

Although the latter constructions allow control from an implicit argument, they do not allow control to shift, in the sense that the implicit external argument must be the exclusive controller, and cannot be part of a larger group. Compare (43a) and (43b).

(43) a Er werd (door Jan) geprobeerd [om PRO$_{1/1}$ eerder te vertrekken]
   It was (by Jan) tried [for PRO earlier to leave]

   b Er werd (door Jam) besloten [om PRO$_{1/1}$ eerder te vertrekken]
   It was (by Jan) decided [for PRO earlier to leave]
   ‘It was decided (by Jan) to leave earlier’

As the lexical restrictions on controllerhood are thus stricter for verbs like *proberen* (=try) than for verbs like *besluiten* (=decide), I have decided to include verbs of the former type in the class of invariable control.

The English examples of invariable subject control verbs are also monotransitive verbs, as illustrated in (44).

(44) ache, acknowledge, admit, afford, aim, aspire, attempt, care, cease, chance, check, claim, confess, continue, contrive, decline, deign, demand, deny, deserve, desire, determine, disclaim, durst, earn, endeavour, expect, fail, banker, hate, hesitate, itch, learn, like, long, love, manage, mean, need, neglect, omit, prefer, prepare, pretend, profess, purport, recall, recommence, reconsider, refuse, regret, remember, seek, strive, swear, thirst, try, vow, want, wish, yearn
All these verbs induce obligatory subject control for their embedded PRO subjects. We have not included monotransitive verbs like *decide* and *arrange*, because these verbs belong to the class of verbs which allow their control relations to vary. In (45) and (46) two examples are given, showing that the obligatory control situation induced by the verbs in (42) and (44) is not only a property of controlled PRO subjects, but also of the coreference relations between lexical subjects and their antecedent.

(45)  
\begin{itemize}
\item a. John, aarzelde [om PRO₁ het huis te kopen]  
  John hesitated [for PRO the house to buy]
\item b. John, hesitated PRO₁ to buy the house
\item c. *Er werd geaarzeld [om PRO₁ het huis te kopen]
\item d. ?Er werd door Jan, geaarzeld [om PRO₁ het huis te kopen]
\item e. *It was hesitated (by Jan) [PRO to buy the house]
\end{itemize}

(46)  
\begin{itemize}
\item a. John, aarzelde of hij₁ het huis zou kopen  
  John hesitated if he the house would buy
\item b. John, hesitated whether he would buy the house
\item c. *Er werd geaarzeld of men het huis zou kopen
\item d. ?Er werd door John, geaarzeld of hij₁ het huis zou kopen
\item e. *It was hesitated (by John₁) whether one/(he) would buy the house
\end{itemize}

These examples show that the finite and infinitival examples are equally awkward in (45d) and (46d) or ungrammatical in (45c,e) and (46c,e). These examples show that the ungrammaticality of the infinitival constructions is not conclusive evidence for an anaphoric analysis of PRO, because a lexical pronominal subject in the finite constructions in (46c,e) does not yield grammatical constructions, either.

5.3.2.3. Ditransitive verbs and object control

In this subsection I list a set of verbs which invariably induce underlying object control.

(47) aanbevelen (recommend), erop aandringen (urge), aandrijven (drive), (aan)leren (teach), aanmanen (exhort), aanraden (advise), aansporen (incite), aanzetten (move), activeren (activate), adviseren (advise), afraden (deter), belemmeren (binder), beletten (prevent), bemoedigen (encourage), beschuldigen (accuse), besparen (save),
bevelen (command), bezielen (possess), dwingen (force), gebieden (order), machtigen (authorize), misgunnen (enrty), openen (compel), ontzagen (discourage), opdragen (instruct), opdringen (press), ophitsen (egg on), oppuutten (provoke), opleggen (force), oproepen (call on), overdragen (delegate), overlaten aan (leave to), overreden (persuade), stimuleren (stimulate), toelaten (allow), toestaan (permit), toevertrouwen (entrust), uitdagen (challenge), uitnodigen (invite), verbieden (forbid), vergunnen (allow), verbreken (prevent), verleiden (seduce), vermanen (admonish), verplichten (oblige), voorbestemmen (predestine), zich aanwenden (get used to), zich bijeieren (devote oneself to), zich bedwingen (restrain oneself), zich erop richten (direct oneself to), zich erop toeleggen (apply oneself to), zich ertoe zetten (set oneself to), zich ervoor wachten (take care not to), zich ertegen verzetten (resist), zich generen (feel embarrassed), zich opmaken (prepare), zich veroorloven (afford), zich verwaardigen (deign)

These ditransitive verbs include a set of obligatorily reflexive verbs, because these may be regarded as inducing a control relation between PRO and the reflexive matrix object, e.g. zich bedwingen may be described as force oneself not to perform a certain action. Both the Dutch ditransitive verbs in (47) and the English ditransitive verbs in (48) are obligatory object control verbs.

(48) accuse, advise, aid, allow, appeal to, ask, beseech, bid, call upon, capacitare, cause, charge, command, condition, dare, dictate, direct, disallow, discourage, empower, enable, encourage, enjoin, entitle, forbid, force, grant, impel, incite, induce, influence, inhibit, inspire, instruct, invite, motivate, move, order, permit, plead, press, prohibit, prompt, recommend, require, rouse, seduce, set, spur, summon, teach, tell, tempt, train, trust, urge

The verbs in (47) and (48) are classified as invariable object control verbs, since under no circumstances can PRO be controlled by a participant other than the underlying object, as illustrated in (49).

(49) a  John, beval Mary, [PRO_{v/j} te kiezen]
b  John, told Mary, [PRO_{v/j} to choose]
c  Mary, werd (door John,) bevolen [PRO_{v/j} te kiezen]
d  Mary, was told (by John,) [PRO_{v/j} to choose]
e  John, beval [PRO_{v/arb} te kiezen]
f  *John, told [PRO_{v/arb} to choose]
These examples illustrate that the controlling argument, i.e. the internal argument of the matrix verb, must be lexically present for the constructions to be grammatical. The controller may be realized either as an object (49a,b) or a subject (49c,d), but may not remain implicit (49e,f). The latter restriction is also reflected in the finite counterparts of these sentences, as shown in (50).

(50)  
a  John; beval Mary; [dat ze/*hij; moest kiezen]  
b  John; told Mary; [that she/*he; had to choose]  
c  Mary; werd bevole [dat ze; moest kiezen]  
d  Mary; was told [that she; had to choose]  
e  John; beval [dat men/zijs/*hij; moest kiezen]  
f  *John told [that one/she/he had to choose]

The examples in (49a,b) and (50a,b) show that only the object may control PRO or corefer with the embedded lexical subject. The fact that the matrix subject may not corefer with the embedded lexical pronominal subject must be attributed to the lexical (i.e. deontic) properties of the verbs bevelen and tell, since the embedded finite CP is an independent syntactic binding domain, so that in principle both the embedded subject and object qualify as potential antecedents.

The examples in (49f) and (50f) furthermore show that the English verb tell never allows its object DP to be left implicit, whether the complement clause is a controlled infinitive or a finite clause. The Dutch examples in (49e) and (50e) show that these may be grammatical, provided the embedded subject does not corefer with the matrix subject. Both examples are grammatical, presumably because the object DP is an underlying indirect object, which may also be realized as an aam-PP. Indirect objects in Dutch are usually optional, and when they are left implicit, they receive an arbitrary interpretation, in this case generic.

5.3.3. Varying control

5.3.3.1. Introduction

In the following subsections we consider different instances of mono-
and ditransitive control verbs, namely those which allow various control relations for the embedded subject. It will turn out that the interpretation of PRO is mirrored by the interpretation of lexical pronominal subjects in equivalent finite complement clauses. We will first consider monotransitive verbs.

5.3.3.2. Monotransitive verbs

In this subsection we consider verbs that seem to have the same argument structure as the verbs in (42), with the controlled complement functioning as the ‘object’, sometimes obligatorily related to an expletive in argument position. The set of verbs in (51) exemplify the monotransitive variants of this class.

(51) beginnen (begin), beslissen (determine), besluiten (decide),
erover denken (think about), erop hopen (hope), ervoor kiezen
(choose), leren (learn), meehelpen (help), nastreven (pursue),
erover peinzen (think about), plannen (plan), ervoor
prakken (ponder on), suggereren (insinuate), voornemen
(resolve), ernaar streven (strive for)

The list in (52) contains the English monotransitive control verbs with non-obligatory control.

(52) agree, arrange, begin, choose, conspire, decide, indicate, intend,
plan, start

The reason for classifying these monotransitive verbs as inducing non-obligatory control is that these verbs allow the controller to remain implicit, and they also allow an ‘inclusive’ reading when the controlling argument is lexically realized. Consider (53).

(53) Miss Reed wanted to take her class on a school trip.
   a She decided [PRO_{i+1} to leave on Friday morning at 8
   o’clock]
   b It was decided (by Miss Reed) [PRO_{i+1} to leave on Friday
   morning at 8 o’clock]
   c It was decided (by the board) [PRO_{i+1} to leave on Friday
   morning at 8 o’clock]
   d It was decided (by the board) [that they_{i+1} would leave on
   Friday morning at 8 o’clock]
These examples show that PRO can receive referential or arbitrary interpretation from elements in the context beyond the immediately dominating clause, where a matrix argument may, but need not even be involved in the control relation, as in (53b,c). The fact that the lexical pronominal subject in (53d) has the same reference as PRO in (53c) is compatible with the hypothesis that PRO is an empty pronoun. The entirely independent interpretation of PRO in (53c) provides strong support for this hypothesis.

More support for the hypothesis that PRO is pronominal comes from an example where PRO may have split controllers, one of which is a long distance controller (54b). The fact that certain verbs do not allow long distance control is compatible with the view that different control verbs have different lexical properties, which are reflected in the control relations.

\[(54)\]
\[
a \quad [\text{John and Dave}_i] \text{ had planned } [\text{PRO}_i \text{ to paint the barn}]
\]
\[
b \quad \text{John}_i \text{ had planned with Dave}_j [\text{PRO}_{i+j} \text{ to paint the barn}]
\]
\[
c \quad \text{John}_i \text{ decided together with Dave}_j [\text{PRO}_{i+j} \text{ to paint the barn on Saturday}]
\]
\[
d \quad \text{John}_i \text{ and Dave}_j \text{ had talked about painting the barn. John}_i \text{ finally decided } [\text{PRO}_{i+j} \text{ to finish painting the barn (together) on Saturday}]
\]
\[
e \quad [\text{John and Dave}_i] \text{ claimed } [\text{PRO}_i \text{ to have painted the barn (together)}]
\]
\[
f \quad *\text{John}_i \text{ claimed with Dave}_j [\text{PRO}_{i+j} \text{ to have painted the barn}]
\]
\[
g \quad ?\text{John}_i \text{ claimed } [\text{PRO}_{i+j} \text{ to have finished painting the barn (together)}]
\]
\[
h \quad [\text{John and Dave}_j] \text{ tried } [\text{PRO}_i \text{ to finish painting the barn}]
\]
\[
i \quad ?\text{John}_i \text{ tried with Dave}_j [\text{PRO}_{i+j} \text{ to finish painting the barn (together)}]
\]
\[
j \quad \text{John}_i \text{ and Dave}_j \text{ had talked about finishing painting the barn. John}_i \text{ finally tried } [\text{PRO}_{i+j} \text{ to finish painting the barn (*together) on Saturday}]
\]

These examples show that the lexical properties of verbs like \textit{plan} and \textit{decide} allow split control and LDC, while the lexical properties of verbs like \textit{claim} and \textit{try} do not.

### 5.3.3.3. Ditransitive verbs

When we consider the lists of ditransitive control verbs which allow
a variety of control relations for the embedded PRO subject, we
must conclude that most of these verbs, except for help, are verbs of
communication. Compare the lists for Dutch and English in (55) and
(56), respectively.

(55) aanbieden (offer), beloven (promise), dreigen (threaten), helpen
(help), overtuigen (convince), toeroepen (call), schreeuwen
(shout), toezeggen (give one’s word), verzoeken (request),
voorstellen (propose), vragen (ask), waarschuwen (warn),
zeggen (say)

(56) demand of, guarantee, help, offer, persuade, promise, propose,
request, say, shout, signal, suggest, threaten, warn

Some of these verbs are basically object control verbs, e.g. demand
of, persuade, ask; some verbs, however, are basically subject control
verbs, e.g. promise, threaten; and other verbs do not seem to be
lexically determined for a specific control relation at all. The
examples in (57) and (58) show that the basic, or ‘core’ control
relations of basically subject and object control verbs are not always
possible.

(57) a John, asked Mary, [PRO_{s_i, j} to leave early]
   b The pupil, asked the teacher, [PRO_{i, s_j} to leave early]
   c John, asked Mary, [when PRO_{i, s_j} to leave]
   d John, asked Mary, [PRO_{i, s_j} to go to the movies together]

(58) a John, promised Mary, [PRO_{i, s_j} to stay up late]
   b Grandma, promised the kids, [PRO_{i, s_j} to stay up late]
   c John, promised Mary, [PRO_{i, s_j} to be allowed to stay up
late]
   d John, promised Mary, [PRO_{i, s_j} to go to the movies
together]

(59) John, signaled to Mary, [PRO_{i, s_j} to leave in five minutes]

For the verbs in (57) and (58) the linguistic context must usually be
transparent to know which reading of PRO is preferred. The control
relations in (57b) and (58b), however, show that real world
knowledge is sometimes sufficient to shift away from the core
control relation. For verbs like signal in (59) the linguistic context
need not be transparent for control shift to occur, so that we may
conclude that for these verbs the interpretation of the extra-linguistic
environment provides sufficient clues for the interpretation of PRO. When we try to give paraphrases of the examples in (57) - (59) using finite complement clauses, it becomes clear that different modal auxiliaries must be used in combination with different interpretations of PRO, not only for verbs like ask and promise, but also for verbs like signal. Compare the examples above to those in (60) to (62).

(60) a John, asked Mary\(_j\) [if she\(_j\)/he\(_j\) would leave early]  
b The pupil\(_i\), asked the teacher\(_j\) [if she\(_j\) could leave early]  
c John\(_i\), asked Mary\(_j\) [when he\(_i\)/she should leave]  
d John, asked Mary\(_j\) [if they\(_{i+j}\) should go to the movies together]

(61) a John, promised Mary\(_j\) [that he\(_j\) would stay up late]  
b Grandma, promised the kids\(_i\) [that they\(_j\) could stay up late]  
c John, promised Mary\(_j\) [that she\(_j\) could stay up late]  
d John, promised Mary\(_j\) [that they\(_{i+j}\) would go to the movies together]

(62) a John, signaled to Mary\(_j\) [that he\(_j\) should/could/would leave in five minutes]  
b John, signaled to Mary\(_j\) [that she\(_j\) should/could/would leave in five minutes]  
c John, signaled to Mary\(_j\) [that they\(_{i+j}\) should/could/would leave in five minutes]

These examples show that the ‘core’ controller (inclusively) controls the embedded clause, when the modal meaning of this clause is ‘neutral’. By neutral I mean that the modal does not add any additional meaning apart from indicating the temporal sequence between the matrix event and the embedded event. The neutral modal is would, as illustrated in (60) to (62).

For the aims of the present chapter it is sufficient to see that the possibility of control shift and split control supports our view that PRO is an empty pronoun, since it is generally agreed (pace Bennis & Hoekstra 1989a) that anaphors do not allow split antecedents, and always select the most local compatible antecedent to corefer with. If PRO were an anaphor, it is expected that the most local matrix argument is the controller, since PRO has underspecified \(\phi\)-features, so that it matches any \(\phi\)-features. As the interpretation of PRO often appears to be guided by various (semantic and pragmatic) contextual factors, such as modal verbs,
quantifying expressions like *together* and 'real life' hierarchical relations between the participants, which may induce a more distanced antecedent to control PRO, I conclude that the hypothesis that PRO is a pronoun is well-supported.

5.4. Conclusions

In the first part of this chapter I have given an overview of various accounts in the literature with respect to the interpretation of PRO. We have seen that the issue of the reference of PRO is rather complex, and is hard to capture in one explanatory account. In line with the argumentation in the four previous chapters, I conclude that the very nature of PRO as a pronoun makes it so difficult to account for the actual reference of this element, since pronominal reference often depends on real world knowledge.

Although the reference of a pronoun must be compatible with syntactic principles like Condition B of the binding theory and lexical semantic restrictions imposed by the matrix verb, the reference of a pronoun cannot simply be determined by a syntactic or lexical semantic theory. An analysis of all possible contextual factors involved in establishing pronominal reference, however, is too large a project to include in the present study.

To conclude the present chapter, I have argued that a purely syntactic or (lexical) semantic approach to control cannot adequately account for the entire range of control relations. As the same can be said of the referential relations of lexical pronouns, I have tried to find more supporting evidence for my claim that PRO is an empty pronoun. First, I illustrated that even PRO in invariable control relations is compatible with a pronominal analysis, since the default reference of PRO in controlled infinitival complements is the same as the default reference of lexical subjects in equivalent finite clauses. Second, I concluded that the tight restrictions imposed on invariable control must be related to lexical properties of the matrix verb, since PRO in invariable control constructions and PRO in constructions allowing more freely varying control relations are syntactically licensed in the same way, as argued in previous chapters. Third, I have shown that control depends on semantic and pragmatic factors, in the same way as pronominal reference. Finally, the fact that the control complements of verbs like those discussed in subsection 5.3.3.3 allow split control and control shift can only be taken to support the pronominal analysis of PRO, since anaphors do not allow split antecedents (cf. chapter 2) and require their actual
antecedent to be the most local and matching potential antecedent. The possibility of control shift for PRO, which is underspecified for \( \phi \)-features and therefore matches any potential antecedent, shows that it is not always the closest matching antecedent which controls PRO, supporting the hypothesis that PRO is not an anaphor, but a pronoun.
6.1. Introduction

This chapter is a case study of optional and obligatory shifts in the reference of PRO. Examples of the two types we discuss in this chapter are given in (1) and (2), respectively.

(1)  a) John: asked Mary: [PRO\textsubscript{\textit{\textbeta}} to leave]
     b) John: asked Mary: [when PRO\textsubscript{\textit{\textbeta}} to leave]
     c) John: asked Mary: [whether PRO\textsubscript{\textit{\textbeta+}} to be allowed (by her mother) to leave]
     d) John: asked Mary: [whether PRO\textsubscript{\textit{\textbeta}} to be allowed (by her) to leave]

(2)  a) Jane bought a dog: \textsubscript{CP} OP\textsubscript{i\textbeta} [e\textsubscript{i} to watch her house]
     b) Jane bought a book: \textsubscript{CP} OP\textsubscript{i\textbeta} [PRO\textsubscript{i\textbeta} to read e\textsubscript{i} over the weekend]

The example in (1a) shows that *ask* is basically an object control verb. The example in (1b) shows that when a *wh*-element is added in the embedded SpecCP, the control relation shifts to subject control. The example in (1c) furthermore shows that this shift in control relations is not always obligatory and that split control is another option, because the matrix subject and/or the matrix object may control PRO in this example. The (d) sentence in (1) suggests that when the embedded passive Agent of *allow* is interpreted as the 'core’ controller, control shift is obligatory.

The examples in (2) illustrate that when the relativized noun in the matrix clause is interpreted as the embedded object instead of the embedded subject, the embedded subject must shift to a different coreference relation, i. e. ‘control’ shift in these cases is always
As already noted in chapters 1 and 5, the phenomenon of control shift is important for our hypothesis that PRO is a pronoun, because the same shifts in referential relations occur with lexical pronominal subjects in the finite counterparts of controlled infinitives. Compare (3) and (4) to (1) and (2).

(3) a John\textsubscript{i} asked Mary\textsubscript{j} [if (s)he\textsubscript{i+1} would open the window]
    b John\textsubscript{i} asked Mary\textsubscript{j} [when (s)he\textsubscript{i+1} should to open the window]
    c John\textsubscript{i} asked Mary\textsubscript{j} [whether (s)he/they\textsubscript{i+1} would be allowed (by her mother) to open the window]
    d John\textsubscript{i} asked Mary\textsubscript{j} [whether (s)he\textsubscript{i+1} would be allowed (by her) to open the window]

(4) a Jane bought a dog\textsubscript{i} [CP which\textsubscript{i} [\textit{\textit{\textit{\textit{e}}}_i should watch her house]]]
    b Jane\textsubscript{i} bought a book\textsubscript{i} [CP which\textsubscript{i} [she\textsubscript{i} wants to read \textit{\textit{\textit{\textit{\textit{e}}}_i over the weekend]]

These examples show that the control relations for the PRO subjects in the complement clauses in (1) and the embedded adjunct clauses in (2) are the same as the (default) coreference relations for the lexical pronominal subjects in (3) and (4).

With respect to the sentences in (1) and (3), it is important to note that the cases of control shift involve a shift in modality of the complement clause, introducing an additional argument, which remains implicit in the construction with the modal \textit{should}, but can be made lexical in the passive construction with \textit{allow}. This additional argument functions as a kind of Cause or Authority which causes or permits someone else to be involved in the controlled event.

This kind of modality is generally referred to as ‘deontic’ modality (cf. Lyons 1977; Palmer 1979, 1986; Chierchia 1984; Kratzer 1981, 1991). Expressions with a deontic modality typically involve modals like \textit{may}, \textit{must} and \textit{should}, but deontic modality may also be expressed in a periphrastic way by passivized lexical verbs, as in \textit{be allowed to}, \textit{be permitted to} and \textit{be forced to}, where the (implicit) \textit{by}-phrase functions as the Cause or Authority. I will refer to this argument as the ‘Deontic Authority’ or DA. In Dutch, modal verbs behave as lexical verbs, in that they are capable of selecting the additional DA argument and allow a representation of this argument in the syntax as a \textit{van}-PP (\textit{from}-PP). In section 6.2, I show that it is this Deontic Authority (DA) which often causes control relations to
shift. I argue that in these cases control shift is obligatory to avoid a violation of principle B of the Binding Theory.

With respect to the examples in (2) and (4), it is important to see that the finite relative clauses involve a variable, which is bound to a \( wh \)-operator in the embedded SpecCP. By analogy, it is generally assumed that infinitival relatives involve a variable bound to an empty operator in the embedded SpecCP (cf. Haegeman 1991). Whenever the embedded object is the operator bound variable, the embedded subject cannot also be interpreted as the relativized noun, so that a shift in referential relation compared to infinitival relatives without an object gap is obligatory. If there is no other matrix argument which PRO can be controlled by, a generic interpretation for the embedded subject is licensed. In section 6.3, I argue that in infinitival relatives with an empty object control shift is always obligatory to avoid a violation of principle C of the Binding Theory.

The discussion in this chapter supports the hypothesis that PRO is a pronoun, because control relations may shift in the same way as pronominal coreference relations, and PRO may receive an independent generic interpretation when there is no lexical controller. The fact that PRO may occasionally function as a variable strongly argues against an anaphoric nature of this empty element, since anaphors must be locally A-bound. It is, however, compatible with the view that PRO is a pronoun, since lexical pronouns may also function as operator-bound variables, as illustrated in (5).

(5) a Voici le courrier, qu'il, est arrivé ce soir
here is the mail that it is arrived tonight

b This is the man whom, Elmsworth told me when he will invite him,

(Haegeman 1991: 372, 373)

In these examples the resumptive pronouns are bound to an empty operator in (5a) and to a \( wh \)-operator in (5b). As the only requirement for pronouns is that they may not be locally A-bound, a variable function for PRO is perfectly compatible with its characterization as a pronoun, since variables are not locally A-bound, but A-bar (A')-bound. Thus, like lexical pronouns, PRO may be locally A'-bound and non-locally coreferent with any matching argument in the higher clause.
6.2. Deontic modality and control shift

6.2.1. Introduction

In the present section, we concentrate on controlled complements of ditransitive verbs of communication, because it is these verbs which allow the reference of PRO to shift. They were listed in the previous chapter, and are repeated here in (6) and (7).

(6) aanbieden (offer), beloven (promise), dreigen (threaten), helpen (help), overtuigen (convince), toeroepen (call), schreeuwen (shout), toezeggen (give one’s word), verzoeken (request), voorstellen (propose), vragen (ask), waarschuwen (warn), zeggen (say)

(7) demand of, guarantee, help, offer, persuade, promise, propose, request, say, shout, signal, suggest, threaten, warn

While many of these verbs are lexically marked for ‘core’ subject (e.g. promise, threaten) or object (e.g. ask, persuade) control relations, other verbs (e.g. propose, shout) do not seem to be lexically determined for either subject or object control. All these verbs, however, share the property that they allow the interpretation of the embedded PRO subject to shift, a property which is not shared by the other control verbs listed in the previous chapter.

In this first part of our discussion of control shift phenomena, we focus on the argument structure of (deontic) modality in English and Dutch. Before discussing the control shift phenomena, I will argue that a difference in argument structure between the two languages may explain the fact that deontic interpretations for embedded controlled clauses are less frequent in English than for Dutch. I propose that this is related to the fact that English does not have fully inflected modal verbs, but must resort to periphrastic deontic constructions to express deontic modality within an embedded infinitive. The English periphrastic deontic expressions are always three-place predicates, because they are syntactically derived (by passivization or nominalization) from three-place object control verbs like allow, permit and force, whereas Dutch modal verbs like mogen (may) and moeten (must) are underived unaccusatives with either a two-place or a three-place argument structure. The two-place deontic constructions in Dutch have a Source argument (van-PP) and an infinitival Theme argument, where the embedded subject raises to
the subject position of the modal. In these cases, the Source functions as the Deontic Authority (DA) causing or allowing an embedded event to happen. The three-place construction, however, contains an additional Goal/Beneficiary argument, which functions as controller for the embedded subject. In these constructions the DA causes or allows the Goal/Beneficiary to be involved in the embedded event as the controller of the embedded subject. As the English periphrastic deontic constructions are always three-place control constructions, the first interpretation of the DA allowing or causing an event without involving a Goal/Beneficiary argument does not obtain in English.¹

With respect to the control shift phenomena in English and Dutch, I will show that these are the same for both languages, since each involves a Source (a by-phrase in English and a van-PP in Dutch) and a Theme (the embedded clause) argument.² When these deontic constructions are embedded under a control verb, the Source argument often remains implicit. For its interpretation, it may, however, be coreferent with the matrix core controller, in which case control shift is obligatory. As the DA may be lexically expressed as a reflexive, the conceptual structure of deontic modals does not prevent coreference between the core controller and the DA. As an implicit DA is necessarily disjoint from PRO, I conclude that the implicit DA is syntactically represented as an empty pronoun at least by LF.

6.2.2. Deontic modality and argument structure

In this subsection we compare the argument structures of deontic modality in Dutch and English. The argument structure of deontic modality plays an important role in control shift phenomena, like those like (1b,c,d). It has been noted by various linguists (cf. Růžička 1983; Farkas 1988; Larson 1991; Sag & Pollard 1991; Rooryck 1992) that basic control relations may shift when the

¹Although it is sometimes argued that all modal expressions involve raising constructions (cf. Barbiers 1995), I adopt the view that epistemic modals are subject raising verbs (cf. Pollock 1978), while 'dynamic' modals (cf. Palmer 1979, 1986), are subject control relations of the type be able to and want to (cf. Klooster 1984). I assume that a Deontic Authority (DA) can be added to both types of modal interpretation, resulting in the DA causing or allowing a situation to happen (epistemic) or forcing or allowing a person to control an event (dynamic).

²As verbs like allow and permit are not really agentive, I refer to the external argument of these verbs as the Source, rather than the Agent.
embedded clause is passivized or receives a deontic interpretation. Consider the examples in (8), from Farkas (1988).

(8)  

a. Grandma promised the children, [PROi to stay up late]  
b. The pupili asked the teacher [PROi to leave early]  

The examples in (8) are cases of control shift, since the default, 'core' control relation for promise is subject control and for ask it is object control, as illustrated in (9).

(9)  

a. Johni promised Martyi [PROi/ij to stay up late]  
b. Johni asked Martyi [PROi/ij to leave early]  

In these examples, the proper names ensure a pragmatically neutral environment for the control constructions. The starred coindexation shows that object control for promise is not the preferred interpretation, and neither is subject control for the construction with ask.

The control relations in (8) have shifted to object and subject control, respectively, because our knowledge of the world says that grandmothers and teachers have 'deontic authority' over children and pupils. Thus, without a lexically realized modal expression, the sentences in (8) receive a deontic interpretation, because the contextual information about human relationships induces such an interpretation. The fact that these kind of extra-linguistic factors may and do influence the interpretation of PRO in such a radical way strongly supports the view that PRO is a pronoun, ultimately depending on the wider (non-linguistic) context for its actual interpretation.

When the contextual information is neutral, as in (9), control shift can be evoked by means of additional linguistic information, as in (10).

(10)  

a. Johni promised Maryi [PROi/ij to be allowed [PRO to stay up late]]  
b. Johni asked Maryi for permission [PROi/ij to leave early]  
c. Johni had Maryi beloofd [PROi/ij laat op te mogen blijven]  
John had Mary promised late up to may-INF stay  
d. Johni vroeg Maryi (toestemming) [om PROi/ij vroeg weg te mogen gaan]  
John asked Mary (permission) [for PROi/ij early away to may-INF go]
These examples illustrate that English may use two different ways of expressing deontic modality in infinitival clauses. In (10a) the passive of the lexical verb *allow* is used; and in (10b) the deverbal noun *permission* is used. The Dutch examples in (10c,d) illustrate that this language can express the deontic modality by simply adding a modal verb.

Let's first consider the English examples in more detail. The deontic expression with *be allowed* in (10a) involves an implicit demoted Source, a raised Goal and an eventive Theme argument. The deontic expression with *for permission* in (10b) has an implicit Source, an implicit Beneficiary and an eventive Theme argument. The implicit Source in both (10a) and (10b) functions as the DA of the deontic expression, whereas the Goal and Beneficiary arguments control the embedded PRO subject.

The argument structures of *allow* and *permission* are represented in (11). The external argument is underlined, the other two arguments are internal arguments.

(11) a V: *allow*: \(x, y, z\)
    b N: *permission*: \(x, y, z\)

In terms of thematic argument structure, \(x\) is the Source, \(y\) is the Goal or Beneficiary, and \(z\) is an eventive Theme. This is represented in (12).

(12) a V: *allow*: Source, Goal, Theme
    b N: *permission*: Source, Beneficiary, Theme

In terms of syntactic representation, the verb *allow* takes a nominal subject, a nominal object and a clausal complement. The noun *permission* allows the Source as a prenominal genitive, but when this argument is represented as a PP, the Source is realized as a *from*-PP. When the Beneficiary is lexically present it is realized as a *for*-PP. The Theme is represented as a clause, in the same way as with *allow*.

The tables in (13) and (14) represent all three components of argument structure, thematic role assignment and syntactic realization in one.\(^3\) These tables do not involve the notion of Deontic Authority, because I take this to be an additional function

superimposed on the lexically selected arguments of the Source type.

(13) ALLOW:

<table>
<thead>
<tr>
<th>argument structure</th>
<th>external argument</th>
<th>1st internal argument</th>
<th>2nd internal argument</th>
</tr>
</thead>
<tbody>
<tr>
<td>thematic structure</td>
<td>Source</td>
<td>Goal/ Beneficiary</td>
<td>Theme</td>
</tr>
<tr>
<td>constituents</td>
<td>subject DP</td>
<td>object DP</td>
<td>control clause</td>
</tr>
</tbody>
</table>

(14) PERMISSION:

<table>
<thead>
<tr>
<th>argument structure</th>
<th>1st argument</th>
<th>2nd argument</th>
<th>3rd argument</th>
</tr>
</thead>
<tbody>
<tr>
<td>thematic structure</td>
<td>Source</td>
<td>Beneficiary</td>
<td>Theme</td>
</tr>
<tr>
<td>constituents</td>
<td>from-PP</td>
<td>.</td>
<td>for-PP</td>
</tr>
</tbody>
</table>

As the lexical verbs allow and permit are invariable object control verbs (see section 5.3.3 of chapter 5), it is expected that the Goal of allow and the Beneficiary of permission function as controllers for PRO. This is borne out for the examples in (10a,b). The control properties of the higher verb promise, however, may shift from subject to object control. In section 6.2.4, I present my explanation for this remarkable fact.

First, however, we will discuss the Dutch sentences in (15), repeated here.

(15) a  John, had Marty, belooft [PRO_{vi/j} laat op te mogen blijven]
       John had Marty promised late up to may-INF stay

       b  John, vroeg Marty, (toestemming) [om PRO_{vi/j} vroeg weg te mogen gaan]
       John asked Mary (permission) for early away to may-INF go

The modal verb mogen (may) induces control shift in these cases. In Dutch, modal verbs have an independent argument structure, as is illustrated by the examples in (16).
(16) a Jan mag wegaan van Marie
    Jan may leave from Marie
    ‘Jan may leave, because Marie allowed him to’

    b Jan moet wegaan van Marie
    Jan must leave from Marie
    ‘Jan must leave, because Marie forced him to’

If the argument structure of the deontic modals in Dutch is the same as the argument structure of the periphrastic deontic expressions in English, we expect that mogen also selects a Source, a Goal/Beneficiary and an eventive Theme argument. From the examples in (16) we may conclude that there is indeed a Source argument, namely, the van-PP. This van-PP is thematically equivalent to the English by-phase and the from-PP in the periphrastic deontic representations of the Source in (13) and (14). With respect to the two other arguments, however, it is not easy to see whether Jan is an argument of the embedded verb, or a Beneficiary argument of the modal, controlling the empty subject of the embedded clause.

In the chapter 4, I argued that a bare infinitival complement in Dutch may indeed be a controlled clause, if the higher verb has a ditransitive argument structure. For the causative/permissive verb laten this was argued to be the case, because it allows non-verbal complements consisting of direct and indirect objects. Similarly, the deontic verbs mogen and moeten seem to allow three non-verbal arguments as illustrated in (17).

(17) a Jan mocht een koekje van zijn moeder
    Jan may a cookie from his mother
    ‘Jan is allowed by his mother to have a cookie’

    b Jan moet een nieuwe jas van zijn moeder
    Jan must a new coat from his mother
    ‘Jan’s mother wants him to have a new coat’

These constructions suggest that the deontic modals may have a three-place argument structure comparable to the periphrastic deontic expressions in English.

The examples in (18), however, show that these deontic verbs also allow two-place argument structures.

(18) a Dat mag niet (gebeuren) van moeder!
    that may not (happen) from mother
    ‘Mother doesn’t want that to happen’
Therefore, I will conclude that Dutch deontic modals can function as three-place predicates, like the English periphrastic deontic constructions, and as two-place predicates without a Goal/Beneficiary argument. In either case, the deontic modal is an unaccusative construction with a Source argument, which functions as the Deontic Authority and a clausal Theme. The three-place predicate also selects a Beneficiary argument. If the modal is a two-place verb, the embedded subject raises to the matrix subject position. If, however, the modal is a three-place verb, the subject of the clausal Theme is controlled by the Beneficiary argument, which is realized as the subject of the modal. The ambiguous argument structure of deontic modals is represented in (19).

(19) *deontic modal verbs* (mogen, moeten):

<table>
<thead>
<tr>
<th>argument structure</th>
<th>1st argument</th>
<th>2nd argument</th>
<th>(3rd argument)</th>
</tr>
</thead>
<tbody>
<tr>
<td>thematic structure</td>
<td>Theme</td>
<td>Source</td>
<td>(Beneficiary)</td>
</tr>
<tr>
<td>constituents</td>
<td>complement clause/DP</td>
<td>van-PP</td>
<td>(subject)</td>
</tr>
</tbody>
</table>

This ambiguity with respect to the argument structure of deontic modals in Dutch may explain why these constructions are more frequent than the English periphrastic deontic constructions, since the periphrastic constructions only license controlled three-place predicates. To express two-place constructions like those in (18), English makes use of raising to object constructions with verbs like *want*. In these cases English and Dutch have similar argument structures, but the syntactic representations of these arguments are different for each language. In this respect it is interesting to note that the Dutch verb *laten* shows the same ambiguity regarding its argument structure, as discussed in chapter 4. I propose that

---

*Although it is unusual that a Beneficiary argument is realized as a nominative subject, the semantic interpretation of thematic roles justifies this analysis. Other verb with a nominative realization for their Beneficiary (or Receptient) arguments are *krijgen* (to get), *ontvangen* (to receive).*
permissive and causative *laten* are lexically related to deontic modals, in that they have the same argument structures, but differ in syntactic representation of these arguments.

(20) *causative and permissive* *laten*:

<table>
<thead>
<tr>
<th>argument structure</th>
<th>1st argument</th>
<th>2nd argument</th>
<th>(3rd argument)</th>
</tr>
</thead>
<tbody>
<tr>
<td>thematic structure</td>
<td>Source</td>
<td>Theme</td>
<td>(Goal/ Beneficiary)</td>
</tr>
<tr>
<td>constituents</td>
<td>subject</td>
<td>complement clause/DP</td>
<td>(direct object <em>or PP</em>)</td>
</tr>
</tbody>
</table>

6.2.3. The syntactic representation of deontic modality

6.2.3.1. Introduction

In this subsection we discuss the syntactic representation of deontic expressions. We concentrate primarily on the Dutch cases, since these are the most complex. For English it is shown that modals are grammaticalized elements in finite $T^0$, so that the embedded subject must raise to the matrix subject position. The English periphrastic deontic expressions, however, have been shown in the previous section to derive from three-place object control verbs, so that the embedded subject is a PRO subject, and the matrix Source argument originates as a co-argument of the matrix Goal, which controls PRO. With respect to the Dutch deontic modals, it turns out that these must be analyzed as either two-place unaccusative verbs with a raised embedded subject, or three-place unaccusative verbs with the internal Beneficiary argument realized as the subject of the modal.

6.2.3.2. Deontic expressions in English

In finite constructions, deontic modality in English may be expressed by a single modal, such as *may* and *must*. The examples in (21) show that these modals are [+finite] tense heads, because they do not occur in non-finite constructions, having no participial or infinitival forms.
(21) a ‘You must be home before midnight’, John was told by his mother
   b ‘You may not be late’, John was told by his mother
   c *John’s mother told him [to must be home before midnight]
   d *John’s mother told him [not to may be late]

As inflected forms of these modals do not exist in English, it is generally assumed that modals have become grammaticalized Tense elements.\(^5\) Although at a conceptual level the modals allow a deontic interpretation in the examples in (21a,b), it must be concluded that they do not have an independent argument structure, since the DA argument cannot be lexically represented as a from- or by-PP, as illustrated in (22).

(22) a John must be home before midnight (*from/*by his mother)
   b John may not be late (*from/*by his mother)

The examples in (23), however, show that periphrastic deontic expressions in English allow the lexical realization of the DA in a by-phrase.

(23) a John, promised Marty, [PRO\(_{zi/j}\) to be allowed by him\(_{i/jk/sj}\) [PRO to stay up late]]
   b John, promised Marty, [PRO\(_{zi/j}\) to be allowed e\(_{i/jk/sj}\) [PRO to stay up late]]
   c John, threatened Marty, [PRO\(_{zi/j}\) to be forced by him\(_{i/jk}\) [PRO to stay up late]]
   d John, threatened Marty, [PRO\(_{zi/j}\) to be forced e\(_{i/jk}\) [PRO to stay up late]]

In each case, it is in principle possible to interpret the (implicit) Source as a discourse participant outside the matrix clause, indicated by index \(k\). If the Source receives such a discourse interpretation, PRO may be interpreted either as the matrix subject or the matrix object, although the object interpretation is preferred.

In case of nominalization, both the underlying Source and Beneficiary have been left implicit, although the Source may be

---

\(^5\) Although there are minimal pairs like can-could, may-might, will-would, these are not Tense oppositions, but each form represents a different modality. The second forms of each pair often indicate an irrealis cf. Warner 1993).
represented by a lexical pronoun (24b) or referential DP (24c), and the Beneficiary may be lexicalized by an emphatic reflexive (24d).

(24) a  John; asked Marty, for permission [PRO_{vi/j} to leave early]
   b  John; asked Marty, for his permission [PRO_{vi/j} to leave early]
   c  John; asked permission from Marty, [PRO_{vi/j} to leave early]
   d  John; asked for himself; permission [PRO_{vi/j} to leave early]

In (24a) the implicit arguments of permission are both interpreted as a matrix argument, the Source argument of permission being interpreted as the object of ask and the Beneficiary argument being interpreted as the matrix subject. As permit is an object control verb, the Beneficiary object of permission controls the embedded PRO. This results in apparent control shift, because the implicit Beneficiary argument of permission is interpreted as the subject of ask.

From these examples I conclude that the interpretation of the implicit arguments is crucial for the actual reference of the most deeply embedded PRO in deontic constructions. In subsection 6.2.4 we will discuss this in more detail. First, however, we will consider the representation of Dutch deontic modals, because this confirms our conclusion with respect to the ambiguous argument structure of these constructions.

6.2.3.3 Deontic modal verbs in Dutch

In subsection 6.2.2, I proposed that Dutch deontic modals may function as two- and three-place predicates. In this section, I present a syntactic analysis of the Dutch constructions, which confirms the ambiguous argument structure of the Dutch deontic modals, because standard tests show that these modals may be either two-place subject raising constructions or three-place control constructions.

The representation of a complex clause as either a subject raising clause or a control clause is based on a difference between the number of structural Case positions in a clause, and the number of selected arguments. Raising constructions always have a matrix Case position available to be filled by an expletive or an embedded argument, while control constructions always have all their argument positions filled by locally selected arguments. In what follows I will apply three tests on the basis of which we are able to classify the Dutch deontic modal verbs as either control verbs or raising verbs.
(see also Radford 1988 and Borsley 1994). I use the raising verb seem (25a) and the control verb wish (25b) to illustrate each of the three tests with examples.

(25) a  The board seems [t to have elected Mary]
       b  The board wishes [PRO to elect Mary]

The first test is that subject raising verbs allow their subject to be an expletive het (it), whereas control verbs do not allow expletive subjects. This is illustrated in (26).

(26) a  It seems that the board has elected Mary
       b  *It wishes that the board elects Mary

The second test holds that raising verbs license an idiomatic reading of their complement clause, whereas control verbs do not. Compare (27a) and (27b).

(27) a  The cat seems to be out of the bag
       b  #The cat wishes to be out of the bag

The # in the control clause indicates that only the literal interpretation is available for these constructions, not the idiomatic reading.

The third test shows that raising verbs retain the same meaning after embedded passivization, because the thematic relations in these constructions are the same as in the active equivalents. For control verbs, however, the meaning of the clause changes under embedded passivization, because the matrix argument comes to control an embedded subject with a thematic role which is different from the thematic role of the subject in the active construction. Consider (28).

(28) a  The board seems to have elected Mary
       b  Mary seems to have been elected (by the board)
       c  The board wishes to elect Mary
       d  #Mary wishes to be elected (by the board)

In (28), the (a) and (b) sentences are semantically equivalent, but the (c) and (d) sentences are not, because in (28a,b, c) Mary is assigned the internal θ-role of the embedded verb, whereas in (28d) Mary is assigned the external θ-role of the matrix verb, and controls the internal argument PRO of the embedded verb.

Furthermore, it has been observed that verbs which do not
select an external \( \theta \)-role, i.e. raising-to-subject verbs, do not assign structural accusative Case (cf. Burzio 1986). The examples in (29) show that \textit{seem} does not assign structural accusative, but that \textit{wish} does.

(29) a  *The board seems it.
      b  The board wishes it.

These examples show that the control verb \textit{wish} is a transitive verb assigning an external \( \theta \)-role to its subject and the raising verb \textit{seem} is an unaccusative verb assigning no external \( \theta \)-role.

If we next consider the Dutch deontic modal verbs in the light of these criteria, we must conclude that they are sometimes raising verbs, and at other times control verbs, as illustrated by the examples in (30). In either case, the DA is in the same local domain as the subject of the modal expression.

(30) a  Jan mag van mij [\( e \) de bal gooien]
      Jan may from me the ball throw
      b  Het mag best van mij [dat Jan de bal gooit]
      It may yes from me that Jan the ball throws
      ‘It is fine with me that Jan throws the ball’
      c  De aap mag van mij nu wel uit de mouw komen
      The monkey may from me now yes out the sleeve come
      ‘As far as I’m concerned, the secret may come out now’
      d  De bal mag van mij best door Jan gegooid worden
      The ball may from me yes by Jan thrown be
      ‘I allow the ball to be thrown by Jan’
      e  Jan mag \textit{bet} van mij
      Jan may it from me
      ‘I allow Jan (to do ) it’
      f  *De bal mag \textit{bet} van mij
      the ball may it from me

The examples in (30b,c,d,f), support the view that deontic modals, like \textit{mogen} in (30a), are raising verbs. In the (b) example the matrix subject is expletive \textit{bet}. The expression in (30c) may receive an idiomatic interpretation. And the embedded passivization in (30d) retains the same meaning, because the raised subject \textit{de bal} receives an internal \( \theta \)-role from the embedded verb \textit{gooi} (\textit{throw}), and is not interpreted as a Goal or Beneficiary of the modal \textit{mogen} (\textit{may}).

The example in (30e), however, suggests that the subject in (30a) may after all receive an independent \( \theta \)-role from the deontic modal,
since the direct complement of the modal may be realized as an object pronoun. The fact that this pronominal object is ungrammatical in (30f) suggests that there are two possible analyses for deontic modals, one with a matrix argument in matrix subject position, and the other with an embedded argument in matrix subject position.

If the subject in (30a) is a matrix argument, it may either be an external argument, or a raised internal argument, as in the case of the periphrastic passive constructions. If the subject is an external argument, we expect that the matrix modal verb may be passivized. Compare the examples in (31).

(31) a  *Het werd (door Jan) gemogen (van Marie)
        It was (by Jan) may-PRT (from Marie)

    b  *De bal werd (door Jan) mogen gooien (van Marie)
        The ball was (by Jan) may-INF throw (from Marie)

The examples in (31a,b) show that the object pronoun, nor the embedded object may surface as the matrix subject under matrix passivization. From these examples, we must conclude that the accusative pronominal object in (30e) is not in a structural Case position. The fact that the deontic modal cannot undergo the structural operation of passivization suggests that the deontic modal does not select an external argument, so that if the subject in (30a,e) is a matrix argument, it must be an internal argument, as in the case of the English periphrastic deontic expressions.

The ambiguity with respect to the argument structure of deontic modal verbs can be motivated by the fact that these verbs occur in the same lexical form as ‘epistemic’ and ‘dynamic’ (cf. Palmer 1986) modality (cf. footnote 2 above). It has been argued in the literature that epistemic modals involve subject raising from the embedded clause (cf. Pollock 1978) and that dynamic modals involve subject control relations (cf. Klooster 1984) with interpretations of kunnen (can) and willen (will) like be able to and want to. Examples of epistemic and dynamic modality are given in (32a,b) and (32c,d), respectively.

(32) a  Dat mag dan zo zijn, maar ...
        That may then so be, but ...
        ‘That may be, but ...’

    b  Dat moet wel zo zijn, want ...
        That must yes so be, for ...
        ‘That must be true, because ...’
CONTROL SHIFT

Ik mag hem graag
I may him very
'I like him a lot’
Ik moet hem niet
I must him not
'I don’t like him'

If deontic modality is a simple addition of a Deontic Authority argument these types of modality, it is likely that this DA may be added to either an epistemic or a dynamic modal expression. In the former case, the DA allows a situation to happen, and in the latter case the DA allows a person to control an event. If this is correct, the syntactic representation of ‘deontic epistemic’ modality will naturally involve a two-place argument structure, whereas the syntactic representation of a ‘deontic dynamic’ modality will involve a three-place argument structure.

The examples in (30) above support the idea that the deontic modal in (30a) may have either a two-place or a three-place argument structure, since it allows expletive subjects in (30b) and disallows a pronominal object in (30f), as in two-place constructions. In (30e), however, it allows a pronominal object, as in three-place constructions. Therefore, I conclude that the representation of (30a) may be either as in (33a) or as in (33b), depending on whether the subject independently receives a Goal/Beneficiary role from the deontic modal or not.

(33) a  Jani, mag van mij [ti, de bal gooien]
     Jan may from me [ti, the ball throw]
b  Jani, mag van mij [PRO, de bal gooien]
     Jan may from me [PRO the ball throw]
     'Johni, is allowed (by me) [PRO, to throw the ball]

The above examples illustrate that deontic modals may only be represented as three-place subject control constructions, when the matrix subject is compatible with the matrix θ-role of Beneficiary, as in (33b). Otherwise, the argument in matrix subject position must be raised from the embedded clause, where it receives its θ-role, as in (33a). Thus, the syntactic representations of embedded deontic constructions in Dutch and English differ in that English periphrastic deontics are always three-place unaccusative control constructions, whereas Dutch deontic modals may be either two-place subject-raising constructions or three-place unaccusative control constructions. This difference in argument structure may explain
why the English periphrastic deontics occur less frequently as embedded infinitival constructions than Dutch deontic modal constructions, since epistemic meaning is expressed by lexical modals like can, may, must and cannot occur in non-finite form.

6.2.4. The Deontic Authority as a cause for control shift

6.2.4.1. Introduction

In this subsection we consider the role of the Deontic Authority in relation to control shift. In the previous subsections we saw that the (passive) Source argument of verbal and nominal periphrastic deontic expressions fulfills the same DA function as the Source of deontic modal verbs in Dutch. I will refer to all these different occurrences of Source arguments alike as DAs, because when they occur in (periphrastic) deontic environments they all have the same potential with respect to control shift phenomena.

6.2.4.2. The pronominal behavior of the implicit DA

The examples in (23) and (24) above have already shown that the DA may optionally be expressed. When the DA is made lexical, it is always expressed as a PP, a by-phrase or from-PP in English, and a van-PP in Dutch. When the DA is left implicit, it may interfere with the core control relations of the matrix verb, so that it is important to establish the nature of this implicit argument. I propose to investigate the nature of the implicit DA by comparing its behavior to that of lexical DAs. Consider (34).

(34) a Johni promised Martyj [PROi/j/i+j to one day be allowed by himselfi/ji+k/themselvesi+j to leave]
   b Johni promised Martyj [PROi/j/i+j to be allowed by himi/ji+k/themsi+j/k to leave early]
   c Johni promised Martyj [PROi/j/i+j to be allowed ei/ji+k/arb to leave early]

If the implicit DA behaves as an anaphor, as the lexical anaphor in in example (34a), it should be able to be interpreted as the matrix subject or object or both, as long as PRO has the same reference.

If the implicit DA behaves as a pronoun, as the lexical pronoun
in (34b), it should be able to be interpreted as the matrix subject or object, as long as it is disjoint from the interpretation of PRO. Thus, if the DA is interpreted as the matrix subject, PRO cannot be so interpreted, but is interpreted as the matrix object, and vice versa. A plural DA, therefore, cannot be interpreted as a combination of the matrix subject and object, because one of these will be interpreted as PRO, and a pronominal DA must be completely disjoint from the reference of PRO, since they are in the same local domain.

If we consider the various interpretations of (34c), we must conclude that the implicit DA cannot be coreferent with the interpretation of PRO, but must be disjoint. The DA in (34b,c) may even be interpreted as the matrix object, if promise is understood as making a threatening forecast with respect to a future situation in which John makes sure that Marty will allow him (i.e. John) to leave early. The only difference between the empty and the lexical pronominal DA is that the lexical DA may refer to a specific entity outside the matrix clause, while the empty DA may refer to an non-specified, arbitrary, indefinite entity (i.e. someone) outside the matrix clause. The fact that a lexical anaphoric DA must be coreferent with the interpretation of the PRO subject, whereas a lexical or implicit DA must be disjoint from the interpretation of PRO strongly suggests that the implicit DA behaves syntactically as a pronoun.

The same behavior of the DA can be observed in Dutch. Consider the examples in (35).

(35) a  Jani belooft Pieti [PROi/ij+1 ooit naar huis te mogen gaan van zichzelfi/i/’henzelfi+1]
     Jan promised Pieti [PROi/i; at some point to house to may go from himself/themselves]
     ‘Jan promised Piet to be allowed by himself/themselves to go home sooner or later’

b  Jani belooft Pieti [PROi/ij+1 vroeg naar huis te mogen gaan van hemi/i’]
     Jan promised Pieti [PROi/i early to house to may go from him]

c  Jani belooft Pieti [PROi/ij+1 vroeg naar huis te mogen gaan eveni/i’arb]

As in the English cases, the Dutch reflexive DA must be coreferent with the interpretation of PRO, whereas the Dutch lexical pronominal DA and implicit DA must be disjoint from the interpretation of PRO. These examples confirm the idea that the implicit DA behaves as a pronoun, because the interpretation of
(35c) runs parallel to the interpretation of (35b). While it seems to be lexically determined that the implicit DA hardly ever corefers with the object of beloven and promise, it may equally well corefer with the matrix subject, or some other discourse participant. When the DA is implicit, it may also have an indefinite interpretation. In case the implicit DA is interpreted as indefinite, or as a discourse participant beyond the matrix clause, control from any (combination) of the matrix arguments is licensed, depending on contextual factors, as illustrated in (35b). This variety of possible control relations provides support for the view that PRO is a pronoun.

When the DA is interpreted as the matrix subject, control obligatorily shifts to the matrix object. If the implicit DA is indeed syntactically represented as a pronoun, we can explain the obligatory shift in control relations by principle B of the binding theory. As the implicit DA is thematically selected by a deontic expression, it receives a $\theta$-role from the deontic predicate. If this were not projected to syntactic structure, we expect that an implicit argument is indifferent with respect to a pronominal or anaphoric interpretation. In (33) we saw that the DA and the subject of the modal expression are in the same clause, i.e. share the same local domain. As we have argued in the discussion of the examples in (34) and (35) that the implicit DA cannot be bound to PRO, i.e. the implicit DA is not anaphoric, this leads to the conclusion that it must be syntactically represented as a pronoun.

This conclusion is theoretically supported by the Projection Principle, which holds that lexical information must be syntactically projected, and by the Visibility Condition, which holds that thematic roles must be made visible to the syntax. Although a lexical DA is not assigned structural nominative or accusative Case but is syntactically realized as a PP, I claim that it is nonetheless syntactically visible. To establish syntactic visibility for implicit DAs, I will adopt Rizzi’s (1986) analysis, where it is argued that indirect $\theta$-roles may be syntactically licensed by a preposition or by inherent Case. Rizzi (1986) argues that examples like those in (36b,c) contain a dative pro.

(36)  

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Gianni fa cantare l’inno nazionale a Maria</td>
</tr>
<tr>
<td></td>
<td>Gianni makes sing the national anthem to Maria</td>
</tr>
<tr>
<td>b</td>
<td>Il generale fa cantare l’inno nazionale seduti</td>
</tr>
<tr>
<td></td>
<td>The general makes sing the national anthem seated ([+pl])</td>
</tr>
</tbody>
</table>
c Il generale può ordinare (ai soldati) di partire
'The general can order (to the soldiers) to leave'
(Rizzi 1986: 548-550)

The example in (36a) shows that the verbal complex fa cantare selects an indirect object, Maria, which is Case-marked by the preposition a. As the verbal complex thus has the property of assigning an indirect \(\theta\)-role, Rizzi (1986) argues that this \(\theta\)-role must also be assigned in (36b), although the argument remains implicit. The fact the implicit argument can control PRO in (36c) suggests that the implicit argument is syntactically represented. As the implicit argument cannot be bound by the matrix subject, it is concluded that it is an empty pronoun. For reasons of visibility, the implicit object must be syntactically licensed. As an empty pronoun, however, the implicit argument must be syntactically licensed by a Case assigning head. Rizzi (1986: 553) concludes that indirect \(\theta\)-roles may be syntactically licensed by a preposition or by inherent Case.

As the DA is also an argument with an indirect \(\theta\)-role, which cannot be bound to a co-argument, and is capable of causing shifts in control relations, I propose that the DA is licensed in the same way as the dative pro, by an empty prepositional counterpart of van and by or by inherent Case. Although DA’s never control PRO in complement clauses, the example in (37) shows that they may function as controllers of PRO in purpose adjuncts, in the same way as was argued for implicit passive by-phrases (cf. Roeper 1987).

(37) a [Om PRO, snel klaar te kunnen zijn met nakijken] moesten de studenten (van de leraar) korte opstellen schrijven
[For PRO, quickly done to can be with correcting] must the students (from the teacher) short compositions write
'In order to be able to do the corrections quickly, the students were told (by the teacher) to write short compositions'

b The ship was sunk (by the captain) in order to receive the insurance money

The grammaticality of these examples suggests that the implicit DA is indeed licensed in the syntax as an empty pronoun.

With respect to the syntactic position of the DA, I will assume that the DA of periphrastic deontic expressions in English is licensed by an empty preposition in base-generated subject position, as illustrated in (38).
As *allow* is a ditransitive verb, it has two internal arguments, a Goal and a Theme, the latter of which is realized as the complement clause. Although I am not particular about their exact representations, to preserve a binary branching structure I represent them in their surface word order in a Small Clause configuration, headed by X\(^\circ\). Because of passivization, the D-structure in (38) must be mapped onto an unaccusative representation, so that internal Goal argument can only be licensed in the nominative Case position of a higher SpecTP and a lexical DA must be realized as a *by*-phrase.

Although the deontic modals in Dutch are lexically specified as unaccusative verbs, their unaccusativity is only relevant for their syntactic surface representation. As they only differ in argument structure from the English periphrastic deontic constructions by having an optional Goal/Beneficiary \(\theta\)-role, I propose a similar structure for Dutch deontic modals.

As the Dutch deontic modals are unaccusatives, the Beneficiary argument of three-place predicates or the embedded subject of two-
place predicates must be licensed by nominative Case in SpecTP, and a lexical Source argument (i.e. the DA) must be realized as a \textit{van}-PP.

For both the English and the Dutch constructions, I adopt the analysis by Rizzi (1986) and assume that the implicit DAs are syntactically licensed as empty pronouns by a null preposition. Thus, constructions like those in (40) are ungrammatical, because coreference between the (implicit) pronominal DA and the PRO-argument in the same local domain constitutes a violation of principle B of the binding theory.

(40) a \[^{\ast}\text{Jan, beloofde Piet, [PRO, vroeg naar huis te mogen gaan van hem/e]}
\]
\[b \quad {\ast}\text{John, promised Marty, [PRO, to be allowed by him/e, [PRO, to leave early]]}
\]

Thus, if the implicit DA is a syntactically licensed pronoun, we can explain in a principled way why control must shift in cases like (40) when the DA is interpreted as the ‘core’ controller. If the implicit DA has no syntactic status, the ungrammaticality in (40) is not expected, since a reflexive interpretation for the implicit argument cannot be excluded on semantic grounds, as illustrated in (41).

(41) a \text{Zij mochten van zichzelf nog een glasje wijn (drinken)}
\text{They may from themselves just one glass wine (drink)}
\[b \quad \text{They allowed themselves (to drink) one more glass of wine}
\]

These examples support our analysis that the implicit DA is pronominal, because it cannot have the same interpretation as the subject.\(^6\) The fact that the interpretation of the DA may cause

---

\(^6\)I will assume that a similar syntactic licensing obtains for implicit arguments of nouns involved in control (shift) constructions. The Dutch sentence in (10c) showed that the nouns which induce a deontic interpretation are optional, since the deontic modal may still occur in the embedded clauses. For the English example in (10b), it may likewise be assumed that there is an implicit deontic modality in the embedded clause with the appropriate argument structure.

Alternatively, it may be argued that the argument structure of a noun like \textit{permission} leads to shifts in control relations, because the external argument of this noun is interpreted by object control from the higher verb \textit{ask}, so that the object of \textit{ask} is the ‘permitter’, and if the implicit ‘permissee’ is a syntactically licensed pronoun, condition B explains why it cannot also be the matrix object, but must be interpreted as the matrix subject. As \textit{permission} itself is also derived from an object control verb, the ‘permissee’ which is interpreted as the matrix subject is the core controller for PRO, as illustrated in (i).

\[i \quad \text{John, asked Mary, [permitter, permission permissee, [PRO, to leave]]}\]
control shift also strengthens the argument that PRO is pronominal, for if PRO were anaphoric, we would incorrectly predict that the interpretation of PRO disallows the DA to be interpreted as the core controller at any time.

If the DA is not interpreted as the matrix subject, core control does not violate any binding principle, so that control shift is not forced for syntactic reasons. Contextual factors may, however, cause a shifted or split control relation, in the same way as they allow shifted or split coreference relations for lexical pronominal subjects. The fact that these various interpretations for PRO are allowed provides further support for our analysis that PRO is a pronoun.

6.2.5. Finite and infinitival deontic clauses compared

In this subsection we compare the behavior of lexical pronominal subjects and PRO in finite and infinitival deontic clauses, respectively, and show that it supports my thesis that PRO is a pronoun. The comparison is meant to show that the default coreference relations of lexical pronominal subjects in finite complement clauses to verbs like promise and ask parallel the reference assigned to PRO in the same modal environments. Compare the examples in (42) and (43).

(42) a Jan, beloofde Piet, [dat hij,jy,rik / zij,j+i, vroeg thuis zou(den) zijn]
Jan promised Piet [that he,jy,rik / they,j+i, early home would be]
'Jan promised Piet that he / they would be home early'
b Jan, beloofde Piet, [dat hij,jy,rik vroeg naar huis mocht gaan]
Jan promised Piet [that he,jy,rik early to house may-PAST go]
c Jan, vroeg Piet, [of hij,jy,rik vroeg naar huis wilde gaan]
Jan asked Piet [if he,jy,rik early to house wanted go]
d Jan, vroeg Piet, [of hij,jy,rik vroeg naar huis mocht gaan]
Jan asked Piet [if he,jy,rik early to house may-PAST go]
e Jan, vroeg Piet, [of zij,j+i,rik vroeg naar huis konden gaan]
Jan asked Piet [if they,j+i,rik early to house could go]

(43) a Jan, beloofde Piet, [PRO,jy,rik vroeg thuis te zijn]
Jan promised Piet [PRO,jy,rik early home to be]
'Jan promised Piet to be home early'
CONTROL SHIFT

b. Jan, belooft Piet [\(\text{PRO}_{i/j/k} \) vroeg naar huis te mogen gaan]
   Jan promised Piet [\(\text{PRO}_{i/j/k} \) early to house to may-INF go]

c. Jan, vroeg Piet [\(\text{PRO}_{i/j/i+j/k} \) vroeg naar huis te gaan]
   Jan asked Piet [\(\text{PRO}_{i/j/i+j/k} \) early to house to go]

d. Jan, vroeg Piet [\(\text{PRO}_{i/j/k} \) vroeg naar huis te mogen gaan]
   Jan asked Piet [\(\text{PRO}_{i/j/k} \) early to house to may-INF go]

The examples with finite complement clauses illustrate that the default interpretation of the lexical pronominal subjects in (42) is the same as the 'core' control relations for PRO subjects in complement clauses to promise and ask. Even though the subject is a lexical pronoun, it is not always free to choose 'the other' matrix argument as coreferent, as in (42a), because of lexical properties of both the matrix and embedded clauses. Finding a referent for PRO in the wider discourse is not impossible, but highly marked, as indicated by the question-marked index \(k\).

Thus, although both matrix arguments are outside the minimal binding domain of the embedded subject, the choice of the coreferent argument is restricted in the same way as for the PRO subject in (43). The examples in (42a) and (43a), however show that when there is no restriction with respect to the lexical properties of the embedded clause, the interpretation of the embedded PRO and lexical pronominal subjects alike may vary. This supports the view that PRO indeed behaves as a pronoun.

Although the reference of PRO cannot be found in the wider discourse beyond the matrix clause, this does not necessarily argue against the pronominal nature of PRO. In chapter 2, I argued that the relatively local reference of PRO is caused by the fact that specific \(\phi\)-feature identification for this empty subject cannot happen locally, as with lexical pronouns, which are inherently specified for \(\phi\)-features, so that the only way to locally identify specific \(\phi\)-features is via control from an immediately higher argument. Therefore, specific \(\phi\)-feature identification is the reason for the relatively local control relation for PRO, rather than its apparently anaphoric nature.

Moreover, if PRO were an anaphor, we would not expect it to allow shifts in control, as in (43b,d), or split controllers as in (43c). Whether control shift occurs and whether it is optional or obligatory depends on the lexical properties of both the matrix and the embedded clauses involved. The fact that the interpretation of the DA causes the same shift in coreference relations for the lexical pronominal subjects in (42b,d) provides further support for our
hypotheses that both the implicit DA and PRO are pronouns.

6.3. Control shift and infinitival relatives

6.3.1. Introduction

In this section I discuss the obligatory shift in referential relation for the empty subject in infinitival relatives. Examples of these were given in (2), repeated here in (44).

(44) a Jane bought a dog; $\underline{\text{CP Op}}_i [\text{e}_i \text{ to watch her house}]$

b Jane bought a book; $\underline{\text{CP Op}}_i [\text{PRO to read } \text{e}_i \text{ over the weekend}]$

The ‘core control’ relation of an infinitival relative is the relation between the empty embedded subject and the relativized noun in the higher clause, as in (44a). When the embedded clause contains an empty object as well, this core control relation obligatorily shifts, as illustrated in (44b).

As indicated in the general introduction to this chapter, I believe that the difference between the—often optional—control shift in complement clauses and the—always obligatory—control shift in infinitival relatives is related to the nature of the additional empty or implicit argument. I have argued that the DA in controlled complement clauses is a pronoun, so that control shift is only forced when this is required by principle B of the binding theory. Here, I will show that control shift in infinitival relatives is obligatory when there is an empty object in the infinitival relative, to prevent a violation of principle C of the binding theory. As this empty object is an operator-bound variable, it must be coreferent with the relativized noun in the matrix clause, i.e. the ‘core’ controller. To prevent the object variable from being A-bound to PRO, the control relation must shift. We will see that in infinitival relatives with only an empty subject, PRO itself behaves as an operator-bound variable, so that it is obligatorily interpreted as the relativized matrix argument.

Although the present operator-bound analysis resembles the analyses of extraposed infinitival subject clauses by Epstein (1984) and Lebeaux (1984), I argued in chapter 5 that the PRO subjects in these sentences cannot always be operator-bound. The main difference between bound variables in infinitival relatives and PRO
in subject clauses is that PRO need not always be linked to the potentially controlling argument via operator-binding, while variables must always be linked to the relativized noun by operator-binding.

(45) a  It would be better for the environment [PRO\textsubscript{arb} to produce less toxic waste]

b  It would be better for Jane, [Op, [PRO, to buy a dog]]

c  It would be better [PRO\textsubscript{arb} to buy a dog]

Whereas the variables in (44) are always interpreted as the relativized noun, the PRO subject in (45a) is not. Below, I argue that PRO is essentially a pronoun, which may occasionally function as a variable, as in infinitival relatives.

6.3.2. Control shift as a means to avoid a violation of binding principle C

In relative clauses, one of the embedded arguments is always interpreted via (empty) operator binding as coreferent with the relativized matrix argument, regardless of whether the embedded clause is finite or infinitival. Consider the examples in (46).\footnote{Although the relation between the operator and the relativized noun is not a syntactic binding relation, I have used the same indexing for operator-variable binding relation as for the coreference relation between the relativized element and the operator-bound variable, to indicate that the coreference relation is mediated by operator-binding. This use of coindexation is helpful to distinguish between possible and impossible coreference relation, as illustrated in the examples in (44).}

(46) a  Jane bought a dog, [CP which\textsubscript{i} [e\textsubscript{i} has to watch her house]]

b  Jane bought a book, [CP which\textsubscript{i} [she wants to read e\textsubscript{i} over the weekend]]

c  Jane bought a dog, [CP Op\textsubscript{i} [e\textsubscript{i} to watch her house]]

d  Jane bought a book, [CP Op\textsubscript{i} [PRO to read e\textsubscript{i} over the weekend]]

In (46a,b) the relative clauses are finite, with a lexical \textit{wh}-operator in SpecCP. In (46a), the embedded subject is the operator-bound variable, and in (46b) the embedded object is the operator-bound variable. Both variables are interpreted as the object of the matrix clause, because the object is the relativized argument. The infinitival examples in (46c,d) are equivalent to the finite examples, showing
that the empty subject in (46c), although represented as PRO, behaves in fact as an operator-bound variable, which is obligatorily interpreted as the relativized matrix object. The empty subject in (46d), on the other hand, appears to have the same properties as the lexical pronoun subject in the finite clause in (46b).

The examples in (47) support our view that she and PRO in (46b,d) both behave as pronouns, since they may also refer to a Beneficiary argument, when this is lexically expressed.

(47) a Jane bought a dog; for Mary, [CP which/*who; [e; has to watch her house]]
    b Jane bought a book; for Mary, [CP which; [she; may want to read e; over the weekend]]
    c Jane bought a dog; for Mary, [CP Op; [e; to watch her house]]
    d Jane bought a book; for Mary, [CP Op; [PRO; to read e; over the weekend]]

These examples show that the addition of a Beneficiary in the context forces different interpretations for PRO in (47d) and in (46d), in the same way as it induces a different default reference for the lexical subjects in (47b) as compared to in (46b). The referential relations of the variables in (47), however, do not shift. Therefore, these examples support the claim that PRO is a pronoun.

To see how an operator-bound variable can cause an obligatory shift in control relations, we will next consider examples of a different type of infinitival relatives, namely infinitival complements of the intensifying degree particle too.\(^8\) Compare the examples in

\(^8\)It may be suggested that because of their optionality these clauses are not complements but adjuncts. As these clauses cannot appear in the same sentences without too, I agree with Vanden Wyngaerd (1990; 1994) that they are selected complements of the degree modifier.

(i) a The men are too stubborn to talk to Bill
   b *The men are stubborn to talk to Bill

Vanden Wyngaerd (1990; 1994) argues that PRO is anaphorically related to an implicit argument of the degree modifier, as in (ii).

(ii) Piet, z’n inkomen is te laag (voor hem) [om PRO, zich een auto te kunnen permitteren]
    Piet’s income is too low (for him) [for PRO (himself) a car to be-able-to afford]

As discussed in chapter 2, these arguments are outside the local binding domain for PRO, so that in our analysis the coreference between PRO and the (implicit) Beneficiary is compatible with a pronominal analysis of PRO. See Vanden Wyngaerd (1990; 1994) and references cited there for a detailed discussion of these
(48).  

(48) a  The men; are too stubborn \([CP \ Op_i [PRO_{i/k} \text{ to talk to Bill}]]\)

b  The men; are too stubborn \([CP \ Op_i [PRO_{arb} \text{ to talk to } e_{i/k}]]\)

(Chomsky 1982: 30)

When the infinitival clause only has an empty subject, as in (48a), the subject is obligatorily related to the relativized noun via operator-binding. When the embedded clause contains an empty object variable, it is this variable which is obligatorily interpreted as the relativized noun, via operator-binding. If PRO would also be controlled by the relativized subject, the variable and PRO would have the same reference, which is a violation of principle C of the binding theory, because variable may not be A-bound.

Example (48a) involves just one higher argument, so that if this argument is related to the object variable, PRO receives an arbitrary interpretation. The examples in (49) show, that if the context provides other participants, PRO may even be interpreted by LDC.

(49) a  Bill; expects these men; to be too stubborn \([CP \ Op_i [PRO_{i/k} \text{ to talk to him}_{j/k}]]\)

b  Bill; expects these men; to be too stubborn \([CP \ Op_i \ [PRO_{arb} \text{ to talk to } e_{i/k}]]\)

(Chomsky 1982: 31)

In (49a), the infinitival subject is the operator-bound variable, so that it is obligatorily interpreted as the ECM-subject these men, and the embedded Goal is a pronoun, which may either corefer with the matrix subject or have free reference. In (49b), the embedded Goal argument is the operator-bound variable obligatorily interpreted as the ECM subject. Because of principle C, the embedded PRO subject may not also be interpreted as the ECM-subject. Instead the coindexation shows that PRO in (49b) may independently receive arbitrary, generic reference, or PRO may corefer with the highest subject Bill. In the latter case, PRO is controlled by a long distance controller. The fact that this is a legitimate interpretation for PRO provides strong support for the claim that PRO is a pronoun.

constructions.
In this chapter I have presented a case study of optional and obligatory control shift in two environments, both of which support the hypothesis that PRO is an empty pronoun. In section 6.2, we discussed control complements which allow a deontic reading; and in section 6.3 we discussed infinitival relatives.

I have shown that a deontic interpretation of controlled complements generally allows optional control shift, depending on the interpretation of the context. I also showed that when the context determines that the Deontic Authority is interpreted as the ‘core’ controller of a certain matrix verb, control obligatorily shifts to prevent a violation of binding principle B. We saw that deontic constructions involve raising of the embedded subject or a matrix internal argument to the subject position of the deontic expression, so that the subject of the modal expression and the DA always share the same domain. In control constructions this may lead to control shift because of principle B of the binding theory. We concluded from the parallel interpretations of lexical pronominal and implicit DAs that the latter must be an empty pronoun. Therefore, if the DA and PRO are both interpreted as the same matrix argument, while sharing a local domain, these constructions must be ruled out as ungrammatical, because pronouns cannot be bound in their local domain. Thus, when contextual factors force an interpretation of the DA as the ‘core’ controller, control for PRO must shift to the other matrix argument. In these deontic control clauses, both the DA and PRO invariably behave as genuine pronouns.

With respect to the infinitival relative constructions, I have shown that, parallel to the lexical subjects of their finite relative equivalents, PRO behaves as an operator-bound variable when it is the only empty argument in the embedded clause. In these cases, the interpretation of PRO is always that of the relativized matrix argument. It has furthermore been shown that in case of an empty object, it is this object which behaves as an operator-bound variable and is obligatorily interpreted as the relativized matrix argument. In this case, PRO is a genuine pronoun, which cannot be controlled by this same matrix argument, since the object variable and PRO are in the same local domain, and variables may not be A-bound. Thus, in these cases obligatorily control shift prevents a violation of principle C of the binding theory.

In conclusion, in this chapter I have shown that control shift phenomena in deontic modal and infinitival relative environments support the claim that PRO is a pronoun.
IV Conclusions
This book is a study of the nature and distribution of the unexpressed subject (PRO) in embedded non-finite and verbless clauses. The languages under investigation are mainly Modern English and Dutch, although other languages have been included in the discussion to support various claims made in the course of this study. I give support for the claim that the nature of PRO is that of a pronoun. With respect to its distribution, I share the traditional view that PRO only occurs as the subject of non-finite and verbless clauses which constitute an independent binding domain. I argue, however, that in these positions PRO is not Caseless, but structurally licensed by being assigned nominative Case by the embedded Tense head. I claim that PRO is minimally content-licensed for arbitrary (i.e. generic or indefinite) reference by non-agreeing morphology, such as Dutch te and -en and English to and -ing, and licensed for referential content by control, i.e. a coreference relation between PRO and an argument in the higher clause. Examples of 'uncontrolled' PRO, long distance control and of control shift have been provided in support of the view that PRO is a pronoun.

In chapter 1 I introduce the theoretical background on which the present analysis is based. I have chosen the framework of generative linguistics, because this approach motivates the structural presence of empty subjects by the wish to represent lexical information syntactically, as defined in the Projection Principle and the Theta Criterion. The syntactic representation of empty arguments, however, must be licensed by structural Case assignment to a member of their chain and by content identification of their agreement features or φ-features. I conclude in the first chapter that the traditional Government Binding (cf. Chomsky 1981) analysis of
PRO as a pronominal anaphor (cf. Chomsky & Lasnik 1977; Chomsky 1981) cannot be correct for two reasons.

The first objection concerns the nature of PRO, namely the hypothesis that PRO is a pronominal anaphor. I argue that the referential properties of PRO are only seemingly anaphoric. Instead, I propose that these apparent anaphoric properties of PRO are to be reduced to the need of local \( \phi \)-feature identification for all pronouns and by the semantic requirements of control relations.

The idea that PRO is a pronominal anaphor seems compatible with the observation that it is almost always an argument in the next higher clause which functions as the controller for PRO. As the embedded clause itself is an independent binding domain, it was concluded that PRO must have pronominal properties, but as the controller could not be in the wider context beyond the immediately dominating clause, PRO must also have anaphoric properties. However, this approach cannot account for the fact that PRO also occurs without a lexical controller. Therefore, I propose that PRO is a pronoun throughout all its occurrences, and show that its apparent anaphoric interpretations are similar to the default interpretations of lexical pronominal subjects in equivalent finite sentences.

The second argument against the GB-analysis of PRO involves the structural licensing of PRO. As a pronominal anaphor, the application of binding conditions A and B leads to a contradiction, because PRO must be both bound and free in the same local domain, i.e. the governing category. Therefore, it was concluded (cf. Chomsky 1981) that the distribution of PRO must be over ungoverned positions only (i.e. the PRO-theorem). If government of a certain position is necessary for Case-assignment to that position, as is one of the main claims of GB-theory, PRO cannot be structurally licensed if its distribution must be over ungoverned positions. In GB-theory PRO is structurally licensed by stipulation, since PRO is explicitly included in the Visibility Condition, which holds that all syntactically represented (empty) arguments must have a structural Case position in their chain. In order to avoid this stipulation with respect to PRO, I follow Chomsky and Lasnik (1993) by assuming that if PRO is syntactically represented it must also be assigned structural Case.

In chapter 2 I discuss various alternative proposals from the literature with respect to the nature of PRO. I conclude that the pronominal anaphor approach is not adequate, even when the local domains for binding have been analyzed as two different domains. For, whereas the pronominal properties of PRO can always be demonstrated, since a lexical controller, if any, is located outside the
minimal domain of PRO, its anaphoric properties cannot be demonstrated when no lexical controller is present.

Therefore, I conclude that a purely anaphoric analysis of PRO is not adequate, either, since this would mean that PRO always needs a lexical controller in a local domain. Examples of uncontrolled PRO show that this is not correct. In terms of government analyses, we also encounter the problem of accusative Case assignment into a transparent, anaphoric domain (cf. Koster 1984). As PRO subjects generally do not alternate with lexical accusative subjects, I conclude that the embedded controlled clause is an independent domain for A-movement and Case assignment. We have furthermore defined the embedded controlled clause as the local domain for binding relations, involving the notion of Complete Functional Complex (cf. Chomsky 1986b).

In the final section of chapter 2 I propose a purely pronominal analysis of PRO. I propose that PRO is content-licensed in two ways. PRO is licensed for arbitrary reference by minimally identifying non-finite morphology with underspecified agreement features. Second, PRO is licensed for referential content by a higher argument in its control domain (cf. Huang 1989).

In chapter 3 I discuss the distribution of PRO, and show that PRO is licensed in subject positions of non-finite and verbless clauses. I argue that PRO is structurally licensed by nominative Case. I claim that there is a language specific requirement for languages like Dutch and English, such that a lexical nominative subject is only licensed in the presence of finiteness or [+specified] agreement features. This proposal is supported by data from languages like Icelandic, Portuguese, Modern Hebrew (MH) and Modern Standard Arabic (MSA). Icelandic data show that PRO heads Case chains of both quirky and structural nominative Case, which appears on floating quantifiers. Icelandic data also show that predicate agreement only occurs when the predicate is related to a subject with structural nominative Case. As this type of agreement also occurs when the subject is PRO, we may conclude that PRO is assigned structural nominative Case. Portuguese data show that in the absence of finiteness, [+specified] agreement features allow the lexicalization of nominative subjects. Data from languages like MH and MSA show that these languages do not require finiteness or [+specified] agreement features for their subjects to be lexicalized. Therefore, I conclude that in both non-finite and verbless clauses a(n abstract) Tense head assigns structural nominative Case to the subject in its specifier position.

In chapter 4 the licensing of PRO in non-verbal Small Clauses is
extended to the licensing of PRO in Small Clauses in general. In this chapter I present a case study of the Dutch causative and permissive verb laten (let/have). I argue that laten may have either a montransitive argument structure or a ditransitive argument structure. In the former case, the embedded subject is part of an Acl-construction, and marked for accusative Case by raising to the object position of the higher clause. In the latter case, the embedded subject of the infinitival complement is analyzed as a PRO subject, controlled by the higher indirect object. The PRO subject of the infinitival complement to laten is argued to be licensed in the same way as the PRO subject in other SCs, with this difference that PRO in laten constructions may be left uncontrolled, because the infinitival ending may minimally identify the content of PRO as generic or indefinite. It is furthermore argued that English let/have constructions with an infinitival complement may be analyzed in the same way. The fact that English always licenses the indirect internal argument as an accusative DP is explained as an idiomatic feature of English, since this language has more verbs which require their indirect objects to be realized as an accusative DP when they are combined with a clausal complement (e.g. promise, tell). The fact that English does not allow the indirect internal argument of let/have to remain implicit is argued to be related to the fact that PRO cannot be identified by a bare infinitive, since bare infinitives do not have identifying infinitival morphology in English.

In chapter 5 I discuss some proposals from the literature with respect to the interpretation of PRO. This discussion shows that the referential properties of PRO cannot be captured uniformly in a syntactic approach, supporting my view that PRO is not a syntactic anaphor, but a pronoun. It is also shown that a semantic approach on the basis of the lexical properties of the matrix control verb alone is not sufficient to account for the variety of control relations, either. I show that discourse factors, like modal interpretations and quantifying expressions like together, also have their influence on the actual control relations. The fact that even discourse factors are involved in establishing the actual reference of PRO gives further support to my hypothesis that PRO is a pronoun, because the referential interpretation of lexical pronouns also depends on contextual factors, while the interpretation of anaphors is syntactically determined. Therefore, although the referential relations between PRO and its controller(s) must be compatible with the syntactic binding principle B, the actual reference of PRO is not determined by this syntactic principle. Instead, in order to establish the actual reference of the empty pronoun PRO contextual factors
must taken into account as well. A detailed investigation of these contextual factors, however, is beyond the scope of the present study, the main focus of which has been the syntactic nature and distribution of PRO.

In chapter 6, I present a case study of two different types of control shift, which provide further support for the hypothesis that PRO is a pronoun. It is shown that both in deontic modal complement clauses and in infinitival relatives, the reference of PRO may, or even must shift when the interpretation of another (implicit) argument in the local domain of PRO would otherwise lead to a violation of binding principles B and C, respectively. If PRO were an anaphor, we expect that it is always controlled by the closest $\phi$-feature matching antecedent. The fact that the control relation of PRO may shift shows that the controller need not be the closest matching antecedent and supports the view that PRO is a pronoun.

As to the perspectives of further research, the hypothesis that PRO is a pronoun may be tested by data from language acquisition. (cf. Wexler 1992 and references cited there).

In conclusion, the characterization of PRO as an empty pronoun has been shown to be instrumental in solving the three main problems of earlier accounts of PRO mentioned in the introductory chapter, namely, unbound PRO, a locality domain for PRO and the syntactic visibility of PRO. If PRO is a pronoun, independent reference is expected, provided the empty pronoun is formally licensed and identified for content. We have seen that PRO is sometimes minimally content-identified by non-finite morphology in its local domain, the embedded clause. We have also seen that for a referential identification, PRO is controlled by an argument in its control domain, which is outside the local binding domain, hence compatible with the pronominal nature of PRO. Finally, I argued that PRO is formally licensed by structural nominative Case, so that by being assigned structural nominative Case, PRO automatically meets the Visibility Condition.
References

Bennis, H. and T. Hoekstra (1989b). 'Why Kaatje was not Heard Sing a Song'. In Jaspers et al. (eds.), 21-40.
REFERENCES


Inquiry 18, 321-337.
REFERENCES

Linguistic Inquiry 20, 365-424.
MA: MIT, 19-40.
Inquiry 17, 501-557.
Linguistic Inquiry. 18, 267-310.
Complementation’. Studia Linguistica 51, 1-49.
MA: Ginn.
Language and Linguistic Theory 5, 561-601.
Language 67, 63-113.
Arguments’. Natural Language and the Linguistic Theory 9, 327-363.
REFERENCES

Kluwer.
Samenvatting

Dit boek is een studie naar de syntactische aard en distributie van verzwenen subjecten (PRO) in niet-finiete en werkwoordssloze bijzinnen. Het onderzoek speelt zich af binnen de kaders van de generatieve grammatica. Ik heb mij bij het onderzoek vooral geconcentreerd op taaldata uit het Modern Engels en Nederlands, maar voor zover dit nuttig was ter ondersteuning van bepaalde stellingen heb ik ook gebruik gemaakt van data uit andere talen. De hoofdthese met betrekking tot de syntactische aard van PRO is dat PRO een leeg pronomen is, dit in tegenstelling tot andere voorstellen waarbij PRO geanalyiseerd wordt als anafoor of als pronominale anafoor.

Voor wat betreft de distributie van PRO deel ik de traditionele overtuiging dat PRO alleen voorkomt op de subjectpositie van niet-finiete en werkwoordssloze bijzinnen, die een onafhankelijk bindingsdomein vormen. Ik beargumenteer echter dat deze posities niet ‘casus-loos’ zijn, maar dat er structurele nominatief casus wordt toegekend aan deze posities door het hoofd van de niet-finiete Tense projectie uit de ingebedde zin. Mijn claim is dat de inhoud van PRO syntactisch minimaal geïdentificeerd kan worden voor een arbitraire (d.i. een generieke of indefiniete) interpretatie door niet-congruerende morfologie zoals het infinitivale morfeem to in het Engels, de morfemen te en –en in het Nederlands en het –ing morfeem van de Engelse gerund, terwijl de referentiële betekenis van PRO wordt verkregen door middel van controle, d.i. een (co)referentiële relatie tussen PRO en een argument in de hogere zin. Voorbeelden van ‘ongecontroleerde’ PRO subjecten, controle door een argument op lange afstand en verschuivende controle relaties ondersteunen de stelling dat PRO een pronomen is.

In hoofdstuk 1 wordt het theoretisch kader geïntroduceerd. Ik heb gekozen voor het kader van de generatieve grammatica, omdat deze

De eerste reden is gerelateerd aan de aard van PRO, namelijk de stelling dat PRO tegelijkertijd pronominaal en anaforisch eigenschappen heeft. Het idee dat PRO een pronominaal anafoor is, lijkt compatibel met het feit dat PRO vaak geïnterpreteerd wordt als een argument uit de hogere zin, zodat het vrij is in zijn eigen domein, net als een lexicaal pronomen, maar gebonden in een ander domein, net als een lexikale anafoor. Als PRO echter altijd anaforische eigenschappen heeft, dan is het moeilijk te verklaren waarom in veel gevallen PRO geen lexikale controleur hoef te hebben.

In dit onderzoek laat ik zien dat de referentiële eigenschappen van PRO alleen maar anaforisch lijken. Ik schrijf deze schijnbare anaforische eigenschappen van PRO toe aan een algemene eigenschap van (lege) pronamina, namelijk dat ze lokaal geïdentificeerd moeten worden voor hun congruentie kenmerken. Aangezien de congruentiekenmerken binnen het lokale domein van PRO onderspecificeerd zijn, moet voor een referentiële betekenis een controlerelatie gevormd worden tussen PRO en een hoger argument.

Het tweede argument tegen de GB-analyse van PRO houdt verband met de syntactische licensing van het lege PRO-subject. De typering van PRO als een pronominaal anafoor leidt tot een contradictie binnen de GB-theorie (Chomsky 1981), omdat pronamina vrij en anaforen gebonden moeten zijn in hetzelfde lokale domein, de governing category (GC). Om deze contradictie te vermijden is er geconcludeerd (cf. Chomsky 1981) dat PRO ongeregereerd moet zijn (d.i. het PRO-theorema). Twee van de basisassumpties van de GB-theorie zijn echter dat geregereerd worden noodzakelijk is voor Casus-toekenning en dat structurele Casus argumentketens zichtbaar maakt in de syntaxis (d.i. de Visibility
Condition). Als PRO niet geregeerd wordt, dan kan zijn A-keten niet structureel gefiatteerd worden, omdat geen enkele schakel in die keten Casus krijgt. In de GB-theorie, wordt de casusloze PRO d.m.v. een stipulatie opgenomen in deze Zichtbaarheidsconditie. Om zo’n stipulatie te voorkomen volg ik Chomsky & Lasnik (1993), waar aangenomen wordt dat PRO, net als andere hoofden van A-ketens structurele casus moet worden toegekend.

In hoofdstuk 2 bespreek ik verschillende voorstellen uit de literatuur m.b.t. de syntactische aard van PRO. Ik concludeer dat een analyse van PRO als pronominale anafoor niet adequaat is, zelfs niet wanneer het lokale domein voor pronominale eigenschappen en anaforische eigenschappen verschillend is. Hoewel het aangetoond kan worden dat de pronominale eigenschappen van PRO altijd aanwezig zijn, omdat het minimale domein van PRO zo gedefinieerd kan worden dat een eventuele lexikale controleur altijd buiten dat domein valt, blijkt het dat PRO soms niet eens schijnbare anaforische eigenschappen heeft, namelijk wanneer er geen lexikale controleur is.

Daarom trek ik de conclusie dat een puur anaforische analyse van PRO ook niet adequaat is, omdat we dan verwachten dat er altijd een lexicale controleur voor PRO zal zijn in een lokaal domein. De voorbeelden van ‘ongecontroleerde’ PRO-constructies laten zien dat dit niet correct is. M.b.t. analyses die beweren dat PRO soms op geregeerde posities staat hebben we nog het extra probleem van structurele accusatieve casus (cf. Koster 1984). Die wordt namelijk toegekend door het hogere werkwoord aan een transparante ingebedde subjectpositie. Omdat PRO subjecten over het algemeen niet alterneren met lexikale accusatieve DPs concludeer ik dat de ingebedde controle zin altijd een onafhankelijk domein is voor A-verplaatsing en casustoekening. Verder hebben we de ingebedde controle-zin gedefinieerd als het lokale domein voor bindingsrelaties, met gebruikmaking van de notie Complete Functional Complex uit Chomsky (1986b).

In het laatste deel van hoofdstuk 2 stel ik voor om PRO te analyseren als een puur pronom. Mijn voorstel is dat de inhoud van PRO op twee manieren geïdentificeerd kan worden. Ten eerste kan PRO een arbitraire interpretatie krijgen doordat niet-finitie morfologie met ondergespecificeerde congruentie kenmerken de inhoud van PRO minimaal kan identificeren. Ten tweede wordt PRO geïdentificeerd voor referentiële betekenis via controle van een hoger argument in het controle domein van PRO (cf. Huang 1989). Verder stel ik voor dat PRO formeel gefiatteerd wordt door structurele nominatieve casus. Dit laatste wordt meer in detail
uitgewerkt in het volgende hoofdstuk.

In hoofdstuk 3 bespreek ik de distributie van PRO. Ik laat zien dat PRO alleen voorkomt op subjectposities van niet-finiete en werkwoordsloze bijzinnen. Ik beargumenteer aan de hand van taaldata uit het IJslands dat PRO in infinitivale constructies structureel geïdentificeerd wordt door nominatief casus. Mijn claim is dat er taalspecifieke verschillen zijn m.b.t. de criteria voor de licensing van een lexikaal nominatief subject. Met voorbeelden uit het Portugees en verwijzingen naar Scandinavische talen laat ik zien dat kenmerken als gespecificeerde congruentie of finiteitheid vereist zijn voor lexikaal gerealiseerde nominatieve subjecten in deze talen. Data uit het Modern Hebreeuws en Modern Standaard Arabisch laten zien dat deze talen lexikale nominatieve subjecten toestaan zonder de eis van finiteitheid of gespecificeerde congruentie kenmerken. Op basis van deze taaldata kom ik tot de conclusie dat zowel niet-finiete als werkwoordsloze bijzinnen een (abstracte) Tense projectie hebben, waarvan het hoofd structurele nominatief casus toekent aan het (lege) subject in zijn lokale specifiekerder.

In hoofdstuk 4 wordt de licensing van PRO in werkwoordsloze Small Clauses uitgebreid naar alle soorten Small Clauses (SC). In dit hoofdstuk geef ik een case study van het Nederlandse causatieve en permissieve werkwoord laten. Ik laat zien dat laten zowel een monotransitieve als een ditransitieve argumentstructuur kan hebben. In het eerste geval is het ingebdedde subject deel van een Acl-constructie, en krijgt het accusatief casus van buiten af. In het tweede geval, wordt het ingebdedde subject van het infinitieve complement geanalyseerd als een PRO-subject, dat gecontroleerd kan worden door het hogere indirect object. PRO in een laten-complement wordt geïdentificeerd op dezelfde manier als PRO in andere SCs, met dit verschil dat PRO in laten-complementen ongecontroleerd mag blijven, omdat het infinitief morfeem –en de inhoud van PRO minimaal kan identificeren als generiek of indefiniet. Verder wordt er beargumenteerd dat de Engelse let/have constructies op dezelfde manier kunnen worden geanalyseerd. Het feit dat het Engels het indirecte object altijd realiseert als een accusatieve DP wordt uitgelegd als een idiomatisch kenmerk van het Engels, dat ook bij andere werkwoorden voorkomt wanneer een indirect object het co-argument is van een geselecteerde bijzin (bijv. promise, tell). Het feit dat het Engels geen impliciete indirecte objecten toelaat in deze constructies wordt beschouwd als een ondersteuning voor de stelling dat niet-congruerende morfologie van infinitieve de inhoud van PRO minimaal kan identificeren, terwijl in afweging van zulke morfologische kenmerken PRO aangewezen is op een lexikale
SAMENVATTING

259

controleur.

In hoofdstuk 5 bespreek ik enkele voorstellen uit de literatuur m.b.t. de interpretatie van PRO. De discussie laat zien dat de referentiële eigenschappen van PRO niet eenvoudig te vatten zijn in een puur syntactische benadering. Dit ondersteunt de stelling dat PRO geen syntactische anafoor is, maar een pronomen. Er wordt verder aangetoond dat een semantische analyse op basis van lexicale eigenschappen van het hoofdwerkwoord alleen ook niet voldoende is om de variëteit aan controllerelaties te verklaren. Ik laat zien dat contextuele factoren, zoals modale interpretaties en kwantificerende uitdrukkingen als _samen_, duidelijk invloed op de feitelijke controllerelaties uitoefenen. Het feit dat zelfs contextuele factoren van invloed zijn op de precieze interpretatie van PRO geeft verdere ondersteuning voor mijn theses dat PRO een pronomen is. Dus, hoewel de referentiële relaties tussen PRO en zijn controleur(s) compatibel moeten zijn met principe B van de Bindingstheorie, kan de precieze interpretatie van PRO niet worden afgeleid door dit principe. Een gedetailleerd onderzoek naar de werking van deze contextuele factoren valt echter buiten de kaders van dit onderzoek, dat vooral een analyse biedt van de syntactische aard en distributie van PRO.

Hoofdstuk 6 bestaat uit een case study van twee verschillende typen controle verschuiving (control shift). Beiden ondersteunen de hypothese dat PRO een pronomen is. Ik laat zien dat zowel in deontisch modale bijzinnen (bijv. iets _mogen/mogen_ van iemand) als in infinitivale betrekkelijke bijzinnen de referentie van PRO mag, of soms zelfs moet verschuiven, vanwege de interpretatie van een ander (leeg) argument in dezelfde bijzin. In het geval van deontisch modale bijzinnen moet controle verschuiven wanneer de zgn. deontische autonomiteit geïnterpreteerd wordt als de ongemarkeerde controleur. De verschuiving in controle relaties vanwege deontische interpretaties is een manier om een schending van bindingsprincipe B te voorkomen. In het geval van betrekkelijke bijzinnen met zowel een lege objectpositie als een lege subjectpositie, moet de relatie verschuiven ter voorkoming van een schending van bindingsprincipe C. De reden hiervan is dat het lege object een variable is, die niet gebonden mag zijn aan het PRO-subject dat zich immers op een A-positie bevindt. Als PRO een anafoor was, verwachten we dat het altijd gecontroleerd zou worden door het dichtbijzijnde passende antecedent. Het feit dat controllerelaties mogen verschuiven laat zien dat de controleur niet altijd het dichtbijzijnde antecedent hoeft te zijn. Dit ondersteunt nogmaals het idee dat PRO een pronoun is.

Met betrekking tot verder onderzoek zou de hypothese dat PRO
een pronom is, getest kunnen worden door data van taalverwervingsprocessen (zie Wexler 1992 en bibliografische gegevens aldaar).

De conclusie van dit boek is dat de karakterisering van PRO als een leeg pronom een oplossing blijkt te bieden voor drie hoofdproblemen uit eerdere analyses van PRO, zoals beschreven in het inleidende hoofdstuk, namelijk, ongebonden PRO, een lokaliteitsdomein voor de bindingseigenschappen van PRO en de syntactische zichtbaarheid van PRO. Als PRO een pronom is dan is het te verwachten dat het een onafhankelijke interpretatie kan krijgen, vooropgesteld dat het pronom formeel en inhoudelijk is geïdentificeerd. We hebben gezien dat PRO soms minimaal geïdentificeerd kan worden door niet-finiete morfologie in zijn lokale domein. We hebben ook gezien dat voor een referentiële identificatie PRO gecontroleerd moet worden door een lexicaal argument in zijn controle domein, dat zich buiten het lokale domein van PRO bevindt en dus compatibel is met de pronominale aard van PRO. Tenslotte heb ik beargumenteerd dat PRO formeel gessiaterd wordt door structurele nominatieve casus, zodat PRO zichtbaar is voor de syntax.