Binding Theory

*Binding Theory* seeks to explain how different kinds of nominal expressions such as names, noun phrases, and pronouns have anaphoric relations among one another, and how they come to have reference to things in the world. This textbook provides a thorough and comprehensive introduction to modern Binding Theory. Starting at a very basic level, it introduces the reader to a huge variety of nominal and especially pronominal expressions from the world’s languages, the ways they can be used, and current theorizing about their grammatical properties and their interpretation. Daniel Büring discusses a wide range of cross-linguistic data and theoretical approaches, and, unlike in existing introductions, pairs the discussion of syntactic facts with a detailed introduction to the semantic interpretation of binding structures. Written in a clear and accessible style, and with numerous exercises and examples, this textbook will be invaluable to graduate and advanced undergraduate students of syntax and semantics.

Daniel Büring teaches linguistics at the University of California, Los Angeles. He has published various influential articles in formal semantics, syntax, and pragmatics, in particular on intonational meaning, focus, and binding theory. He has previously published *The Meaning of Topic of Focus: The 59th Bridge Street Accent* (1997).
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Preface

This book presents a comprehensive treatment of the syntax and semantics of binding. It is meant to fill the gap between existing introductory texts, both semantic and syntactic, and the rich primary research literature on the topic. If you work your way through this book, you should be able to read and understand almost any of the works mentioned in the references.

There are at least two reasons why I thought such a book may be useful. First, Binding Theory figures prominently in a vast amount of works, either as the main research topic, or, perhaps even more frequently, as a diagnostic for constituency, derivational history, and other abstract aspects of grammatical analysis. I felt that an accessible survey of some of the more recent insights into the nature of binding would benefit both those who read those studies, as well as those who want to undertake them in the future.

Second, by its very nature, Binding Theory involves an equal amount of syntax and semantics. As such, it recommends itself as the topic for an advanced level textbook. There is, I believe, no insightful syntactic analysis without a solid semantics to access its adequacy; in any event, there certainly can’t be any insightful analysis of the syntax of binding without a semantics to accompany it. The present book, therefore, is an introduction to doing syntactic and semantic analysis side by side. It attempts to show you how to do semantically realistic (or responsible) analysis; it will also show you how, at least in some cases, figuring in the semantics carefully may solve some problems that would seem recalcitrant from a purely syntactic point of view. It’s good old divide et impera.

The book is organized as follows: the first six chapters develop, in incremental steps, the basic system of NP classification, indexing, and interpretation. They each crucially build and expand on the content of the preceding ones, and should be tackled in that order. Chapters seven through twelve then extend the basic system in various, sometimes opposite, directions, and can be accessed mostly independently of each other; this structure is schematized in the chart below.

Within chapters, certain sections are marked as ⋄, for “extension”; these often contain more advanced and demanding material, and can be skipped without loss of coherence for later chapters (except possibly the ⋄-parts therein).
I have attempted to introduce explicitly every piece of machinery used in the analysis, and make all assumptions explicit. I have also included a fair number of exercises, especially in the earlier chapters, that should help to master the material, but also to discover problems and open ends. Despite that, I think that a certain familiarity with linguistic argumentation, as well as with formal syntactic and semantic analysis is required to read this book. Most introductory textbooks should provide the necessary background.

When Cambridge University Press invited me to write this book, I had taught ‘The Syntax and Semantics of Binding Theory’ at a couple of summer schools, and the plan was essentially to flesh out the existing course materials. In the process of writing the book, more and more literature made its way into these materials, and the scope of the book extended considerably. Still, this book is not a natural history of binding phenomena, especially not cross-linguistically, and makes no claim to do justice to the vast theoretical and especially descriptive literature, of which only a fraction is taken into consideration here. While I tried to use examples from many different languages, where I had sufficient sources, the primary language analyzed is English. And even there, I found that the reported judgments are often very subtle and highly controversial. I sincerely believe now that much more systematic primary work on establishing a firm data base needs to be done; as it is, I mostly report the data as given in the literature, pointing out points of controversy, and occasionally supplementing native speaker judgments I elicited.

There are also some areas that are omitted altogether in this book, mostly for reasons of space, among them the diachronic changes in anaphoric systems (van Gelderen [2000]; Keenan [2002]), as well as their acquisition in young children (Wexler and Manzini [1987], a.o.). Furthermore, older theoretical approaches to Binding Theory are not discussed, though they might often
facilitate understanding more recent approaches (I recommend the first chapters

More people than I can mention here have helped me in the process of writing
this book. I’d like to thank in particular Ed Keenan and Philippe Schlenker,
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Kim for helping with the final proofs. Special thanks go to Summer Kern, my
Herzallerliebste, for her support, encouragement, and patience, and for always
(perhaps reluctantly) being willing to double-check yet another sentence or two.
1 The ABC of Binding Theory

1.1 Preliminaries

1.1.1 Reference, coreference, and indexing

What is Binding Theory (BT) about? To a first approximation, BT restricts the distribution of NPs (or DPs, if you prefer) that have the same referent (starting with chapter 4, we will add non-referential NPs to the picture, which will be ignored until then). We will indicate sameness of reference, coreference for short, by coindexing; that is, coreferent NPs carry the same index, for which we use integers throughout. Thus in (1.1), the NP the baroness and the NP she are coindexed, which signals that they are coreferent, which in turn means that they have the same referent – they refer to the same person or thing – namely the actual baroness in flesh and blood:

(1.1) After \([NP \text{ the baroness}]_1\) had visited the lord, \([NP \text{ she}]_1\) left the house.

Note that on this understanding, BT is relevant for nominal categories only, and only for the maximal projections, i.e. NPs. As a convention we assume that two NPs corefer if and only if (iff) they are coindexed. Contra-indexing (or lack of an index on either NP) indicates non-coreference. This is illustrated in (1.2):

(1.2) (a) After \([NP \text{ the baroness}]_2\) had visited the lord, \(\text{she}_2\) left the house.
     (she=the baroness)
(b) After \([NP \text{ the baroness}]_1\) had visited the lord, \([NP \text{ she}]_2\) left the house.
     (she≠the baroness)

It should be noted that the actual choice of integer is irrelevant; (1.1) expresses the same coreference pattern as (1.2a) (as would any sentence in which both occurrences of the index are replaced by the same integer). An NP marked 1 is in no sense prior, higher, or superior to one marked 2. All that matters is which NPs have the same index, and which do not.

1 The latter aspect I consider a genuine fact about Binding Theory. On the view pursued here, indexing on non-maximal projections (e.g. signalling specifier-head agreement or head-movement dependencies) simply is not subject to Binding Theory and should be kept separate from it. As for the former aspects, though there are sentential and adverbial (i.e. PP-) anaphors, little work on their distribution has been done, and we will ignore them here (see e.g. Hegarty et al. [2001] and the references therein).
In traditional grammars, the NP *the baroness* in (1.1) is referred to as the *antecedent* of the pronoun *she*. We adopt the following:

(1.3) Definition: Antecedent

\[ A \text{ is the antecedent of } B \text{ iff (if and only if) (i) } A \text{ precedes } B, \text{ and (ii) } A \text{ and } B \text{ corefer.} \]

By our convention, an NP will be coindexed with its antecedent (if it has one). This holds for coreferring NPs within a single sentence, and across sentences. The latter, however, are usually not subject to Binding Conditions of the sort discussed here.\(^2\)

### 1.1.2 The basic data

Restricting our attention to singular NPs for the time being, two NPs in a given sentence will show one of three logically possible coreference relations (Reinhart, 1983a: 29):

(1.4) (a) **obligatory coreference:** Zelda bores herself.
    (b) **obligatory non-coreference:** She adores Zelda’s teachers.
    (c) **optional coreference:** Zelda adores her teachers.

Given what was said before, grammatical representations for these will look like in (1.5):

(1.5) (a) Zelda\(_1\) bores herself\(_1\).
(b) She\(_8\) adores Zelda\(_{15}\)’s teachers.
(c) Zelda\(_4\) adores her\(_4\) teachers. or
    Zelda\(_4\) adores her\(_7\) teachers.

Ungrammatical representations for (1.4a) and (1.4b) are given in (1.6):

(1.6) (a) *Zelda\(_1\) bores herself\(_2\).*
(b) *She\(_8\) adores Zelda\(_8\)’s teachers.

It will be convenient to summarize patterns as in (1.5) and (1.6) as shown in (1.7), whose logic should be transparent:

(1.7) (a) Zelda\(_1\) bores herself\(_1/\_2\).*
(b) She\(_8\) adores Zelda\(_{15/\_8}\)’s teachers.
(c) Zelda\(_4\) adores her\(_4/\_7\) teachers.

The key insight captured in BT is that the (un)availability of coreference between two NPs crucially depends on two factors:

\(^2\) See e.g. Grosz *et al.* (1995); Gundel *et al.* (1993); Walker *et al.* (1998) and the references therein for some discussion of trans-sentential anaphora.
• the morphological shape of the NPs
• the structural relation between the NPs

This is not meant to exclude the possibility of additional factors that influence coreference options (which will be discussed especially in chapters 3 and 11). First, however, we will introduce the relevant NP-types of English and then, in turn, explore and characterize the syntactic configurations in which they require, allow, or disallow coreference.

### 1.1.3 Three types of NPs

Virtually all approaches to BT in English distinguish three types of NPs by (mostly) morphosyntactic criteria. These are illustrated in (1.8a–1.8c):

**(1.8)**

(a) reflexives and reciprocals (‘anaphors’):
   himself, herself, itself, themselves, myself, yourself, ourselves, yourselves
   each other, one another

(b) non-reflexive pronouns (‘pronominals’):
   he, she, it, him, her, I, us, you, me, his, your, my, our

(c) full NPs including names (‘r-expressions’):
   the baroness, Peter, this, a disinherited Russian countess . . .

In parentheses I have given the terms for these categories as used in the influential work of Chomsky (e.g. 1981) and his school: anaphor, pronominal, and r-expression (with \(r\) reminiscent of ‘referential’). For the first two, a cautionary remark is in order, because they unfortunately provide potential for confusion: traditionally the term *anaphor* (often with the plural *anaphors* rather than *anaphora*) is used for any NP, reflexive or not, that has an antecedent. Likewise, the term *pronominal* invites confusion with the traditional notion of *pronoun*, which applies to reflexive and non-reflexive pronouns alike. We will thus stick to the terms ‘reflexive/reciprocal’, ‘non-reflexive pronoun’, and ‘full NP’ in the remainder of this book.

We will now motivate this tripartition, starting with reflexives versus the rest (reciprocals, being necessarily plural, will not be discussed until chapter 10). Consider the sentences in (1.9):

**(1.9)**

(a) That it rains bothers Peter.
(b) That it rains bothers her/him.
(c) *That it rains bothers himself/herself.

All these sentences contain but one referential NP (the expletive *it* is of no interest to BT, since it lacks a referent – and perhaps semantic content in general). We can thus omit the indexing for expository convenience, given that no coreference is involved. We simply observe that reflexives cannot occur in this configuration, while both non-reflexive pronouns and full NPs can.
Table 1.1 Distribution of the three NP-types

<table>
<thead>
<tr>
<th>configuration</th>
<th>ex.</th>
<th>reflexive</th>
<th>non-reflexive</th>
<th>full NP</th>
</tr>
</thead>
<tbody>
<tr>
<td>no antecedent</td>
<td>(1.9)</td>
<td>*</td>
<td>ok</td>
<td>ok</td>
</tr>
<tr>
<td>non-local antecedent</td>
<td>(1.11)</td>
<td>*</td>
<td>ok</td>
<td>*</td>
</tr>
<tr>
<td>local antecedent</td>
<td>(1.10)</td>
<td>ok</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

Inversely, only reflexives, but neither non-reflexives nor full NPs, are permitted in (1.10):

(1.10) (a) *Peter₃ watches Peter₃ in the mirror.
(b) *Peter₃ watches him₃ in the mirror.
(c) Peter₃ watches himself₃ in the mirror.

(Note that the two occurrences of Peter in [1.10a] are coindexed, indicating that we speak about the same Peter. The sentence is presumably acceptable if I point at a different Peter upon using the names, just as [1.10b] is of course grammatical if the pronoun is not coindexed with the name.)

Let us finally turn to the difference between non-reflexive pronouns and the rest, illustrated by way of the sentences in (1.11):

(1.11) (a) *Carla₄ thinks that I hate Carla₄.
(b) Carla₄ thinks that I hate her₄.
(c) *Carla₄ thinks that I hate herself₄.

Here, reflexives pattern with full NPs, and in contradistinction to non-reflexive pronouns. Note that the difference between (1.10) and (1.11) is not the absence versus presence of an antecedent (there is one in each), but seems to be one of syntactic locality: the antecedent NP is within the same clause as the anaphor in (1.10), but in a higher clause in (1.11). We summarize these (preliminary) results in table 1.1. What is clear from this table is that at least this three-way distinction needs to be recognized to distinguish correctly the coreference options of NPs in English. Notice also that reflexive and non-reflexive pronouns seem to be in complementary distribution. We will now characterize the conditions for coreference for the three types of NPs in turn.

1.2 Binding

1.2.1 Reflexive and non-reflexive pronouns

We observed above that reflexive pronouns require an antecedent, and an antecedent within their local clause at that. This is illustrated in more detail in (1.12):
Turning now to non-reflexive pronouns, recall that they can occur with or without a sentence-internal antecedent, cf. (1.13), as long as the antecedent is not in the same local clause, cf. (1.13c):

Based on these data we formulate our first version of the Binding Conditions:

Exercise 1.1

In the following sentences, $\Phi$ designates an NP with the index given. For each sentence, determine by intuition what $\Phi$ can/must be (there may be more than one option in some cases). Then give the local clause and the antecedent for $\Phi$ and demonstrate that the Binding Conditions in (1.14) are met (example: $\Phi_3$ in [1.16a] must be himself, its local clause is the matrix S/IP, and its antecedent is Peter, which is, correctly, in the same local clause):

1.2.2 Binding and binder

Before going on, we need to refine our previous treatment in one small but significant way. To see why, consider (1.17):
have to choose a non-reflexive pronoun to express coreference. This is in marked contrast to our earlier example (1.10), repeated here, which led to the formulation of the Binding Conditions above:

(1.18) Peter₃ watches himself₃/#him₃ in the mirror.

One difference is that Peter and himself in (1.18) are clausemates, whereas Carlotta and her(self) in (1.17) are not – Carlotta is the possessor to the subject, but only the subject and her(self) are clausemates. We can flesh out the notion ‘clausemate’ in various ways, e.g. as ‘be arguments to the same predicate’ (here: watch), or ‘be immediate constituents of the same clause,’ with subtly different results, as we will discuss immediately in sections 1.2.4 and 1.3.

Postponing a precise definition of clausemate, let us say that only an antecedent which is a clausemate to an NP can be a binder for that NP:

(1.19) Binding (preliminary): NP₁ binds NP₂ if and only if (iff)
(a) NP₁ and NP₂ are coindexed
(b) NP₁ precedes NP₂
(c) NP₁ and NP₂ are clausemates.
Then NP₁ is the binder of NP₂, and NP₂ is bound (by NP₁).

(1.19a) and (1.19b) are the same as in the definition of antecedent in (1.3) above, but clause (1.19c) is added. A binder, then, is simply an antecedent that is a clausemate of the bindee. We now replace the notion of ‘have an antecedent’ with the notion of ‘be bound’ in the Binding Conditions:

(1.20) Binding Conditions (still preliminary):
(A) A reflexive pronoun must have a binder within its local clause.
(B) A non-reflexive pronoun must not have a binder within its local clause.

In (1.18), repeated in (1.21a) below, Peter qualifies as a binder with respect to the pronoun in the object position of watch – it is coindexed with it, precedes it, and, being the subject of watch, is a clausemate. Hence Binding Condition A licenses a reflexive in object position, and Binding Condition B prohibits a non-reflexive. All’s well:

(1.21) (a) Peter₃ watches himself₃/#him₃ in the mirror.
(b) Carlotta₁₁’s dog accompanies her₁₁/#herself₁₁ to kindergarten.

In the formerly problematic example (1.17), repeated in (1.21b) above, Carlotta is not a binder to the pronoun in the object position of accompany (though it is an antecedent); it is coindexed with it, and precedes it, but, being a modifier to dog rather than an argument to accompany, it fails on the clausemate condition in the definition of binder (1.19c). Binding Condition A thus prohibits a reflexive, and Binding Condition B allows a non-reflexive.
### 1.2.3 Full NPs

Turning now to full NPs, we observed that they cannot occur with a sentence internal antecedent at all, regardless of whether the antecedent occurs within the same local clause or not. The relevant data are repeated here:

(1.22)  
(a) That it rains bothers Peter. (no antecedent)  
(b) *Carla/she thinks that I hate Carla. (non-local antecedent)  
(c) *Peter/he watches Peter in the mirror. (local antecedent)

The question that comes up is whether full NPs are allergic to antecedents, or just binders. To decide that question we have to look again at a case in which an NP antecedes a full NP without actually binding it, for example (1.23):

(1.23)  
(a) Her dog accompanies Carlotta to kindergarten.  
(b) ?Carlotta’s dog accompanies Carlotta to kindergarten.  
(c) Carlotta’s dog accompanies the little darling to kindergarten.

The pronoun in (1.23a) antecedes the full NP with no loss in acceptability. And even another full NP can, as in (1.23b), which is slightly degraded due to the repetition of the name, but head and shoulders above (1.22b); and (1.23c), which features an epithet, i.e. a definite NP which is coreferential with, though different in descriptive content from, its antecedent, is impeccable.

We conclude that, just as in the principles governing the coreference options of pronouns, the principle responsible for full NPs must make reference to the notion of binding, rather than antecedence:

(1.24) Binding Condition C: A full NP must not be bound.

I should like to point out here that the judgments in (1.23), while widely accepted, are not uncontroversial. Generally, name–name cases (Peter ... Peter) seem more acceptable than pronoun–name cases (he ... Peter) and for many speakers approach the degree of acceptibility found in examples like (1.22b) (cf. e.g. Bach and Partee [1980], note 11; Evans [1980]:356 a.o.). This can be seen as a phenomenon outside of grammar (after all, in the double name cases, the coreferential reading is the only way to interpret the sentence at all, while in the pronoun–name cases, there is a host of grammatical non-coreferent readings) or as a fact about BT proper, suggesting that Binding Condition C should only ban full NPs from being bound by a pronoun Bach and Partee [1980]; Keenan [1974]; for further discussion see also Bresnan [2000], Lasnik [1986], as well as chapter 6. We will, for the time being, assume these cases to be unequivocally bad.

### 1.2.4 C-command

Before closing, we need to generalize the notion of binding slightly. As it stands, Binding Condition C does not exclude (1.22b), repeated here:

(1.25) *Carla/she thinks that I hate Carla.

The reason is that (the first occurrence of) Carla/she in (1.25) doesn’t bind the second in the technical sense defined in (1.19), because they are not clausemates:
they are not immediate constituents of the same clause, nor are they arguments to the same verb (think versus hate). We therefore replace the notion of clausemate by a more general, asymmetric, notion, that of c(onstituent)-command [Reinhart, 1976]:

\[(1.26) \text{ Node } A \text{ c-commands node } B \text{ in a phrase marker iff}
\begin{enumerate}
  \item \text{ neither dominates the other, and }
  \item \text{ every (branching) node that dominates } A \text{ also dominates } B
\end{enumerate}
\]

\[(1.27) \text{ Binding (revised, still preliminary): } \text{NP}_1 \text{ binds } \text{NP}_2 \text{ iff}
\begin{enumerate}
  \item \text{ } \text{NP}_1 \text{ and } \text{NP}_2 \text{ are coindexed}
  \item \text{ } \text{NP}_1 \text{ precedes } \text{NP}_2
  \item \text{ } \text{NP}_1 \text{ c-commands } \text{NP}_2
\end{enumerate}
\]

Then \text{NP}_1 \text{ is the } \text{binder} \text{ of } \text{NP}_2, \text{ and } \text{NP}_2 \text{ is } \text{bound} \text{ (by } \text{NP}_1)\text{.}

Let us first verify how these new definitions subsume the old ones. Take (1.21a), repeated here; a phrase structure tree for this sentence will have the essential constituency shown in (1.28):

\[(1.28) \text{ Peter}\_3 \text{ watches himself}\_3/\ast \text{him}\_3 \text{ in the mirror.}
\]

The only (branching) node dominating \([\text{NP} \text{Peter}]_3\) is S, which means that \([\text{NP} \text{Peter}]_3\) c-commands VP and everything dominated by VP, including \([\text{NP} \text{himself}]/\ast \text{him}_3\). Thus \([\text{NP} \text{Peter}]_3\) is a binder for \([\text{NP} \text{himself}]/\ast \text{him}_3\), and, given that it is in the same local clause, it is correctly predicted that the latter has to be a reflexive, rather than a full NP or a non-reflexive pronoun.

Contrast this with (1.21b) repeated here along with a simple tree diagram:

\[(1.29) \text{ Carlotta}_{11} \text{’s dog accompanies her}_{11}/\ast \text{herself}_{11} \text{ to kindergarten.}
\]

---

3 Definitions in the literature usually include the qualification ‘branching’, even though, as Barker and Pullum [1990] and Pullum [1986] note, this is rarely argued for, nor required, by the data in any obvious way. The cases discussed in this book provide no exceptions to that; indeed the notion of semantic binding to be introduced in chapter 4 directly embodies Pullum’s stricter and arguably more natural notion of IDV-command, according to which a constituent’s c-command domain simply consists of its sister constituent(s).
Here, NP₁₁, *Carlotta*, does not c-command VP or anything therein: nodes dominating NP₁₁ are NP₈ and S, which means that NP₁₁ merely c-commands the Ñ *dog*; VP, and the pronominal NP₁₁ within it, though dominated by S, are not dominated by NP₈, which means they are not dominated by *every* branching node dominating NP₁₁, *Carlotta*, as is required for binding due to (1.26b). Accordingly, [NP her(self)]₁₁ is not bound by [NP *Carlotta*]₁₁ by the new definition of binding, especially (1.27c), so that the Binding Conditions correctly predict a non-reflexive (or a name) in that position.

Crucially, the new definition of binding is ‘downward unlimited’, because an NP that c-commands a node A also c-commands every node dominated by A. This is the key to handling the Binding Condition C cases. Consider again (1.22b), repeated here:

(1.30)  *Carla₄/she₄ thinks that I hate Carla₄.*

Similar to (1.21a), the matrix subject NP₄, *Carla*, c-commands the matrix VP, *and everything dominated by the matrix VP*, including the object NP₄. Since the subject NP₄ is also coindexed with the object NP₄ and precedes it, it qualifies as a binder. Binding Condition C then excludes a name as the object NP₄, while Binding Condition B allows a non-reflexive pronoun in that position.

This completes our introduction to the ABC of Binding Theory for English. It should be stressed that the Binding Conditions as stated above are no longer
about the traditional, intuitive concept of antecedence, but about a more abstract concept, binding. Binding Theory, so construed, is then a theory only about a subset of anaphoric relations, excluding non-c-command anaphora, both across and within sentences. This embodies a strong and non-obvious hypothesis, namely that c-command, or some other command notion (more about which is discussed in section 1.3), is of utmost significance for BT, and that, accordingly, the data fall into two broad natural classes – binding versus non-c-command anaphora. We will continue to reflect upon the validity of these hypotheses in the course of this book.

On the other hand, if Binding Conditions are indeed based on the notion of c-command, they can serve as a probe into the phrase structure of a sentence: if an NP blocks the occurrence of a coindexed pronoun or full NP’, NP must c-command NP’. Binding Condition C in particular will be useful in this regard, since it applies across clause boundaries. It has been suggested, for example, that the pairs in (1.31) and (1.32) show that object clauses, but not temporal adverbial clauses, are c-commanded by the object, while both are c-commanded by the subject:

(1.31) (a) *The dog told him₁ [that the horse₁ would fall].
(b) The dog hit him₁ [while the horse₁ ate lunch].

(1.32) (a) *She₈’ll talk to me [when Sheila₈ gets back from lunch].
(b) I’ll talk to Sheila₈ [when she₈ gets back from lunch].

While this method can be useful, it should be applied with care, for at least two reasons: first, as pointed out in section 1.2.3 above, the unacceptability of bound full NPs is itself not uncontroversial, and judgments seem to vary between speakers, but also in response to prosodic, stylistic, and discourse-pragmatic factors (see e.g. Carden and Dieterich [1981]; and Gerken and Bever [1986] for experimental results). Second, subordinated clauses are often found in displaced positions (e.g. through topicalization or extraposition), or at least could be for all we know, so that our conclusions from such examples rely in turn on our conclusions about the interaction of Binding Conditions with displacement (more on which in chapter 12). We will suggest that the phenomenon of semantic binding, to be introduced in chapter 4, may provide a more reliable diagnostic for c-command. Since we are presently concerned with demarcating the conditions on binding themselves (rather than presupposing them to figure out constituency), we will for the most part ignore constructions whose constituent structure is itself subject to debate.

1.2.5 Taking stock

It will be useful to separate several parts or components of the theory, as these will be subject to criticism, revision, or modification later, independent of each other:
The classification of NPs according to their coreference and binding options. Here: three classes, reflexives and reciprocals (‘anaphors’), non-reflexive pronouns (‘pronominals’), non-pronominal or full NPs (‘r-expressions’).

• The identification of one or more domain(s) within which binding requirements apply. Here: the minimal clause.

• The formulation of a proper notion of command or accessibility as prerequisite for, and source of, asymmetry in binding. Here: precedence and c-command.

The general format of a Binding Condition can then be schematized as in (1.33):

(1.33) An NP of class must (not) be coindexed with a commanding NP within its domain.

Developing a general theory of binding is to formulate conditions of the general form in (1.33) for several languages, and in the process, to determine which exact values for the variables class, command, and domain are empirically most adequate, within a language, and cross-linguistically, and which are systematically irrelevant. In this book, we will be concerned with the notion of domain in chapter 3, the issue of classification in chapters 3 and 11, and the concept of command in section 1.3 of this chapter, as well as in chapter 12. Hopefully, the tripartition of the ingredients to the BT will prove useful in keeping track of the discussion.4

We have set up our system in such a way that each class of NPs may have (a) positive and/or negative Binding Condition(s) associated with it. Complementary distribution between two classes results if the negative binding domain for one element happens to be the same as the positive binding domain for the other. There is nothing in the formal system that accounts for the intuition one might have that one class of NPs is used because of the unavailability of the other, and vice versa. Intuitions of this kind have motivated so-called blocking approaches to Binding Theory, in which one form is used if (and perhaps only if) the other is excluded; examples of such approaches include Dowty (1980); Farmer and Harnish (1987); Huang (2000); and Levinson (1987, 1991, 2000); in light of the fact that non-complementary distribution between different pronoun classes is common across languages, including English (see chapters 3 and 11), we will not review these approaches further in this book; but see Burzio (1996, 1998); Kiparsky (2002) for refined, hybrid blocking approaches.

**Exercise 1.2**

A naïve approach to binding would be that the use of a pronoun is necessary to avoid repetition of full NPs, especially within a single sentence.

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4 Most authors appear to assume, implicitly, that the notion of command, once defined properly, is invariant across all Binding Conditions across all languages (but see the remarks at the end of section 1.3); if so, the variable command shouldn’t be treated on a par with the others; we will leave this issue open in this book.
Use the distinction between antecedence and binding established above to make an argument against this view. Construct and provide crucial examples.

**Exercise 1.3**
Both sentences in (1.34) below could be used to illustrate that reflexives in English cannot be bound across a clause boundary. Explain how each does it. Can you think of reasons to prefer one mode of presentation over the other?

(1.34) (a) John<sub>1</sub> thinks that Bill<sub>2</sub> likes himself<sub>2/»1</sub>.
    (b) *John thinks that I like himself.

**Exercise 1.4**
Consider the English possessive form *his/her/its own* (pretend that it is a single form). What requirements, if any, does it impose on its binder or antecedent? Formulate an appropriate Binding Condition for it, and adduce (acceptable and unacceptable) examples to support your proposal.

### 1.3 Command and precedence

As discussed in 1.2.5 above, the notion of *command* is one key ingredient in the formulation of Binding Conditions. We have used c-command plus precedence in our definition of binding above, hence as our relevant notion of *command* in (1.33). In this section we will critically reexamine these two notions, suggesting that they should perhaps be replaced with an altogether different command notion.

#### 1.3.1 Against precedence

In our final definition of binding in (1.19) we have used two relations that give us an asymmetrical ordering among the NPs in a sentence, c-command and precedence. Is this necessary, or even tolerable? Consider the abstract phrase markers in (1.35):

(1.35) (a) \[
\begin{array}{c}
  A \\
  y \quad B \\
\end{array}
\]
(b) \[
\begin{array}{c}
  Y \\
  y \quad B \\
  A \\
\end{array}
\]

In (1.35a), the standard kind of case we have been looking at in English, A could bind B because A c-commands and precedes B; and B could not bind A, because it neither c-commands nor precedes A. In other words, according to our present definition of binding, (1.27), there are two different reasons why A can bind B, but not the other way around; the account is thus somewhat redundant, though perhaps harmlessly so.
In (1.35b), on the other hand, A c-commands B asymmetrically, but B preceeds A. If both factors are relevant, binding between A and B should be *ineffable*, i.e. impossible either way around, and regardless of the morphological shape of either NP. While English lacks clear instantiations of this configuration, other languages arguably provide them. Reinhart (1983a: 47) provides the following data from Malagasy (attributed to E. Keenan, p.c.), an Austronesian language spoken in Madagascar (for convenience, I have set the pronouns in boldface and the antecedents in italics):

\[(1.36)\]
\[
(a) \text{ namono azy ny anadahin-} \text{- Rakoto} \\
hit/killed \text{ him the sister- of- Rakoto} \\
Rakoto’s sister killed him.
\]

(b) \*namono ny anadahin- d- Rakoto izy \\
hit/killed the sister- of- Rakoto he \\
‘He killed Rakoto’s sister.’

Malagasy is a VOS language, but, as the translations make clear, behaves rather like English with respect to the BT. In particular, (1.36b) appears to be a Binding Condition C violation, with the subject pronoun *izy*, ‘he’, illicitly binding the full NP *Rakoto* within the object NP. No such effect is found in (1.36a), in which the full NP is the subject, and the pronoun is in the object.

The data then suggest that the subject can bind the object, but not vice versa. Given that the object precedes the subject, this pattern straightforwardly prohibits a treatment in terms of precedence. C-command alone, however, would seem to provide the correct asymmetry, provided we assume that the basic clause structure of Malagasy is essentially as in (1.37) (cf. [1.35b] above):

\[(1.37)\]

We thus conclude that the inclusion of precedence in the definition of binding, while perhaps merely redundant for English, is actually harmful if we want to apply the notion cross-linguistically, and should be dropped.5

1.3.2 Limitations of C-command

Unfortunately, c-command is not unproblematic either. Languages that display flexible constituent ordering abound with examples in which a bound element precedes and c-commands its binder. Japanese, Korean, and German provide three examples. They are strictly or mostly left-branching languages with

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5 I found exactly one case in the literature in which precedence does seem to play a role, namely Samoan, as discussed in Chapin (1970); and Keenan and Stabler (1995). Whether this requires inclusion of precedence in the BT for Samoan, or can be captured in any other way, will be left as an open question here.
free word order, in all of which we find, for example, (reflexive-like) pronouns preceding coreferring full NPs:\textsuperscript{6}

\begin{align*}
\text{(1.38)} & \quad \text{Zibun -o Hanako -ga utagatte iru} \\
& \quad \text{self -ACC Hanako -NOM doubts} \\
& \quad \text{‘Hanako doubts herself.’}
\end{align*}

\begin{align*}
\text{(1.39)} & \quad \text{Caki casin -eke Kim -än silmangaðssta} \\
& \quad \text{self -DAT Kim -TOP disappointed} \\
& \quad \text{‘Kim was disappointed in himself.’}
\end{align*}

\begin{align*}
\text{(1.40)} & \quad \text{Oft hat sich der Mann im Spiegel betrachtet.} \\
& \quad \text{often has self the man in the mirror watched} \\
& \quad \text{‘Often the man watched himself in the mirror.’}
\end{align*}

These data are problematic for our definition of binding, because, unlike in the case of Malagasy discussed above, there is agreement that none of Japanese, Korean, or German has a constituent structure in which the reflexive objects in these examples are c-commanded by their subject antecedents.

It should be noted, however, that in all these examples, what could be called the ‘logical subject’ binds the ‘logical object’, regardless of order or c-command. In other words, one could conjecture that some more abstract level of representation displays an asymmetric ordering among constituents, at which all of the examples discussed in this section show the relative ordering in (1.41):

\begin{align*}
\text{(1.41)} & \quad \text{‘subject’} > \text{‘indirect object’} > \text{‘direct object’} > \text{‘prepositional object’}
\end{align*}

I have scare-quoted the notions ‘subject’, ‘object’, etc. because these are merely place-holders for whatever theoretical constructs a particular theory regards as relevant here. We will inspect several instantiations of such a hierarchy in turn.

Before that, I want to bring up another set of data on which the c-command condition, even if it doesn’t fail as spectacularly as on those in (1.38–1.40), seems deficient, namely so-called non-configurational or ‘flat’ structures. It is, for example, generally accepted that the objects in double object constructions in English show asymmetries in binding behavior:\textsuperscript{7}

\begin{align*}
\text{(1.42)} & \quad \text{(a)} \quad \text{I showed John himself (in the mirror).} \\
& \quad \text{(b)} \quad \text{*I showed himself John (in the mirror).}
\end{align*}

\begin{align*}
\text{(1.43)} & \quad \text{(a)} \quad \text{I showed Mary to herself.} \\
& \quad \text{(b)} \quad \text{*I showed herself to Mary.}
\end{align*}

Suppose that the structure of the VP in double object constructions is as in (1.44):

\begin{align*}
\text{(1.44)} & \quad \text{(a)} \quad \begin{tikzpicture}
\node (VP) at (0,0) {VP};
\node (V) at (-1,1) {V};
\node (NP1O) at (-1,-1) {NP\textsubscript{1O}};
\node (NPDO) at (0,-1) {NP\textsubscript{DO}};
\draw (VP) -- (V);
\draw (VP) -- (NP1O);
\draw (VP) -- (NPDO);
\end{tikzpicture} \\
\text{(b)} \quad \begin{tikzpicture}
\node (VP) at (0,0) {VP};
\node (V) at (-1,1) {V};
\node (NPDO) at (0,-1) {NP\textsubscript{DO}};
\node (PP) at (0,-2) {PP};
\draw (VP) -- (V);
\draw (VP) -- (NPDO);
\draw (VP) -- (PP);
\end{tikzpicture}
\end{align*}

\textsuperscript{6} Korean data from Keenan (1988):131.

Given this structure, no asymmetries in binding are expected, contrary to fact, since the two objects mutually c-command each other, at least in the double NP case. Similar remarks apply, for example, to nouns with more than one post-nominal attribute:\(^8\)

(1.45) (Ja čital) stat’ju Tolstoja o sebe. (Russian)
\(I\) read article-ACC T.-GEN about himself-LOC
\(\text{‘(I read) an article of Tolstoj about himself.’}\)

Again, the immediately post-nominal phrase can bind the second one, but not vice versa. But, as in the case of verbal double-object constructions, the constituent structure appears to be flat.\(^9\)

Both these examples would be treated correctly if we assumed c-command and precedence as prerequisites for binding, but, in the light of the problems with precedence encountered earlier, it is worth while to look for alternative treatments. A hierarchy along the lines of (1.41) above can provide such a treatment, as it provides a total ordering even among NPs that mutually c-command each other.

To be sure, there have been attempts to reconcile the data in (1.42–1.43) with a c-command approach to binding, notably Larson (1988), which argues that the asymmetries rather show that these structures are more complex than (1.44) and have the essential properties of those in (1.46):

\[\text{(1.46) (a)} \quad \text{VP} \quad \text{V} \quad \text{NP}_{IO} \quad \text{NP}_{DO} \quad \text{(b)} \quad \text{VP} \quad \text{V} \quad \text{NP}_{DO} \quad \text{PP}\]

We do not have to elaborate on the details of this analysis (like the identity of the unlabelled nodes in (1.46)). The important thing is that a structure like (1.46) predicts the binding asymmetries as a function of asymmetrical c-command, without reference to anything else.

On the other hand, we saw the need to reconsider the c-command condition anyway in the light of the Japanese/Korean/German cases, and the two alternatives to c-command presented below are intended to capture those and ‘flat structure’ cases by the same mechanism, namely an independent, non-phrase-structural hierarchy.

This is obviously not the place to rule a final verdict on the (non-)existence of flat structures, but it bears mentioning that the binding facts alone can be treated by a refined command notion, which is presumably required independently, and that structures like in (1.46) are not necessitated by them. We will look at two such notions in what follows.

\(^8\) Data based on Rappaport (1986):106.

\(^9\) Note that the simplest binary branching structure would actually be \([/ V/N \, XP_1 \, ] \, XP_2 \, ]\), which would yield the opposite asymmetries in c-command from what we find with the binding data.
1.3.3 $\Theta$-command

Let us start with the perhaps most attractive version of a non-phrase-structural ordering among the NPs, namely the idea that this ordering is essentially semantic in nature, more precisely that it is based on the semantics of the thematic relations involved. An early and representative example of this approach is Jackendoff (1972):148, where it is proposed that the relevant asymmetric ordering among elements is derived from the hierarchy of thematic roles (or $\Theta$-roles for short) in (1.47):

\[(1.47) \quad \text{Agent} \succ \text{Location, Source, Goal} \succ \text{Theme}\]

The fact that *der Mann* can bind *sich* in the German example (1.40) above is then due to the fact that *der Mann* bears the $\Theta$-role ‘Agent,’ which outranks the role of *sich*, ‘Theme’ on the $\Theta$-hierarchy in (1.47). Likewise, *Rakoto* must not be coreferent with *izy* in the ungrammatical Malagasy example in (1.36), due to the fact that *izy* has the ‘Agent’ role in that sentence, which is higher than any other role in the $\Theta$-hierarchy. The initial appearance that binding asymmetries correlate with a hierarchy among phrase-structure positions (as established by c-command) is merely an epiphenomenon of the dependence of phrase structure upon this same thematic hierarchy.

There are two more immediate advantages of $\Theta$-command over c-command. First, as it is defined over thematic roles, it captures certain parallelisms between NPs and PPs. Not only can binding proceed ‘into’ PPs – a fact captured by c-command and $\Theta$-command alike – sometimes it can also proceed ‘out of’ PPs, if the pertinent thematic command obtains:

\[(1.48)\]

(a) We talked to John about himself.
(b) *We talked to himself about John.
(c) *We talked about John to himself.

These examples (from Wilkins [1988b]:208) show that Goal (as realized by a complement of *to*) $\Theta$-commands Theme (as realized by a complement of *about*) and can therefore bind it, regardless of the fact that *John* doesn’t c-command *himself*, because the first node dominating it is the PP.

Second, $\Theta$-command allows a straightforward account of binding with so-called psych-verbs. With these verbs, a phrase-structurally lower argument appears to bind into a higher argument:

\[(1.49)\]

(a) Stories about herself generally please Mary.
(b) Each other’s health worried the students.

While obviously unexpected from a phrase-structure point of view, these examples can be captured under the assumption that the role borne by the subject of

these verbs, Theme, is lower on the Θ-hierarchy than that of the object, Experi-
encer.11

Attractive though the Θ-command notion is for the purpose of BT, it also
faces some serious problems. First, verbs that allow alternative realizations of
their arguments, such as English double-object constructions, show alternations
in binding possibilities as well, as discussed at length above, cf. the examples
in (1.42) and (1.43) above; (1.50) reiterates the point.12

(1.50) (a) I sold the slave himself. (Goal binds Theme)
(b) I sold the slave to himself. (Theme binds Goal)
(c) ∗I sold himself the slave. (Goal cannot bind Theme)

A Θ-command approach has to grab the bull by the horns and claim that, say,
John bears a different Θ-role in I sold the cabbage to John than in I sold John the
cabbage, as is done in Wilkins (1988b):208ff., who claims that a Theme, when
verb-adjacent, as in (1.50b), is also a Patient, which is a higher role than Goal,
whereas it is only a Theme if it follows another object, as in (1.50a) and (1.50c),
which makes it lower than Goal (a similar strategy is implemented in Jackendoff
[1990]'s action tier).

This strategy, while technically feasible, highlights a more general weak spot
of Θ-based approaches, namely the question of how to determine the role of a
given argument in a given structure. For example, according to its proponents,
the Theme/Patient distinction explains what is behind the dative alternation in
English. According to the critics, it merely gives a semantically loaded name to
what by all appearances is a purely syntactic distinction, namely that between di-
rect and oblique object (alleged semantic distinctions between the two are indeed
subtle, but see Krifka [2004]). According to critics, then, a sufficiently elaborated
Θ-command account is just a somewhat misleadingly labelled instantiation of an
argument-structure based account, to be discussed in the next subsection.

Before closing this section, let us briefly consider two other areas in which the
Θ-command idea has been argued to encounter difficulties. In certain cases of
raising, reflexivization involves NPs that do not receive their thematic role from
the same lexical element. Consider (1.51):13

(1.51) Max strikes himself as qualified for the job.

It would appear that the Θ-role of himself (Goal or Experiencer of strike) is
higher than that of Max (Theme of qualified) as well as that of the clause Max
has raised from (which is presumably the Theme of strike). Yet, binding can only
proceed from the subject to the object position, in violation of the Θ-command
condition.

11 The facts are more complicated, as must therefore be the account; see, among many others,
Belletti and Rizzi (1988).
12 From Pollard and Sag (1992:298); in contradistinction to Pollard and Sag, Larson (1988), and
others, Jackendoff (1972:157) and Postal (1971:ch. 15) judge both variants of binding in double
object constructions as ungrammatical.
The second argument asserts that morphological processes that change grammatical functions also change binding options. Similar to the case of verbs with alternating argument structures, no obvious change in thematic roles goes along with it.\(^{14}\)

\begin{align*}
\text{(1.52)} & \\
&(a) \text{ John shaved himself.} & \text{(Agent binds Theme)} \\
&(b) \text{ John was shaved by himself.} & \text{(Theme binds Agent)} \\
&(c) \ast \text{ We expect himself to be shaved by John} & \text{(Agent cannot bind Theme)}
\end{align*}

This argument has to be taken with a grain of salt, though. Many speakers find examples like (1.52b) rather marginal. Cross-linguistically, the diagnosis is actually much less clear, perhaps non-uniform. Toba Batak (Malayo-Polynesian; Sumatra) is a verb-initial language with no morphological case distinctions.\(^{15}\) Depending on the choice of verbal prefix, *mang* versus *di*, a sentence of the form \(V N P_1 N P_2\) is interpreted with \(N P_1\) as Theme (or Patient) and \(N P_2\) as Agent (*mang*-prefix), or with \(N P_1\) as Agent and \(N P_2\) as Theme (*di*-prefix). In other words, *mang*- and *di*- determine different mappings between thematic roles and phrase-structure positions and are, as such, comparable to grammatical function-changing operations like passive in other languages. Strikingly, however, the binding always goes from Agent to Theme, regardless of prefix choice and, accordingly, linear order.\(^{16}\)

\begin{align*}
\text{(1.53)} & \\
&(a) \text{ Mang -ida si Ria si Torus} & \text{ (a’) Di -ida si Torus si Ria} \\
&MANG \text{ see the R. the T.} & \text{ Di see the T. the R.} \\
&\text{ ‘Torus saw Ria.’} & \text{ ‘Torus saw Ria.’} \\
&(b) \ast \text{ Mang -ida si Torus dirina} & \text{ (b’) Di -ida si Torus dirina} \\
&MANG \text{ see the Torus self} & \text{ Di see the Torus self} \\
&\text{ ‘Self saw Torus.’} & \text{ ‘Torus saw self.’} \\
&(c) \text{ Mang -ida dirina si Torus} & \text{ (c’) \ast \text{ Di -ida dirina si Torus}} \\
&MANG \text{ see self the Torus} & \text{ Di see self the Torus} \\
&\text{ ‘Torus saw self.’} & \text{ ‘Self saw Torus.’}
\end{align*}

It appears that neither the change in linear order (and the change in c-command relations presumably accompanying it) nor the change in grammatical function indicated by the verbal prefixes affects the binding options between the two NPs. A good candidate for what remains invariant in all structures are the \(\Theta\)-relations: *Torus* is the Agent and *Ria* is the Theme. We conclude that grammatical function-changing operations do not provide clear evidence for or against a \(\Theta\)-command approach to Binding Theory.


\(^{15}\) See Keenan (1988) and Schachter (1974); Schachter argues that the basic phrase structure is \([\text{[V NP]} \text{ NP]}\), which would make it a VOS language, but nothing hinges on that, cf. also Sternefeld (1992).

1.3.4 Obliqueness-command

The last command relation to be discussed in this chapter is that of obliqueness command, or o-command for short (sometimes also called a(rgument)-command for reasons to become clear shortly). O-command occupies a middle ground in between c-command and Θ-command in that it claims that there is a non-thematic, syntactic ordering between the NPs in a sentence, but denies that that ordering is directly encoded in the phrase structure as c-command (or any other phrase-structure relation for that matter). I illustrate the idea using an argument-list notation; a verb like watch, for example, will have an a(rgument)-list like in (1.54):

(1.54) a-list of watch: (NP, NP_{acc})

The order of elements on the a-list signals obliqueness. Thus the first NP on the a-list in (1.54) is less oblique than the second, NP_{acc}. Obliqueness does not necessarily correspond to linear order; if, for example, a language allows different linearizations of arguments, the obliqueness relations encoded on the a-list still remain the same. Thus the a-list associated with betrachten, ‘watch,’ in the German example (1.40) above is the same as in (1.54), despite the fact that the accusative NP, the reflexive sich, linearly precedes the subject NP (and presumably also c-commands it). Similarly for the Japanese and Korean examples discussed.

Likewise, a flat constituent structure like in (1.44) is perfectly compatible with a total ordering in terms of obliqueness (in fact, by its very nature an a-list is always totally ordered), as, for example, in (1.55):

(1.55) a-lists for ditransitive verbs like give:
(a) ⟨NP, NP_{acc}, PP_{to}[P-OBJ])
(b) ⟨NP, NP_{acc}, NP_{acc})

Using argument-lists, we can now define an alternative notion to c-command, o(bliqueness)-command, and use that relation to define the Binding Conditions (cf. Pollard and Sag [1992]:287).

(1.56) (a) A locally o-commands B iff A is less oblique than B on some a-list
(b) A (locally) o-binds B iff A and B are coindexed and A (locally) o-commands B.

17 This is similar to the SUBCAT or ARG-ST list of Head Driven Phrase Structure Grammar as presented in Pollard and Sag (1994); Sag and Wasow (1999) or the a-structure of Lexical Functional Grammar (Bresnan, 2000, and the references therein). In current HPSG, the ARG-ST list is split up into separate lists, which between them capture what is traditionally called the valency and subcategorization, partly in recognition of the problems languages like Toba Batak and Balinese, as mentioned on page 18 pose for theories that equate argument structure with grammatical relations (Manning and Sag, 1999; Wechsler and Arka, 1998).

18 These definitions, as well as that of o-command below, assume that the elements on the a-list are the actual syntactic objects, as they in fact are in HPSG, not just category names. For details, see Pollard and Sag (1994). Otherwise we would have to say that A locally o-commands B (in S) if A’ is less oblique on some element’s a-list in C than B’, where A’ and B’ are the elements on the a-list corresponding to A and B.
Binding Conditions:
(A) A reflexive pronoun must be o-bound within its local domain.
(B) A non-reflexive pronoun must not be o-bound within its local domain.

To define Binding Condition C we must generalize the notion of local o-command to o-command simpliciter. The idea is clear enough: if A locally o-commands B, and C is dominated by B, then A should o-command C:

O-Command: A o-commands B iff
(a) A locally o-commands B, or
(b) A locally o-commands a C which dominates B

Binding Condition C: A full NP must not be o-bound.

To give an example, (1.60a) will be ruled out as a Binding Condition C violation, as it should be, given the a-list of tell in (1.60b):

(1.60) (a) *The red-haired baroness told him₁ that Casimir₁ is nice.
(b) a-list for tell: (NP, NP_{acc}, Š)

NP him locally o-commands Š, that Casimir is nice, which in turn dominates the NP Casimir. Therefore, Casimir is o-commanded by him and, since they are coindexed, also o-bound by it. This binding violates Binding Condition C in (1.59), hence coreference is impossible.

O-command based approaches to Binding Theory are presumably the most successful, since they allow for a certain leeway relative to the thematic relations, and relative to the constituent structure. But then this is also a point of potential criticism, which would insinuate that a-lists can simply be written so as to match the binding facts. Put differently, the ordering of elements on a-lists should ideally have other functions than just encoding binding asymmetries, and there should be a tight correspondence between a-lists and thematic relations, on the one hand, and a-lists and constituent structure, on the other, to account for the sort of facts that motivate Θ- and c-command based approaches.

Arguably, most approaches within the Principles and Parameters framework are in essence (equivalent to) o-command approaches. While they assume that the relevant command notion is c-command, Binding Conditions make reference not to the level of surface constituency but to a more abstract level at which c-command and binding go hand in hand. This level, then, encodes in a phrase-structural manner the same ordering that is encoded non-configurationally on a-lists under the o-command approach. Not surprisingly, this level is one which, overall, reflects grammatical-function changes such as passive, raising, and dative shift, and ignores or undoes more ‘superficial’ movements such as topicalization, wh-movement, and ‘scrambling’ as found in Japanese, Korean, and German (cf. chapter 12). And, as with the o-command approaches discussed above, the more it can be shown that the pertinent level serves other purposes as well,

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19 Cf. Pollard and Sag (1992):300; see also the remarks in Bouma et al. (2001):8f., 44.
and is linked to surface constituency and thematic information by a rather con-
strained inventory of transformations, the more such an approach recommends
itself.

With these remarks we leave the issue of command. Of course, none of the
above possibilities is exclusive, and there exist approaches in which different
command relations coexist (e.g. É. Kiss [1992]), just as there exist approaches on
which Binding Conditions must apply at more than one syntactic level (e.g. Bel-
letti and Rizzi [1988]). With the exception of chapter 12, which is exclusively
devoted to this issue, we will concentrate on cases in which any one of the com-
mand notions yields the same ordering among NPs in what follows, which, at
least for English, is easily done. That this is possible reflects the fact that all ap-
proaches discussed above converge on their core finding. In particular, they all
agree that there is an asymmetric and transitive command ordering among the
NPs in a given structure which determines their binding potential.

**Exercise 1.5**

Consider the following data from Albanian, taken from K. Williams
(1988). Describe the pattern of reflexive binding in terms of grammatical func-
tion (subject, accusative object, dative object) first. Then try to put it in terms of
one of the command hierarchies above. Argue why you chose the hierarchy you
did.

(1.61) (a) Artisti$_1$ ia tregoi veten$_{1/2}$ Dritës$_2$.
artist   CLITIC show self-ACC Drita-DAT
(b) Artisti$_1$ ia tregoi Dritës$_2$ veten$_{1/2}$.
artist   CLITIC show Drita-DAT self-ACC
(c) Artisti$_1$ ia tregoi Dritën$_2$ vetes$_{1/* 2}$.
artist   CLITIC show Drita-ACC self-DAT
‘The artist showed Drita herself.’

**Exercise 1.6**

Consider the following data from Hungarian, from É. Kiss
(1992):247. What can you say about the relevant command notion in Hungarian?

(1.62) (a) A lányokat megmutattam egymásnak.
the girls-ACC showed-I each other-DAT
‘I showed the girls to each other.’
(b) A lányoknak megmutattam egymást.
the girls-DAT showed-I each other-ACC
‘I showed each other to the girls.’

### 1.4 Reflexive verbs and reflexive phraseologisms

Let me close by adding some observations about reflexive pronouns
and their functions. Compare the following sentences:
(1.63)  
(a) Spencer behaved himself.  
(b) Spencer despised himself.

_Himself_ in (1.63b) functions as a semantic argument (to _despise_), but _himself_ in (1.63a) does not. We can conclude this from the syntax, because we can’t replace the reflexive in (1.63a) with a full NP, say _Carmen_, the way we can in (1.63b); similarly, we have a semantic intuition that despising is a two-place relation, whereas behaving is a one-place property (though it turns out to be hard to substantiate this intuition further). Verbs like _behave (oneself)_ are called _inherently reflexive verbs_; they are semantically intransitive, but syntactically transitive, and show a — presumably uninterpreted — reflexive as the semantically ‘inert’ argument. Examples of this class are few in English (including _disgrace/betake/vaunt oneself_), but are found in great numbers in other languages, among them the rest of Germanic and Romance.

It is open to speculation why languages have inherently reflexive verbs (instead of proper intransitives), though it seems no coincidence that such verbs are often historically related to transitives. In some cases, we can see this relationship even synchronically, as is the case for the causative/inchoative alternation in German, as found in _etwas schließen – sich schließen, etwas aufhellen – sich aufhellen_ (‘to close [something]’, ‘to lighten [something] up’).

The opposite of verbs like _behave_, if you will, are verbs like _shave_ and _wash_, which can be syntactically intransitive but are clearly semantically transitive (_Quinn shaves_ and _Quinn shaves himself_ both express that Quinn is the Agent and the Theme of the shaving). _Shave_-type verbs, in English and cross-linguistically, very often describe typically self-directed actions such as acts of grooming (cf. English _wash, shave_); typically other-directed actions such as seeing, beating, or killing are unlikely candidates to be expressed by (optionally) intransitive verbs, and require a transitive construction with a reflexive pronoun when used to describe a self-directed event.

A strikingly parallel distinction is found in many languages that have complex as well as simple reflexive pronouns (like the continental Germanic languages discussed in chapter 3, section 3.5.1): typically self-directed verbs occur with a simple reflexive, while typically other-directed verbs require the complex form. Descriptively, we thus find the following scale of transitive constructions:

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20 Other diagnostics for semantically inert reflexives include their inability to be stressed or fronted, to be coordinated, or right-node-raised in conjunctions with non-inherent reflexive verbs.

21 Note that the reflexive alternants do not entail any implicit agent, as, say, passives do; _sich aufhellen_ is thus the proper translation of _to lighten up_ in _The sky lightened up_. Another formally similar construction is the middle construction, which is realized without an object in English, but with a simple reflexive object in many other languages, but I do not want to speculate about the question whether middle constructions are semantically transitive or not here (see Kemmer [1993]; Steinbach [2002], and the references therein).

22 Hellan (1988) argues that self-directed verbs are really ambiguous between an inherently reflexive and a true transitive variant, but see Kiparsky (2002): section 3.8 for convincing arguments against this analysis.
1.4 Reflexive verbs and reflexive phraseologisms

(a) semantically intransitive (inherently reflexive): behave oneself, Dutch zich gedragen (‘behave’); German sich schließen (‘to close’)

(b) typically self-directed verbs: shave (oneself), hide (oneself), Swedish tvätta sig (‘shave’), gömma sig (‘hide’)

(c) typically other-directed verbs: hate oneself, prefer oneself, Swedish hata sig själf (‘hate oneself’), föreda sig själf (‘prefer oneself’)

At least historically, the choice of forms in these constructions is likely to be related to the fact that complex reflexives like German sich selbst or Swedish sig själf are composed of a simple reflexive pronoun and the emphatic marker akin to self (the English situation is more complicated, but note that modern English uses the form himself, herself, etc. as an emphatic marker, as in The director himself opposed the plan.; see Eckardt (2002) for a formal semantic analysis). The idea is that hating or preferring oneself (rather than someone else) is the unusual case and deserves special emphasis, but shaving or washing oneself is the norm and doesn’t require emphasis (see Haiman [1985, 1995]; König and Siemund [2000]; König and Vezzosi [2002] for cross-linguistic data; note that complex reflexives with verbs of grooming are acceptable if, for example, shaving oneself is juxtaposed with shaving someone else first, i.e. if there is contrastive emphasis).

Unsurprisingly, semantically inert arguments, as found with inherently reflexive verbs, cannot bear emphasis (Dutch speakers, for example, find *Hij gedraagt zichzelf, rather than *zich, as bizarre as English speakers do *He behaved Carmen). The fact that a language like English, which lacks a simple reflexive, has extremely few reflexive verbs, and never uses a reflexive in inchoative constructions,23 may well be related to the emphatic heritage of the reflexive form. In the same vein, note that what are arguably semantically inert NPs (note the oddity of full NPs) in positions other than direct objects occur more frequently in English, in the form of non-reflexive pronouns:

(a) Mary brought her lunch with her/*herself/*Colin.
(b) Bertrand has many friends around him/*himself/*Cindy.
(c) Francesca lost her/*her own/*Ibrahim’s way.

This suggests that Binding Conditions are relevant for the choice of semantically inert NP forms as well: non-reflexive pronouns cannot occur if they are locally syntactically bound (regardless of whether they are semantically interpreted at all); in addition, (complex) reflexives must not be (or at least abhor being) semantically inert. For more discussion, the reader is referred to Kiparsky (2002) and the references therein.

23 Or middles, cf. n. 21.
Exercise 1.7
Try to use reflexives, non-reflexives, and full NPs in the blank positions in the examples below. For each, decide whether that position is semantically inert or active; argue carefully!

(a) Mr Mitchum wouldn’t perjure ______.
(b) The tactic is to draw speculators’ fangs by making them commit ______ to buying put options.
(c) Carmen has a Spanish look about ______.
(d) The general looked around ______.