OXFORD STUDIES IN THEORETICAL LINGUISTICS

General editors: David Adger, Queen Mary University of London; Hagit Borer, University of Southern California

Advisory editors:
Stephen Anderson, Yale University; Daniel Baring, University of California, Los Angeles; Nomi Ertesschik-Shir, Ben-Gurion University; Donka Farkas, University of California, Santa Cruz; Angelika Kratzer, University of Massachusetts, Amherst; Andrew Nevins, University College London; Christopher Potts, University of Massachusetts, Amherst; Barry Schein, University of Southern California; Peter Svenonius, University of Tromso; Moira Yip, University College London.

Recent titles
14 Direct Compositionality 
edited by Chris Barker and Pauline Jacobson
15 A Natural History of Infixation 
by Alan C. L. Yu
16 Phi-Theory
Phi-Features Across Interfaces and Modules 
edited by Daniel Harbour, David Adger, and Susana Béjar
17 French Dislocation: Interpretation, Syntax, Acquisition 
by Cécile De Cat
18 Inflectional Identity 
edited by Asaf Bachrach and Andrew Nevins
19 Lexical Plurals
by Paolo Acquaviva
20 Adjectives and Adverbs
Syntax, Semantics, and Discourse 
edited by Louise McNally and Christopher Kennedy
21 InterPhases
Phase-Theoretic Investigations of Linguistic Interfaces 
edited by Kleanthes Grohmann
22 Negation in Gapping 
by Sophie Repp
23 A Derivative Syntax for Information Structure 
by Luis López
24 Quantification, Definiteness, and Nominalization 
edited by Anastasia Giannakidou and Menika Rathert
25 The Syntax of Sentential Stress 
by Arsalan Kahanmuyipour
26 Tense, Aspect, and Indexicality 
by James Higginbotham
27 Lexical Semantics, Syntax, and Event Structure 
edited by Malka Rappaport Hovav, Edit Doron, and Ivy Sichel
28 About the Speaker
Towards a Syntax of Inlexicality 
by Alessandra Giorgi
29 The Sound Patterns of Syntax 
edited by Nomi Ertesschik-Shir and Lisa Rochman
30 The Complementizer Phase 
edited by E. Phoevos Panagiotidis
31 Interfaces in Linguistics
New Research Perspectives 
edited by Raffaella Folli and Christiane Ulbrich
32 Negative Indefinites
by Doris Penka

For a complete list of titles published and in preparation for the series, see pp. 265–6.
Negative Indefinites

DORIS PENKA

OXFORD UNIVERSITY PRESS
Contents

General Preface ix
Acknowledgements xi
List of Abbreviations xiii

1. Introduction 1
   1.1 Negative indefinites 1
   1.2 Sentential negation 3
      1.2.1 Definition of sentential negation 3
      1.2.2 The position of sentential negation 8
   1.3 Outline of the book 12

2. Negative Concord 14
   2.1 The phenomenon of negative concord 14
      2.1.1 First data 14
      2.1.2 Strict and non-strict negative concord 16
   2.2 Approaches to negative concord 19
      2.2.1 Negative indefinites as negative polarity items 20
      2.2.2 Negative indefinites as negative quantifiers 32
      2.2.3 Negative indefinites as being ambiguous between negative
          quantifiers and NPIs 42
   2.3 Negative concord as syntactic agreement 47
      2.3.1 The approach of Zeijlstra (2004) 47
      2.3.2 Negative indefinites not associating with sentential
          negation 57
      2.3.3 Negative concord in French 76
   2.4 Summary 86

3. Split Scope of NIs in German 89
   3.1 Data 89
      3.1.1Modal and other restructuring verbs 89
      3.1.2 Transitive intensional verbs 96
      3.1.3 Predicative uses 98
      3.1.4 Topic–focus accent 101
      3.1.5 Idiomatic expressions 102
3.1.6 Further data 104
3.1.7 Conclusion from the data 104
3.2 Analysis of negative indefinites in German 106
  3.2.1 Scope splitting with respect to verbs 106
  3.2.2 Scope splitting under topic-focus accent 115
  3.2.3 Negative indefinites in sentence-initial position 125
  3.2.4 Negative indefinites inside prepositional phrases 129
3.3 Comparison with other accounts 133
  3.3.1 Amalgamation and incorporation 133
  3.3.2 Quantification over abstract individuals 141
  3.3.3 Quantification over higher types 144
3.4 Summary 150

4. Scope Splitting with Other Downward-Entailing Quantifiers 151
  4.1 Background 151
  4.2 Only 153
  4.3 Fewer/less than 155
  4.4 Few/little 162
  4.5 At most 167
  4.6 Summary 173

5. Distributional Restrictions in Scandinavian 174
  5.1 The distribution of negative indefinites in Scandinavian 174
  5.2 Analysis of negative indefinites in Scandinavian 178
  5.3 Comparison with other accounts 183
  5.4 Cross-linguistic perspective on negative indefinites in double negation languages 190

6. The Nature of the Licensing Relation 197
  6.1 LF movement of negative indefinites 197
  6.2 Unselective binding 199
  6.3 Association with operators in a Hamblin semantics 204
  6.4 Distribution of indefinites in negative contexts 212

7. Tests for the Quantificational Force of Negative Indefinites 228
  7.1 Background 228
  7.2 Modification by exceptive constructions 229
  7.3 Modification by almost 232
    7.3.1 Previous analyses of almost 233
    7.3.2 Almost as an operator evaluating scalar alternatives 236
<table>
<thead>
<tr>
<th>Contents</th>
<th>vii</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.3.3 Negative indefinites modified by <em>almost</em></td>
<td>239</td>
</tr>
<tr>
<td>7.3.4 Incompatibility of <em>almost</em> and NPIs</td>
<td>241</td>
</tr>
<tr>
<td>7.3.5 Remarks on the syntax of <em>almost</em></td>
<td>243</td>
</tr>
<tr>
<td>7.4 Summary</td>
<td>244</td>
</tr>
<tr>
<td>8. Summary</td>
<td>246</td>
</tr>
</tbody>
</table>

*References* 249

*Index* 261
General Preface

The theoretical focus of this series is on the interfaces between subcomponents of the human grammatical system and the closely related area of the interfaces between the different subdisciplines of linguistics. The notion of ‘interface’ has become central in grammatical theory (for instance, in Chomsky’s recent Minimalist Program) and in linguistic practice: work on the interfaces between syntax and semantics, syntax and morphology, phonology and phonetics, etc. has led to a deeper understanding of particular linguistic phenomena and of the architecture of the linguistic component of the mind/brain.

The series covers interfaces between core components of grammar, including syntax/morphology, syntax/semantics, syntax/phonology, syntax/pragmatics, morphology phonology, phonology/phonetics, phonetics/speech processing, semantics/pragmatics, intonation/discourse structure as well as issues in the way that the systems of grammar involving these interface areas are acquired and deployed in use (including language acquisition, language dysfunction, and language processing). It demonstrates, we hope, that proper understandings of particular linguistic phenomena, languages, language groups, or inter-language variations all require reference to interfaces.

The series is open to work by linguists of all theoretical persuasions and schools of thought. A main requirement is that authors should write so as to be understood by colleagues in related subfields of linguistics and by scholars in cognate disciplines.

In this volume Doris Penka explores the syntactic and semantic conditions on the licensing of negative indefinites. She argues on the basis of a novel analysis of split scope effects that, in fact, negative indefinites are never semantically negative; rather they are subject to a syntactic licensing condition which requires them to be in a dependency with clausal negation, with the way that this dependency is configured being subject to cross-linguistic variation. This implies the existence in natural language of phonologically null clausal negative markers, but allows a maximally simple mapping between the syntax and the semantics of these items.

David Adger
Hagit Borer
Acknowledgements

This book is a revised version of my doctoral dissertation, which I submitted to the University of Tübingen in April 2007. I am deeply indebted to the members of my thesis committee: Arnim von Stechow, Wolfgang Sternefeld, Sigrid Beck, and Irene Heim. This work would have been impossible without their guidance, advice, support, and encouragement. I consider myself very fortunate that these members of my committee were also the people who taught me semantics and linguistics. Had it not been for them, I would not be a semanticist or indeed a linguist.

The analysis I present here develops the ideas of Arnim von Stechow that have been expressed at various points in his work over the last 20 years (see in particular von Stechow, 1992, 1993; von Stechow and Geuder, 1997). Another person this work is particularly indebted to is Hedde Zeijlstra. I am very happy I had him as a colleague in a project on negation in Tübingen.

This book has also benefited greatly from detailed and thought-provoking comments from an anonymous reviewer for Oxford University Press.

I also want to thank the following colleagues for discussion and valuable comments: Klaus Abels, Fabrizio Arosio, Josef Bayer, Ellen Brandner, Viviane Déprez, Anamaria Falaus, Kai von Fintel, Danny Fox, Jon Gajewski, Elena Guerzoni, Jack Hoeksema, Sabine Iatridou, Gianina Iordanchioaia, Agnes Jäger, Angelika Kratzer, Antje Lahne, Winfried Lechner, Youngjoo Lee, Arne Martinus Lindstad, Sveta Krasikova, Claudia Mainborn, Luisa Martí, Cécile Meier, Andrew Nevins, Øystein Nilsen, Rick Nouwen, Orin Percus, Ingo Reich, Frank Richter, Manfred Sailer, Magdalena Schwager, Jan-Philipp Söhn, Uli Sauerland, Torgrim Solstad, and Hubert Truckenbrodt. I have also received very valuable comments from audiences in Amsterdam, Berlin, Bilbao, Frankfurt, Oslo, and at MIT.

Thanks also to my friends and colleagues who generously provided native speaker insights: Anita Bregenzer, Isabelle Darcy, Marcel den Dikken, Chiara Gianollo, Christl Glauder, Simone Hartung, Anne Kjeldahl, Sveta Krasikova, Beatriz López Jiménez, Maria Melchiors, Iryna Piir, John Vanderelst, and Hedde Zeijlstra. I gratefully acknowledge the financial support of the German Research Council (DFG) to the Sonderforschungsbereich 441 at the University of Tübingen, where I carried out the research leading to this book. A scholarship from the German Academic Exchange Service (DAAD) enabled me to spend the spring term of 2003 at MIT. I am also grateful for the support of the Zukunftskolleg at the University of Konstanz where I am presently a fellow.
# List of Abbreviations

**Abbreviations used in text:**

- **CP**: complementizer phrase
- **DE**: downward-entailing (monotone decreasing)
- **DegP**: degree phrase
- **DN**: double negation
- **DP**: determiner phrase
- **FC**: free choice
- **IP**: inflection phrase
- **LF**: logical form
- **NC**: negative concord
- **NegP**: negation phrase
- **NI**: negative indefinite
- **NP**: noun phrase
- **NPI**: negative polarity item
- **PF**: phonetic form
- **PP**: preposition phrase
- **PPI**: positive polarity item
- **QR**: quantifier raising
- **TP**: tense phrase
- **VP**: verb phrase

**Abbreviations used in example glosses:**

- **ACC**: accusative case
- **COMP**: complementizer
- **DAT**: dative case
- **DET**: determiner
- **GEN**: genitive case
- **CL**: clitic
- **INF**: infinitive
- **INSTR**: instrumental case
- **MOD-PC**: modal particle
- **NEG**: negative marker
- **NOM**: nominative case
- **OBJ-M**: object marker
- **PAST**: past tense
- **PAST-PART**: past participle
- **PERF-PART**: perfect participle
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PL</td>
<td>plural</td>
</tr>
<tr>
<td>PRES</td>
<td>present tense</td>
</tr>
<tr>
<td>PRES-PART</td>
<td>present participle</td>
</tr>
<tr>
<td>REFL</td>
<td>reflexive</td>
</tr>
<tr>
<td>SG</td>
<td>singular</td>
</tr>
<tr>
<td>SUBJ</td>
<td>subjunctive mood</td>
</tr>
</tbody>
</table>

Notation used in examples:

*       the expression is ungrammatical
* ‘…’   the reading is unavailable
*(X)    the expression is ungrammatical without X
(*X)    the expression is ungrammatical if X is included
?       marked
??      highly marked
*??     on the verge of ungrammaticality
†??     judged ungrammatical in the present stage of the language, but accepted as archaic or formal
%       accepted by some but not all speakers
#       infelicitous in the given context
>       scope over
\       falling accent
/       rising accent
The thing has gone to the dogs, a lot of damned nobodies talking about nothing.
I love talking about nothing, father. It is the only thing I know anything about.

Oscar Wilde, *An Ideal Husband*
Introduction

1.1 Negative indefinites

This book is concerned with the syntax and semantics of negative indefinites. Following Haspelmath (2005), the term ‘negative indefinite’ is used to refer to the English expressions nobody, nothing, no (as determiner), never and nowhere, and their counterparts in other languages. The inventory of negative indefinites (NIs) in some languages is shown in Table 1.1.

The behaviour NIs show with respect to negation is rather diverse, as we will see in Chapter 2. While in English, German, and Norwegian NIs never co-occur with negation (under an interpretation with one negation), in Italian and Spanish they sometimes do, and in Polish they always do. This difference suggests at first glance that the semantic status of NIs in these languages is rather different. In English, they seem to be inherently negative, while in Polish they seem to be more like negative polarity items, showing a certain affinity towards negation. As I will show, these observed differences are of a rather superficial nature and a unified analysis of NIs is possible.

For the following investigation, it is useful to have a criterion according to which elements can be classified as NIs. In particular, it is necessary to have an effective way of distinguishing NIs from negative polarity items. There is indeed a unifying characteristic of NIs across languages, which distinguishes them from negative polarity items and can be used as a test (see Bernini

<table>
<thead>
<tr>
<th></th>
<th>English</th>
<th>German</th>
<th>Norwegian</th>
<th>Italian</th>
<th>Spanish</th>
<th>French</th>
<th>Polish</th>
</tr>
</thead>
<tbody>
<tr>
<td>person</td>
<td>nobody</td>
<td>niemand</td>
<td>ingen</td>
<td>nessuno</td>
<td>nadie</td>
<td>personne</td>
<td>никто</td>
</tr>
<tr>
<td>thing</td>
<td>nothing</td>
<td>nichts</td>
<td>ingenting</td>
<td>niente</td>
<td>nada</td>
<td>rien</td>
<td>nic</td>
</tr>
<tr>
<td>time</td>
<td>never</td>
<td>nie(mals)</td>
<td>aldrí</td>
<td>mai</td>
<td>nunca</td>
<td>jamais</td>
<td>nigdy</td>
</tr>
<tr>
<td>place</td>
<td>nowhere</td>
<td>nirgendwo</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>nigdzie</td>
</tr>
<tr>
<td>manner</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>nijak</td>
</tr>
<tr>
<td>DET</td>
<td>no</td>
<td>kein</td>
<td>ingen</td>
<td>nessuno</td>
<td>ningún</td>
<td>aucun</td>
<td>żaden</td>
</tr>
</tbody>
</table>
and Ramat, 1996: 121 and Haspelmath, 1997: 194 ff.): NIs contribute negative meaning in elliptical contexts. In particular, checking whether a given item can be used as a negative fragmentary answer can be employed as a test. As illustrated in examples (1) and (2) (taken from Haspelmath, 1997: 195), the items that are classified as NIs in Spanish and Polish can be used on their own as answers. Moreover, when they are, the answer is negative.

(1) Q: ¿Qué viste? (Spanish)
   what see.2SG.PAST
   'What did you see?'
A: Nada.
n-thing
'Nothing' (=‘I didn’t see anything’)

(2) Q: Kto przyszedł? (Polish)
   who came
   'Who came?'
A: Nikt.
n-person
'Nobody' (=‘Nobody came’)

In contrast, elements that are classified as negative polarity items, e.g. English any, cannot be used as negative fragmentary answers.¹

(3) Q: Who did you meet?
  A: *Anybody.

The term ‘negative indefinite’ is used in a purely descriptive way. It should not be seen as making a claim about the nature of these expressions. I will in fact argue that NIs are not semantically negative. Moreover, nothing in the analysis I will propose hinges on the fact that NIs are indefinites. I regard this as advantageous for two reasons. First, considering the quickly-changing analyses of indefinites (e.g. Heim, 1982; Diesing, 1992; Reinhart, 1997; Landman, 2004; Kratzer, 2005), it is probably safer not to build on any particular analysis of indefinites. Second, while NIs are the best-studied expressions that give rise to the phenomena I set out to account for, there are other expressions that are not indefinites but behave in the same way. One example is the conjunction corresponding to neither... nor. Other elements participating in the

¹ It is crucial that the answer is interpreted as negative. In many languages, indefinites serving as negative polarity items can also be used as free choice items (cf. Haspelmath, 1997). In the latter function, they can be used as fragmentary answers. However, in this case the answer will be positive.

(i) Q: What should I write about?
   A: Anything you like. (=‘You can write about anything you like.’)
same way as NIs in one of the phenomena I will discuss, i.e. negative concord, are the focus particles neanche ('neither'/‘not even’) and nepurre (‘not even’) in Italian, and ni siguera (‘not even’) and tampoco (‘neither’) in Spanish (see Herburger, 2001). The claims and analysis I propose should be relevant to these expressions.

It is an interesting question why indefinites in particular (and other items similar to indefinites in that their meaning corresponds logically to disjunction) have a special morphological form relating them to negation. In a way, it is a re-statement of the puzzle as to why there are lexical items expressing negated existential quantification but none expressing negated universal quantification (see Horn, 2001). I have nothing to say on this issue.

The standard assumption about the semantics of NIs is that they are negative quantifiers, i.e. they denote negated existential quantification (cf. Barwise and Cooper, 1981, among others), illustrated in (4) by the lexical entry generally assigned to nobody.

\[ \text{nobody} = \lambda P. \neg \exists x [ \text{person(x)} \& P(x)] \]

I discuss two phenomena NIs in different languages give rise to that challenge the analysis of NIs in terms of negative quantifiers. One is negative concord. There is a rich literature on NIs in languages exhibiting negative concord (see among others Laka, 1990 and Herburger, 2001, for Spanish; Zanuttini, 1991, for Italian; Rowlett, 1998, for French; Giannakidou, 1998, for Greek; Brown, 1999, for Russian; Błaszczyk, 2001, for Polish); the phenomenon of negative concord in general is discussed in Giannakidou (2006) and Zeijlstra (2004). I take a more cross-linguistic (albeit European-centred) perspective on NIs and also include NIs in non-negative concord languages in the discussion. The aim is to arrive at a cross-linguistically unified analysis of NIs. In non-negative concord languages, NIs can split their scope in the sense that another operator takes scope in between the negative and the indefinite meaning component. While so far negative concord and scope splitting have been discussed independently of each other, I bring them together and argue that they reveal the true nature of NIs. Rather than being negative quantifiers, NIs are semantically non-negative indefinites that serve as markers of sentential negation. Before I start setting out the analysis, I will provide some background on sentential negation.

1.2 Sentential negation

1.2.1 Definition of sentential negation

There is a traditional distinction between sentential negation and constituent negation. Klima (1964) introduces four tests to identify sentential negation:
the ability to combine with either-conjunctions, the negative appositive tag not even, positive tag questions, and neither-tags. Each of these tests identifies the negation contained in the following (a)-sentences as sentential negation, while not in the (b)-sentences is classified as constituent negation (examples from Klima, 1964).

• either-conjoining:

(5)  a. (Publishers will usually reject suggestions.)
     Writers will not accept them, either.

     b. He married a not unattractive girl, { *and you did either.
          and you did too.

• the negative appositive tag not even:

(6)  a. The writer will not accept suggestions, not even reasonable ones.

     b. There was some rain not long ago, { *not even in the desert.
          even in the desert.

• positive tag questions:

(7)  a. Writers will never accept suggestions, will they?

     b. He had spoken with her not many hours earlier, { *had he?
          hadn’t he?

• neither-tags:

(8)  a. Writers will never accept suggestions, and neither will publishers.

     b. He found something interesting there not long ago, { *and neither
          did she.
          and so did she.

But Klima’s tests for sentential negation are not without problems. First, they are specific for English, and not generally applicable to other languages. Second, they identify not only not and NIs as expressers of sentential negation but also other expressions like never and seldom, cf. (9), and few.

(9)  (Publishers will usually reject suggestions.)

     Writers will \[
     \begin{align*}
     \text{not} \\
     \text{never} \\
     \text{scarcely} \\
     \text{hardly} \\
     \text{seldom} \\
     \text{rarely}
     \end{align*}
     \] accept them, either.

(10)  a. No rain fell and neither did any snow.
b. Little rain fell, and neither did much snow.

c. Few writers accept suggestions and neither do many publishers.

That NIs are classified together with the negative marker not as expressers of sentential negation is a welcome result. The sentences in (11) intuitively mean the same, and under standard assumptions they denote identical truth conditions.

(11) a. John doesn’t have children.
    b. John has no children.

Expressions like seldom, rarely, few, and little, although they share with the negative marker and NIs the ability to license negative polarity items (NPIs), are negative in a weaker sense. This weaker notion of negativity, which is sufficient to license NPIs, corresponds to downward entailing (a formal definition will be given in section 2.2.1.1). It is therefore not negation in the strict sense to which Klima’s tests are sensitive but rather the weaker notion of downward entailing.

There is another problematic aspect of Klima’s tests: what they seem to test for is whether negation takes widest scope. This is illustrated by the following pair of sentences (from Payne, 1985: 200). Sentence (12a), where negation is the operator with widest scope, is compatible with Klima’s continuations (or tags), but (12b), where negation is in the scope of often, is not.

(12) a. John doesn’t often pay taxes, \[
\begin{cases}
\text{does he?} \\
\text{and neither did I.}
\end{cases}
\]
    not even to Malta.

b. ??John often doesn’t pay taxes, \[
\begin{cases}
\text{does he?} \\
\text{and neither did I.}
\end{cases}
\]
    not even to Malta.

Thus, applying Klima’s tests, only negation taking widest scope in a clause is classified as sentential negation. This seems counter-intuitive. If a sentence like John doesn’t pay taxes involves sentential negation, then a sentence specifying this further should classify as sentential negation as well.

While these tests classify only negation taking widest scope as sentential negation, any instance of negation taking widest scope is identified as sentential negation. This also holds for negation preceding a preverbal quantifier, as the following example from Payne (1985: 201) illustrates.

(13) Not many students passed, \[
\begin{cases}
\text{did they?} \\
\text{not even with cribs.}
\end{cases}
\]
    and neither did I.
Cases where negation outscopes a preverbal quantifier, as in (13), are often assumed to involve constituent negation, i.e. negation is regarded a part of the quantified DP (e.g. Payne, 1985: 202). However, applying the Klima tests indicates that they express sentential negation, as (13) demonstrates. There are others reasons to assume that preverbal combinations of a negative marker and a quantified DP correspond to sentential negation outscoping the DP rather than constituent negation. First, it can be observed that sentences in the active voice that involve negation preceding a quantified subject are semantically equivalent to the corresponding sentence in the passive voice with a negative particle, which is uncontroversially analysed as sentential negation (see Klima, 1964). For instance, the two sentences in (14) differ regarding the position of the negative marker but not in their meaning.

(14) a. **Not** many people attended the meeting.
    b. The meeting wasn't attended by many people.

The assumption that cases like (14a) involve constituent negation does not only introduce a distinction that is not supported by intuitions but faces problems too. One problem is that the assumption that the negative marker and the quantifier form a constituent does not always yield correct truth conditions. Consider the following example (from Sternefeld, 2006: 333)

(15) **Not** every boy can be above average height.  \[ \neg \Rightarrow \text{can} \Rightarrow \text{every} \]
    ‘It is not possible that every boy is above average height.’

In the reading (15) intuitively has, negation takes scope above the modal verb *can*, but the quantifier *every* is interpreted in the scope of the modal, as is evident in the paraphrase. If the subject is assumed to be the constituent \[\text{DP not every boy}\], it is not possible to derive truth conditions corresponding to this reading. It rather has to be assumed that the subject \[\text{DP every boy}\] reconstructs to its base position below the modal verb, while negation remains in a higher position. The assumption that preverbal combinations of a negation and a quantifier involves constituent negation cannot derive adequate truth conditions for sentences like (15).

Another challenge concerns the distribution of combinations of a negation and a quantificational DP. If it is assumed that constituent negation forms one constituent with the quantifier, one would expect that this constituent can occur in other positions as well. But alleged constituents like \[\text{DP not everyone}\] or \[\text{DP not many people}\] cannot occur in object position, as (16) illustrates.

(16) a. *John saw not many people.
    b. *I liked not everyone.
Introduction

It seems that there is no real distinction between constituent and sentential negation. Rather, what is at issue is the position of a quantifier interpreted in the scope of negation: if the quantifier occurs postverbally, negation is expressed as the negative marker on the finite verb. If the quantifier is in preverbal position, the negative marker can be placed before it.

The usefulness of the notion ‘constituent negation’ itself has been disputed (see among others Jacobs, 1982; Dahl, 1993). While in some cases, particularly instances of lexical negation as in unhappy or independent, it intuitively makes sense to say that what is negated is a constituent, other cases are less clear. Consider again some of Klima’s examples classified as constituent negation:

(17)  a. He married a not unattractive girl.
     b. There was some rain not long ago.

As pointed out by Dahl (1993), these cases of constituent—or rather non-sentential—negation can be paraphrased by sentences involving sentential negation, as in (18), albeit in an embedded clause:

(18)  a. He married a girl who was not unattractive.
     b. There was some rain at a time which is located not long ago.

What seems to be at issue is again the scope of negation. In the examples in (17), the matrix predicate is not in the scope of negation. Thus, negation qualifies as sentential negation only if it takes scope above the matrix predicate.

More precisely, and following Acquaviva (1997), sentential negation can be defined as negation taking scope above the event expressed by the verb. As proposed by Davidson (1967) sentences can be conceived as descriptions of events. (The term ‘event’ is used in the loose sense and also includes states.) The kind of event is determined by the verb. Technically, this means that verbs have an event argument which is existentially quantified over. In a neo-Davidsonian approach in the style of Parsons (1990), the sentence (19a), for example, is represented as (19b), where e is a variable over events:

(19)  a. John kissed Mary.
     b. \( \exists e \ [ \text{agent}(\text{John}, e) \ & \ \text{theme}(\text{Mary}, e) \ & \ \text{kiss}(e) \ ] \)

According to (19b), the sentence (19a) asserts that there was a kissing event whose agent was John and whose theme was Mary. If the same sentence is negated, it expresses that no kissing event took place with agent John and theme Mary.

(20)  a. John didn’t kiss Mary.
     b. \( \neg \exists e \ [ \text{agent}(\text{John}, e) \ & \ \text{theme}(\text{Mary}, e) \ & \ \text{kiss}(e) \ ] \)
There can be other operators taking scope in between negation and the event quantifier. This is the case when negation outscopes another scope-bearing expression such as a quantifier. Example (21), for instance, means that not every boy is the agent of a kissing event involving Mary.

(21)  a. **Not** every boy kissed Mary.
      b. \( \neg \forall x \ [ \ \text{boy}(x) \rightarrow \exists e \ [ \ \text{agent}(x, e) \ & \ \text{theme}(\text{Mary}, e) \ & \ \text{kiss}(e) ] ] \)

Sentence (21) still constitutes an instance of sentential negation, as the event quantifier is in the scope of negation, albeit not in the immediate scope of negation. The definition of sentential negation I will adhere to is the following:

(22) **Sentential negation:**

Negation taking scope at least above (the existential quantifier binding the event argument of) the main predicate.

Non-sentential negation, by contrast, does not take scope above the quantifier binding the event argument of the main predicate. For example, (23a) asserts the existence of a marrying event, and thus negation does not take scope above the main predicate *marry* but only over the predicate *unattractive.* Similarly, the negation in (23b) does not negate the existence of a raining event, but rather that its temporal location counts as long ago.

(23)  a. He married a not unattractive girl.
      b. There was some rain not long ago.

A more detailed analysis of some cases involving non-sentential negation will be given in section 2.3.2.2.

1.2.2 *The position of sentential negation*

Since Pollock (1989), it is widely assumed that there is a functional projection in the clausal architecture hosting sentential negation, called NegP. Based on arguments from English and French, Pollock proposes that the traditional category IP should be split up into a tense phrase (TP) and an agreement phrase (AgrP), in between which NegP, the position of the marker of sentential negation, is located.

(24)  

```
  TP
   \--- NegP
       \--- AgrP
               \--- VP
```
Although Pollock (1989) restricts the assumption of NegP to the languages he investigated, i.e. French and English, his proposal was taken up by others (among others Laka, 1990; Zanuttini, 1991; Haegeman, 1995), and soon NegP was assumed to be a universal category. But along with the assumption of NegP in other languages came changes in the position assigned to it. Zanuttini (1991), for instance, argues that the Romance languages vary according to whether NegP is located above or below TP. Ouhalla (1991) also shows that the structural position of NegP varies across languages: in some languages NegP is higher than TP, while in others it is lower. He argues that this variation in the relative position of TP and NegP is due to a parameter fixing whether the head of NegP selects TP or VP.

In a cartographic approach like Cinque (1999), it is assumed that the relative order of adverbs and other functional categories is determined by universal grammar. Each class of adverbs corresponds to a separate functional category hosting its own functional projection. Cinque (1999) proposes a hierarchy of functional projections, which is assumed to be universal. As the order of certain functional categories may vary across languages, as observed for tense and negation, all attested sequences have to be encoded in the universal hierarchy. Zanuttini (2001) argues that within the Romance languages alone, four different positions in Cinque’s hierarchy are attested for the negative marker, and that languages vary with regard to which of the universally available NegP projections they instantiate. She further assumes that more than one NegP can be instantiated in a given language, if there is more than one negative marker in the language (e.g. in French, which has two negative markers, *ne* and *pas*). But such an approach is rather unattractive from a conceptional point of view. For one thing, NegP cannot be conceived any longer as the unique position at which sentential negation is located in the clausal architecture. Furthermore, it has to be assumed that a vast hierarchical structure is part of the innate knowledge of language, which fixes the position of all kinds of adverbs and functional categories in any natural language.

For this reason Cinque's cartographic approach has been criticized. An alternative view, expressed in Ernst (2002) and Nilsen (2003), is that the order of adverbials and functional categories like tense is determined by semantic requirements, e.g. in terms of matching semantic types or polarity requirements. The fact that only certain sequences of semantic operators are attested is explained as a consequence of the fact that only these sequences are semantically possible and reasonable. Assuming what

---

3 Cinque’s hierarchy has also been criticized on purely syntactic grounds (among others by Bobaljik (1999), who observes that assuming an adverbial hierarchy leads to a paradox).
makes sense from a semantic point of view is the strategy I adopt in this book.

Semantically, negation applies to a truth value and inverts it:

(25) \( \text{not} \) is of type \( \langle t, t \rangle \);

\[
\llbracket \text{not} \rrbracket = \lambda t \in D_t. \begin{cases} 
1 & \text{if } t = 0 \\
0 & \text{if } t = 1 
\end{cases}
\]

Negation as a sentential operator needs an argument of type \( t \), i.e. its sister node has to denote a truth value. The lowest position at which negation can apply is thus the lowest position that expresses a complete sentence. Assuming that the verb and all its arguments are base-generated inside VP, this level is VP. Just as any other semantic operator, negation can scopally interact with other scope-bearing elements. In particular, negation interacts with quantifiers. Inasmuch as scope relations are made transparent by word order on the surface, this affects the position of negation. In (26a), for instance, negation takes scope below the quantifier many students, and also follows on the surface, while in (26b) negation takes scope above the quantifier and also precedes it on the surface.

(26) a. Many students didn't pass the exam.  \text{many} > \neg

b. Not many student passed the exam.  \neg > \text{many}

Let me be more precise about the locus at which sentential negation applies in the semantic composition. Under an event-semantics approach, where verbs have an event argument, negation can only apply after the event argument has been existentially quantified over.

The event-binding quantifier is introduced by aspectual operators locating the time at which the event takes place relative to the reference time (see e.g. Klein, 1994). The default aspecual operator is the perfective operator, \( \text{PF} \), defined in (27), where \( \tau(e) \) stands for the running time of the event \( e \).

(27) \[
\llbracket \text{PF} \rrbracket = \lambda E_{(u,t)} : \lambda t : \exists e \left[ \tau(e) \subseteq t \land P(e) \right]
\]

As aspecual operators introduce the quantifier that binds the event argument of the verb, negation has to apply after an aspecual operator. But at the same time, the aspecual operator introduces a time variable, which has to be bound by a temporal operator. The question is now whether sentential negation applies before or after the temporal operator.

As it turns out, this question is not easy to answer. In fact, the interaction of tense and negation has been used to argue that tenses cannot be interpreted as existential quantifiers over times, but are rather like pronouns referring to a contextually salient time (interval). Partee (1973) argues that both scope possibilities of negation and an indefinite interpretation of tense do not correspond
to the meaning intuitively assigned. This is illustrated by her famous example (28).

(28) I didn’t turn off the stove.

If negation takes wide scope above a PAST-operator interpreted as existential quantifier over times, the resulting meaning ‘there is no time in the past at which I turned off the stove’ is too strong. If negation takes scope below PAST on the other hand, the resulting truth conditions (‘there is a time in the past at which I didn’t turn off the stove’) are too weak. To solve this paradox, Partee proposes that past tense is like a pronoun referring to a particular time in the past. In the case of (28) it refers to the lapse of time between switching on the stove and leaving the house. Under the definite interpretation of tenses, they are scopeless, just as other definite terms are. But the definite interpretation is only applicable to absolute tenses, i.e. present and past, and thus only these can be assumed to be scopeless. Relative tenses, i.e. perfect and future, are usually analysed as involving existential quantification over times. For relative tenses Partee’s paradox re-surfaces, and it is not clear what the best way is to solve it (see von Stechow, 1998).

Assuming negation applies after the tense operator, the definition of negation used so far can be retained. The sister node of negation is of type \( t \) and can serve as argument of the negation operator as defined in (25). Then the LF for the sentence (29) is (30).

(29) John didn’t kiss Mary.

(30) 

\[
\begin{aligned}
\text{not} & \quad \text{TP} \\
& \quad t \\
& \quad \text{PAST} \\
& \quad \text{AspP} \\
& \quad <v,t> \\
& \quad \text{PF} \\
& \quad e, <v,t> > \\
& \quad \text{VP} \\
& \quad <v,t> > \\
& \quad e, <e, <v,t> > > \\
& \quad \text{kiss} \\
& \quad e, <e, <v,t> > > \\
& \quad \text{Mary} \\
& \quad \text{John}
\end{aligned}
\]
If, on the other hand, it is assumed that negation applies before tense, a new lexical entry for negation is needed. This negation applies to a temporal property I and says that I does not hold of the reference time.

\[(31) \quad \llbracket \text{not} \rrbracket = \lambda I(i,t), \lambda t. I(t) = 0\]

\[(32)\]

However, the relation between negation and tense is orthogonal to the questions addressed in this book. I therefore remain agnostic about the issue, which is facilitated by my neglecting the interpretation of temporal information for the most part anyway. Moreover, I also neglect the event argument in the semantic structures and representations in order to keep them readable. They can however be expanded into more fully elaborated structures in the style of the ones presented in this section.

1.3 Outline of the book

The organization of the book is as follows: Chapter 2 addresses the phenomenon of negative concord. Different approaches are discussed, which treat NIs in languages exhibiting negative concord as either negative polarity items, negative quantifiers, or as ambiguous between both. It is shown that none of them can fully account for the behaviour of NIs in these languages. I then present the approach of Zeijlstra (2004), which analyses negative concord as a form of syntactic agreement and assumes that NIs are semantically non-negative indefinites that have to be licensed by negation. I elaborate and revise this approach to accommodate the behaviour of NIs in a wider range of languages.
In Chapter 3, the analysis according to which NIs have to be licensed by sentential negation is extended to languages without negative concord. This analysis is motivated by the fact that NIs in these languages exhibit a related phenomenon, scope splitting, which shows that the negation is not interpreted where it is marked morpho-syntactically. I thoroughly discuss scope splitting of NIs in German and show that the conditions under which it arises follow from the proposed analysis.

Chapter 4 digresses by addressing the fact that other downward monotonic quantifiers such as fewer than three or at most five also give rise to scope splitting. It is shown that this follows from their semantics once analyses more sophisticated than generalized quantifier theory are employed. I argue that scope splitting with these quantifiers is a phenomenon different from scope splitting with NIs.

Chapter 5 discusses NIs in the Scandinavian languages, where NIs exhibit certain distributional restrictions. It is shown that the distributional restrictions follow from the analysis proposed for German in Chapter 3 and independently known differences in the syntax of German and Scandinavian.

In Chapter 6, I return to the nature of the licensing relation between NIs and negation. Approaches assuming a semantic licensing relation are shown to face problems when the kind of data crucial for the analysis of NIs in German is taken into account. I also discuss the distribution of different indefinite series in negative contexts and argue that morphological blocking is responsible for the fact that in many languages, general and NPI-indefinites cannot occur in contexts in which NIs are licensed.

In Chapter 7, two tests for the quantificational status of NIs, which have been proposed in the literature, are discussed: modification by expletive phrases and modification by almost. Both are shown not to be valid tests once the semantics of these expressions is taken seriously. I propose a semantic analysis of almost from which observed co-occurrence restrictions follow.

Chapter 8 summarizes the analysis of NIs proposed in the book.
Negative Concord

2.1 The phenomenon of negative concord

Before I start setting out the phenomenon of negative concord, let me say that
I cannot possibly do justice to the vast literature existing on the topic. I have
to content myself with describing the main patterns of negative concord and
reviewing the most influential approaches.

2.1.1 First data

The phenomenon called negative concord (NC) is illustrated by the following
sentences from Italian:

(1) a. Maria non ha visto nessuno.  
   Maria neg has seen n-person
   ‘Maria hasn’t seen anybody.’
   *‘Maria hasn’t seen nobody.’ (= ‘Maria has seen somebody.’)

   b. Nessuno ha visto niente.
      n-person has seen n-thing
      ‘Nobody has seen anything.’
      *‘Nobody has seen nothing.’ (= ‘Everybody has seen something.’)

In (1a), the NI nessuno occurs together with the negative marker non, and
the sentence contains two negative constituents. But the meaning of this
sentence involves one negation only. In a similar fashion, in (1b), two NIs co-
occur, but again the sentence is interpreted as involving only one negation.
The phenomenon of negative concord can be summarized in the following
way:

(2) Negative concord:
   Multiple negative constituents (i.e. NIs or negative markers) in a clause
   contribute only one instance of negation to the interpretation.

Italian is by no means the only language exhibiting NC. In fact, the great
majority of the world’s languages have NC (cf. Haspelmath, 2005). Further
examples from a number of European languages are given in (3).
(3) a. Nikt nie przyszédł. (Polish)
n-person NEG came
‘Nobody came.’ (Haspelmath, 1997: 194)
b. Milan nikada ne vozi. (Serbian/Croatian)
Milan n-time NEG drive.3sg
‘Milan never drives.’ (Progovac, 1994: 41)
c. Nikto ne videl nikogo. (Russian)
n-person NEG saw n-person
‘No-one saw anyone.’ (Brown, 1999: 35)
d. Nadie ha comido nada. (Spanish)
n-person has eaten n-thing
‘Nobody has eaten anything.’
e. Não veio ninguém. (Portuguese)
NEG came n-person
‘Nobody came.’ (Haspelmath, 1997: 257)
f. No he visto mai ninú en loc. (Catalan)
NEG have.1sg seen n-time n-person n-place.
‘I have never seen anybody anywhere.’ (Haspelmath, 1997: 259)
g. Jean n’a jamais vu personne. (French)
Jean NEG has n-time seen n-person
‘Jean hasn’t ever seen anyone.’ (Rowlett, 1998: 178)

Sentences (3f,g) illustrate that any number of NIs can participate in NC.

From the perspective of a language like English, the behaviour of NIs in these languages is very odd. In English, if an NI is used together with a negative marker, or if two NIs co-occur, a meaning with double negation results.3

(4) a. I didn’t see nobody.
   = ‘I saw somebody.’

b. Nobody didn’t come.
   = ‘Everybody came.’

1 I should emphasize that by the term ‘English’, I mean Standard English. Many non-standard varieties of English are known to exhibit NC (see Labov, 1972).
2 It is often said about such examples that two negations cancel each other out. But this effect obtains only if no other semantic operator intervenes between the two negations, i.e. in cases like (4a), where ¬3 is equivalent to Ǝ. In cases like (4b) and (4c), where the existential quantifier takes scope in between the two negations, the result is different from what one would get if the two negations were simply not there: in (4b), ¬Ǝ → is equivalent to ∀¬ → and thus to ∀, and in (4c), ¬3¬ Ǝ is consequently equivalent to ∀3. It is therefore more appropriate to speak of negations adding up rather than cancelling each other out.
c. Nobody has seen nothing.
   = ‘Everybody has seen something.’

Languages behaving like English in that each negative constituent contributes negation are called double negation (DN) languages. Other DN-languages are German and Dutch:

(5) a. Dieses Jahr hat kein Student nicht bestanden. (German)
   this year has n-det student neg passed.
   ‘This year, no student didn’t pass.’ (= ‘This year, every student passed.’)
   
   b. Jan heeft niet niemand gebeld. (Dutch)
   Jan has neg n-person called
   (Zeijlstra, 2004: 3)
   ‘Jan didn’t call nobody.’ (= ‘Jan called somebody.’)

NIs in DN-languages are standardly taken to denote negative quantifiers. But applying this analysis to NIs in NC-languages like Italian immediately brings us up against the problem of how the meaning of sentences like (1) and (3) can be derived. The status of NIs in NC-languages is thus controversial, and the question whether they are semantically negative or not has not been settled. In order to have a theory-neutral term for these items, Laka (1990) introduced the term n-words, which has been widely adopted to refer to NIs in NC-languages.

Before discussing different positions on the status of NIs and the analysis of NC, I want to introduce a distinction between two varieties of NC, which will be useful in the following discussion.

2.1.2 Strict and non-strict negative concord

NC-languages differ with regard to the patterns in which co-occurring negative constituents give rise to NC. While multiple NIs can always co-occur, the co-occurrence of NIs with negative markers is more constrained.¹

¹ In fact, claiming that multiple NIs can always co-occur seems to be an oversimplification. It has been reported for some languages that sentences with multiple NIs formed from negative determiners are degraded. This is reflected in the following grammaticality judgements reported by Acquaviva (1997) for Italian and Déprez (2000) for Spanish:

(i) ‘Nessuno studente ha letto nessun libro.
   n-det student has read n-det book
   ‘No student read any book.’
   (Italian) (from Acquaviva, 1997: 69)

(ii) ‘Ningún niño comió ningún pastel.
   n-det child ate n-det pastry
   ‘No child ate any pastry.’
   (Spanish) (from Déprez, 2000: 307)

However, these grammaticality judgements are not shared by all speakers. Herburger (2001) marks sentence (ii) with ‘??’, and my Spanish informant finds (ii) unobjectionable.
Consider the pattern from Spanish shown in (6): an NI following the verb has to be accompanied by the preverbal negative marker *no*, cf. (6a).\(^4\) Without *no*, the sentence is ungrammatical. For n-words in preverbal position, the requirement is exactly the opposite: preverbal n-words cannot co-occur with the negative marker, as shown in (6b). This holds also if a preverbal and a postverbal NI occur in the same clause, as in (6c).

(6) a. *(No)\_ vino\_ nadie.\) \(\text{(Spanish)}\)
   \text{NEG came n-person}
   ‘Nobody came.’

   b. Nadie\_ (*no)\_ vino.
   \text{n-person NEG came}
   ‘Nobody came.’

   c. Nadie\_ (*no)\_ ha\_ comido\_ nada.
   \text{n-person NEG has eaten n-thing}
   ‘Nobody has eaten anything.’

The variety of NC exhibited by Spanish, where NIs are not always accompanied by the negative marker, is called non-strict NC by Giannakidou (2006). The pattern of non-strict NC is also found in other Romance languages like Italian.\(^5\)

(7) a. *(Non)\_ ho\_ visto\_ nessuno.\) \(\text{(Italian)}\)
   \text{NEG have.1SG seen n-person}
   ‘I haven’t seen anybody.’ \((\text{Zanuttini, 1991: 108 f.})\)

   b. Nessuno\_ (*non)\_ ha\_ visto\_ Mario.
   \text{n-person NEG has seen Mario}
   \text{Nobody saw Mario.} \((\text{Zanuttini, 1991: 111 f.})\)

A possible explanation for this curious difference between pronominal and full NIs—as well as the variety in speakers’ judgements—will be discussed in section 6.4.

\(^4\) Strictly speaking only NIs associated with sentential negation have to co-occur with the negative marker when they occupy a postverbal position. There is a special use of NIs, discussed in section 2.2.3, where they are not accompanied by the negative marker. Crucially, in these cases NIs give rise to an interpretation not involving sentential negation.

\(^5\) Other Romance languages are more difficult to classify. French for instance comprises two negative markers, the preverbal clitic *ne* and the postverbal particle *pas*. Since NIs obligatorily co-occur with *ne* (in the standard variety), independently of the position of the NI, French is a strict NC-language with respect to the negative marker *ne*. On the other hand, NIs cannot co-occur with *pas* under an NC-reading (see section 2.3.3 for a thorough discussion of NC in French). Thus, it is strictly speaking not appropriate to classify a language as a strict or non-strict NC-language. Rather, one should say that a particular language exhibits strict or non-strict NC with respect to a particular negative marker.

Catalan comprises two different varieties, one having strict NC and the other exhibiting non-strict NC (cf. Zeijlstra, 2004). There is however a clear division (in terms of old vs. young generation, or standard vs. colloquial) between the two varieties, and it seems that Catalan is turning from a strict NC-language into a non-strict NC-language, presumably under the influence of Spanish.
c. **Nessuno** (*non*) ha mangiato.
   n-person NEG has eaten
   'Nobody ate.'

In the Slavic languages on the other hand, NIs obligatorily co-occur with the negative marker, independently of the position of the NI. This is illustrated in (8) for Polish.

(8) a. **Żadne dziecko** *(nie)* wyjechało na wakacje.  (Polish)
   n-DET child NEG went on holiday
   'No child went on holiday.'

b. *(Nie)* wyjechało **żadne dziecko** na wakacje.
   NEG went n-DET child on holiday
   'No child went on holiday.'  (Błaszczyk, 2001: 217)

Languages like Polish, where NIs always have to be accompanied by the negative marker, are called strict NC-languages by Giannakidou (2006). All the Slavic languages exhibit strict NC.

(9) a. Ja **nikogo** *(ne)* vižu.  (Russian)
   I n-person NEG see
   'I don't see anyone.'  (Brown, 1999: 40)

b. **Nixto** *(ne)* pryjšow.  (Ukrainian)
   n-person NEG came
   'Nobody came.'  (Paslawska, 2003: 18)

c. **Ni(t)ko** *(ne)* vidi Milan-a.  (Serbian/Croatian)
   n-person NEG sees Milan-ACC
   'Nobody can see Milan.'  (Progovac, 1994: 41)

Strict NC is also found in Romanian and Greek.

(10) a. **Nimeni** *(nu)* vasu **nimic**.  (Romanian)
   n-person NEG saw.3.SG n-thing
   'Nobody saw anything.'  (Bernini and Ramat, 1996: 186)

b. **KANENAS** *(dhen)* ipe **TIPOTA**.  (Greek)
   n-person NEG said.3.SG n-thing
   'Nobody said anything.'  (Giannakidou, 2006: 20)

In Greek, NIs are distinguished by having emphatic stress (Giannakidou, 1998, 2000, 2006). Only emphatics are classified as NIs, as only these can be used as negative fragmentary answers.
Emphatic stress on NIs also has an effect on the distribution of NIs in non-strict NC-languages. I have already stated that, in non-strict NC-languages, preverbal n-words cannot co-occur with the negative marker, as shown in (11) for Italian:

(11) *Nessuno non ha mangiato.  
     n-person NEG has eaten  
     'Nobody ate.'

But the combination of a preverbal NI with the negative marker is only ungrammatical if the NI is not intonationally prominent. NIs with heavy stress in preverbal position can co-occur with the negative marker. But such constructions do not have an NC-reading. They only have a meaning with double negation. How such sentences in Italian are interpreted precisely depends on the kind of stress pattern involved, and the contexts in which they can be used differ accordingly (Elena Guerzoni, p.c.). A sentence with falling tone (indicating focus) on the preverbal n-word (cf. (12a)) is appropriate as a negative answer to a question involving a negation ('Who didn't eat?'). Sentence (12b) with a rise–fall contour, on the other hand, is used to reject a previous statement involving a preverbal n-word ('Nobody ate').

(12) a. NESSUNO\ non ha mangiato.  
     n-person NEG has eaten  
     'Nobody didn't eat.'

b. /NESSuno NON\ ha mangiato.  
     n-person NEG has eaten  
     'It is false to say that nobody ate.'

Summarizing the data presented for strict and non-strict varieties of NC, we can record the following. In strict NC-languages, NIs obligatorily co-occur with a negative marker, and the combination of an NI and a negative marker never yields a reading with double negation. In non-strict NC-languages on the other hand, only postverbal NIs have to be accompanied by a negative marker, while preverbal NIs combined with a negative marker receive a DN interpretation.

2.2 Approaches to negative concord

It is especially the analysis of NIs in non-strict NC-languages that proves problematic. In some environments, particularly in preverbal position, NIs on their own contribute negation to the semantics. But in other environments,
especially in postverbal position, NIs cannot contribute negation on their own. The question how this double-faced characteristic nature of n-words can be explained will concern us next. In the following sections, I critically discuss the main approaches that have been proposed to account for NIs in NC-languages.

2.2.1 Negative indefinites as negative polarity items

The fact that n-words in NC-languages can be used without contributing negative force is explained if it is assumed that n-words are negative polarity items (NPIs), i.e. elements that are not negative themselves but have to be licensed by negation. But extra assumptions are called for to explain the fact that in certain configurations n-words are able to contribute negative force, for instance when occurring preverbally in a non-strict NC-language. Furthermore, it is not sufficient to say that n-words are NPIs, but it has to be clarified what it means that n-words have to be licensed by negation.

There are two different approaches treating n-words as NPIs, which I discuss in turn.

2.2.1.1 Laka (1990) Laka (1990) argues that n-words in Spanish are best analysed as NPIs, parallel to any-NPIs in English. As NPIs require the presence of a negative expression in order to be licensed, it follows that NIs in postverbal position are ungrammatical if the negative marker no is not present, as shown in (13a):

(13) a. *(No) \text{vino} \text{nadie}. \quad \text{(Spanish)}
   \text{NEG came n-person}
   \text{‘Nobody came.’}

b. \text{Nadie \ ((no) vino.}} \quad \text{(Laka, 1990: 104)}
   \text{n-person \ NEG came}
   \text{‘Nobody came.’}

However, when occurring preverbally n-words in Spanish can, and in fact must, be used without the negative marker, cf. (13b). In order to account for this fact, Laka (1990) argues that preverbal NIs occupy the specifier position of a functional projection she names $\Sigma P$, which is proposed to host operators such as sentential negation and emphatic affirmation. Laka assumes furthermore that $\Sigma P$ can be headed by a phonologically empty operator with negative features, and that NIs in the specifier position of $\Sigma P$ are licensed by this operator under specifier-head agreement. Accordingly, sentence (13b) is assigned the following syntactic structure:
It is argued that an abstract negative head in $\Sigma P$, being not realized phonologically, is only licensed if there is an overt element in the specifier position. This explains why postverbal n-words cannot be licensed by an abstract negative head in $\Sigma P$, unless there is another N in Spec,$\Sigma P$ accounting for the contrast in (15).

(15) a. Juan *(no) come nada.  
     Juan NEG eats n-thing  
     ‘Juan doesn’t eat anything.’

    b. Nadie come nada.  
     n-person eats n-thing  
     ‘Nobody eats anything.’

In (15a), there is no element in Spec,$\Sigma P$ and the negative head has to be realized phonologically. In (15b), on the other hand, preverbal nadie is assumed to be in Spec,$\Sigma P$, licensing an abstract negative head.

Discussing the merits and problems of Laka’s proposal, let us start with the question whether the assumptions regarding $\Sigma P$ account for the behaviour of preverbal n-words in Spanish. The answer is: partly. Laka’s assumptions explain why preverbal NIs need not be accompanied by a negative marker. But they do not account for the fact that preverbal n-words cannot be accompanied by a negative marker (under an NC reading; cf. (13b)). As Laka argues that $\Sigma P$ is the syntactic projection hosting sentential negation (as well as other ‘speech act’ operators like emphatic affirmation), the negative marker no should also be able to head $\Sigma P$. Nothing prevents preverbal NIs from occupying the specifier of $\Sigma P$ headed by no, where they are licensed under specifier-head agreement. Laka (1990) does not address this point, but it would have to be assumed that $\Sigma P$ in Spanish can only be headed by abstract elements, but not by the overt negative marker, which would be a rather strange stipulation, given her claim that in other languages like English and Basque the negative marker projects $\Sigma P$. 
The assumption that NIs in NC-languages are NPIs is supported by the fact that NIs also occur in certain contexts not involving sentential negation, which are known to license NPIs. In these contexts, n-words do not contribute negation and are interpreted as existentials. The precise set of contexts in which NIs are licensed varies between languages. In Spanish, NIs are licensed amongst others under certain ‘negative’ prepositions such as *sin* ('without'), as shown in (16), complement clauses of adverssive predicates (subject to the condition that they are in the subjunctive mood, see section 2.3.2.3), as illustrated in (17) and (18), and the complement of comparatives, see (19).

(16) Sin *nada* que *comer*, los prisioneros murieron
Without n-thing comp eat, the prisoners died
de *hambre*.
of hunger

'Without anything to eat, the prisoners died of hunger.' (Laka, 1990: 114)

(17) Dudo que vayan a encontrar *nada*.
doubt.1sg that go.3pl.subj to find n-thing

'I doubt they’ll find anything.' (Herburger, 2001: 297)

(18) Prohibieron que saliera *nadie*.
forbade.3pl that went-out.3sg.subj n-person

'They forbade that anybody went out.' (Herburger, 2001: 297)

(19) María canta mejor que *ninguno* de vosotros.
María sings better than n-det of you

'Mary sings better than any of you.' (Laka, 1990: 109)

However, n-words do not have precisely the same distribution as NPIs. NIs do not occur in all environments in which NPIs are known to be licensed. For instance, NIs in Spanish cannot be used (with non-negative meaning) in the antecedent of a conditional, although *any*-NPIs are fine as illustrated in the English paraphrase:

(20) *Si encuentras *nada* avísame.* (Herburger, 2001: 299)
if find.2sg n-thing tell-me

'If you find anything, tell me.'

Also, n-words in Spanish are not generally possible in the scope of expressions like *few* or *rarely* and in the restrictor of universal quantifiers. NIs in Spanish

---

* There are however cases in which n-words do occur in these contexts. A number of such examples are given in Bosque (1980), cited in Laka (1990) and Herburger (2001). Since many speakers do not accept them, I think it is best to classify such cases as anachronisms, being remnants of a previous stage of the language when the items that are NIs in the present stage of the language were genuine NPIs (see footnote 11).
are therefore not licensed in all typical contexts licensing NPIs, but only in a subset thereof.

One way to approach this problem might be to assume that n-words are 'choosier' than other NPIs. It has been observed that not all NPIs are happy with every kind of context known to license NPIs. NPIs vary to some extent in their precise distribution. Consider the following contrast between *any* and *yet* (taken from van der Wouden, 1997, 141):

(21)  
   a. Chomsky didn't talk about *any* of these facts.
   b. No one has talked about *any* of these facts.
   c. At most three linguists have talked about *any* of these facts.

(22)  
   a. Chomsky didn't talk about these facts *yet*.
   b. No one has talked about these facts *yet*.
   c. *At most three linguists have talked about these facts *yet*.

While *any* is fine in the scope of sentential negation, NIs and DPs involving *at most*, as shown in (21), *yet* is only licensed in the first two contexts, but not in the scope of *at most*.

The kind of contexts that license *any*-NPIs were characterized by Ladusaw (1979) as having the property of being downward-entailing (DE). This means that they allow inferences from more general to more specific properties. In most contexts, inferences from more specific to more general properties are valid. These contexts are thus called upward-entailing. For example, 'snoring loudly' is a more specific property than 'snoring' and the following inference is valid:

(23)  
   a. At least three people snored loudly. →
   b. At least three people snored.

But if *at least* is replaced by *at most*, the entailment is in the other direction, i.e. from the property of 'snoring' to the property of 'snoring loudly':

(24)  
   a. At most three people snored. →
   b. At most three people snored loudly.

The scope of *at most*-DPs is therefore a downward-entailing environment. The definition of downward entailment is given in (25).

(25)  A function *f* is downward-entailing iff for all *X, Y* in the domain of *f*:

\[ X \subseteq Y \implies f(Y) \subseteq f(X) \]

The scope of negation and of NIs also constitute DE-environments, as the reader may verify for himself. But the latter possesses a stronger degree of negativity, so to speak. This is captured formally in a finer-grained classification of
negative contexts. Zwarts (1996, 1998) and van der Wouden (1997) distinguish four kinds of negative contexts, with downward monotonicity constituting the weakest form of negativity, and antimorphism, corresponding to classical negation, being the strongest one. The different contexts are defined by the kinds of entailments that are valid in them, as shown in Figure 2.1. The different kinds of contexts are arranged as to indicate the subset relation, with a context being a subset of the one(s) higher up; e.g. anti-additive contexts constitute a subset of DE-contexts.

Zwarts (1998) and van der Wouden (1997) show that different classes of NPIs pose different requirements on their licensors regarding the degree of negativity. For instance, the particle yet in English is licensed in anti-additive environments, but not in contexts that are merely DE (recall the contrast in (22)). It is therefore a strong NPI in the terminology of Zwarts (1998). The distribution of different classes of NPIs is depicted in Figure 2.2.  

Applying this classification of NPIs and their licensing contexts to n-words, one might argue that NIs in NC-languages are strong NPIs, requiring a context that is at least anti-additive. This assumption accounts for the fact that NIs are generally licensed in the scope of sentential negation and other n-words, which constitute anti-additive contexts. Few and rarely are merely downward-entailing, and thus are not sufficient to license n-words in their scope. The preposition without and the comparative operator are other expressions van der Wouden (1997) identifies as anti-additive functions, so this assumption also predicts correctly that n-words are licensed in their

---

7 There do not seem to be polarity sensitive items that are sensitive to the notion of antimultiplicativity; cf. Zwarts (1998) and van der Wouden (1997).
scope (at least in some NC-languages, see section 2.3.2.4). However, although restrictors of universal quantifiers and antecedents of conditionals are also classified as anti-additive environments by Zwarts (1998) and van der Wouden (1997), n-words are licensed neither in if-clauses, cf. (20), nor in relative clauses restricting a universal quantifier, cf. (26).

(26) *Todo el que entienda nada de every DET comp understand.3SG.PRES.SUBJ n-thing of syntax conoces el principio ECP. (Spanish) syntax know the principle ECP

‘Everyone who understands anything about syntax knows the ECP.’

The fact that NIs in Spanish are not licensed in all anti-additive environments makes it seem doubtful that a characterization of the contexts in which n-words are licensed based on monotonicity properties is possible. Consequently, the fact that NIs are not licensed in all contexts in which NPIs are known to be grammatical does not seem to be straightforwardly reducible to known differences in the licensing requirements of different classes of NPIs.

A further difference between NPIs and n-words is that their licensing is subject to different locality restrictions. While NPIs like English any can be

---

8 Hoeksema (1983) argues that clausal complements of comparatives are anti-additive environments, whereas phrasal complements of comparatives are not even downward-entailing. But his argument for the latter is based on his assumption that phrasal complements of comparatives are ‘DP-comparatives’ whose semantics is different from clausal comparatives. This assumption was criticized by von Stechow (1984b), who argues that phrasal comparatives should be reduced to (elliptical forms of) clausal comparatives (see also Rullmann, 1995b).
licensed by negation in a higher clause, as illustrated in example (27) from Linebarger (1987: 376), long-distance licensing is not possible for n-words.9

(27) I didn’t say that there was any food in the refrigerator.

(28) *No dije que había nada en el frigorífico.

(Spanish)

‘I didn’t say that there was anything in the fridge.’

The contrast between n-words and NPIs regarding their licensing domain indicates that the two sets of items are not subject to the same licensing conditions.

An even more serious problem for approaches equating NIs in NC-languages with NPIs is the fact that n-words can occur in contexts in which NPIs cannot be used. While NIs can be used as short answers to questions, NPIs can never be used in this function. In fact, this contrast between NIs and NPIs is so robust that it can be used as a test to identify whether a given element is an NPI or an n-word. The following contrast from Spanish between NIs and genuine NPIs like un alma (‘a soul’) illustrates this point.

(29) A: ¿A quién viste?

to who saw.2sg

Who did you see?

B: A nadie.
to n-person

‘Nobody.’

B’: *A un alma.
to a soul

‘A soul.’

(Herburger, 2001: 300)

In non-strict NC-languages, n-words and NPIs also exhibit an asymmetry in their ability to occur in preverbal position without being accompanied by a negative marker. While NIs can (and in fact, must) be used without the negative marker when they are in preverbal position, the same is not possible for genuine NPIs. This is shown in (30) for the NPI un real (lit. a coin of small value formerly used in Spain). If un real occurs in preverbal position without

9 To be more precise, n-words can be licensed at long-distance in certain circumstances. But the availability of long-distance licensing of n-words crucially depends on the presence of subjunctive mood in the embedded clause; see section 2.3.2.3. The contrast between NPIs and n-words thus concerns the possibility of long-distance licensing in indicative clauses.
the negative marker, it only has its literal meaning as a coin of a certain value, but not its NPI meaning denoting a minimal amount of money.

(30) a. **No tengo un real.**  
_NEG_ have.1sg a real  
' I don't have a red cent.'

b. **Un real tengo.**
 a real have.1sg  
'I have a cent.'
  *'I don't have a red cent.'  
(Laka, 1990: 114)

Under the analysis of Laka (1990), this contrast is puzzling: if n-words are just NPIs, and n-words in preverbal position can be licensed by an abstract operator in ΣP, the same option should be available for genuine NPIs. The contrast in the ability to occur without a negative marker in preverbal position thus begs the question why n-words can be licensed by an abstract operator but NPIs cannot.

There are further considerations that argue against equating n-words with NPIs. Recent accounts of NPI licensing seek to derive the licensing requirements of NPIs from properties that are inherent to their semantics (Kadmon and Landman, 1993; Krifka, 1995; Lahiri, 1998; Chierchia, 2006, among others). The crucial property of NPIs is argued to be their denoting low-scale elements. This is particularly obvious in the case of so-called minimizer NPIs like a red cent (denoting a minimal amount of money) or budge an inch (denoting a minimal movement), but something similar is also assumed to be the case for negative polarity indefinites like English any. Kadmon and Landman (1993) argue that any has the effect of widening the domain of quantification. While for other indefinites the domain of quantification is restricted to entities considered as relevant in the given context, any also quantifies over entities that would not usually be taken into account. In the following example from Kadmon and Landman (1993), (31a) is used to assert that the speaker does not have the amount or the kind of potatoes considered relevant in the given context, e.g. preparing food for which potatoes are needed, whereas (31b) with any also excludes the possibility of having potatoes of a smaller amount or different kind.

(31) a. I don't have potatoes.

b. I don't have any potatoes.

Because NPIs denote elements located at the bottom of the scale, using them in upward-entailing contexts results in assertions that are not very informative. For instance, by learning that someone has a minimal amount
of money one’s knowledge does not greatly increase, as having a minimal amount of money is entailed by having any other amount of money. In order to explain the fact that NPIs in upward-entailing environments do not simply yield very weak assertions but rather are ruled out, an additional ingredient in the analysis is needed. The nature of this ingredient is currently subject to considerable debate. Common to all accounts is the assumption that NPIs are banned from upward-entailing environments because, in these contexts, their denoting low-scale elements causes trouble. But in DE-contexts, i.e. in contexts in which entailment relations are reversed, NPIs denote elements located at the upper end of the scale and hence lead to strong assertions. It is in DE-contexts where it makes sense to use an NPI, so to speak.

Such approaches are very attractive as they strive not only for descriptive adequacy (by characterizing the contexts that license NPIs) but also for explanatory adequacy (by explaining why NPIs are licensed precisely in contexts that are DE). Attributing to negative polarity indefinites the effect of domain widening has another welcome consequence: it offers the key to solving the long-standing puzzle about English *any*, which functions on the one hand as an NPI and on the other hand as a free choice item. The assumption that *any* induces domain widening allows one to assume just one lexical element *any* and to explain why it is used in such diverging functions (see Kratzer and Shimoyama, 2002; Chierchia, 2006). The idea is that besides its use in DE-environments, resulting in the strengthening of an assertion, domain widening can also be exploited to indicate uncertainty and prevent options from being ruled out (known as anti-exhaustivity). This dual characteristic of English *any* as NPI and free choice item is by no means a peculiarity of English. Many languages use one and the same element for both functions (see Haspelmath, 1997). Attributing to these items one property, i.e. domain widening, from which NPI and free choice uses follow, thus seems to be the right track.10

Returning to NPI uses of indefinites, it can be observed that all of the analyses mentioned above agree on one point: what makes an expression an NPI is the fact that using it in a DE-context yields a stronger claim than without the NPI. This accords with speakers’ intuitions. For instance, in English the sentence involving *any* in (32) is felt to make a stronger claim than the same sentence without *any*.

10 An issue brought up by an anonymous reviewer concerns the observation that such an approach falls short of accounting for the fact that not all NPIs have a free choice use as well. If the NPI and the free choice effect are really two faces of the same coin, it would be expected that all NPIs have free choice uses as well and vice versa. The precise relation between NPIs and free choice items is complicated and addressed in much current research.
(32)  a. I didn’t have time to do my homework.
    b. I didn’t have any time to do my homework.

(33)  a. If you have questions, I will answer them.
    b. If you have any questions, I will answer them.

Similarly, (33b) is a more generous offer than (33a), as it is also promised that
questions will be answered that might not be really important or relevant, which (33a) does not imply.

In contrast, there is no strengthening or domain-widening effect associated
with NIs.\footnote{In many languages, the items that are now NIs started out as NPIs denoting low-scale elements.
This is still evident in French, which comprises the NIs personne (from Latin persona (‘person’)), and rien (from Latin rem (‘thing’)). But it is also the case for NIs in Spanish, where nada originated from Latin (res) nata (lit. ‘born thing’) and nadie from Latin (homo) natus (lit. ‘born man’) (cf. Horn, 2001: 254). It is thus not quite correct to say that NIs carry negative morphology, although in many languages they do.
During diachronic development these elements were re-analysed as NIs, and in the present stage of the language they do not have the effect they originally had.} Using an NI is just the normal way how an indefinite in an NC-language is realized in the context of sentential negation.\footnote{For this reason, the English paraphrases given for sentences with NIs in NC-languages are not a hundred per cent adequate.} Consequently, the basis for analysing n-words as NPIs is lacking.\footnote{In fact, Chierchia (2006) suggests that NC might be explained by assuming that n-words are NPIs semantically similar to any, i.e. they are existential quantifiers inducing domain widening. He furthermore suggests that overt negative morphology on n-words is responsible for the fact that n-words cannot occur in all NPI-contexts and impose stricter locality conditions. But I suspect that once the contribution of negative morphology to the licensing of n-words has been spelled out, there is not much of a job left for domain widening. In other words, the licensing requirements of n-words would be a consequence of them carrying negative morphology (if they do, cf. footnote 11) rather than of them inducing domain widening. In the case of genuine NPIs, on the other hand, the need to occur in a DE-context is due to domain widening (or denoting a minimal element).} Once the term NPI is
given content beyond the notion of ‘a non-negative expression that has to be licensed by negation’ it turns out that n-words do not have properties characteristic of NPIs, making it doubtful that NIs in NC-languages can and should be equated with NPIs.

2.2.1.2 *Giannakidou (1998, 2000) A different proposal treating n-words as NPIs is found in Giannakidou. She proposes an account of NIs in Greek as polarity-sensitive items of a special kind. Recall that Greek is a strict NC-language and n-words always have to be accompanied by the negative marker, independently of their position.

(34)  KANENAS *(dhen) ipe TIPOTA. (Greek)
      n-person NEG said.3SG n-thing
      ‘Nobody said anything.’ (Giannakidou, 2006: 20)
Negative Indefinites

NIs in Greek never occur without an overt licenser (disregarding NIs used as fragmentary answers), and the problem posed by preverbal NIs in non-strict NC-languages does not arise. NIs in Greek only occur in two kinds of contexts: with clause-mate sentential negation and under the preposition xoris ("without"). Giannakidou proposes that the property unifying these two contexts and distinguishing them from all other contexts is anti-veridicality as defined in (35):


While negation is anti-veridical by definition, anti-veridicality is also assumed to include NIs in DN-languages, taken to be negative quantifiers, and without. But as the definition is formulated, it only applies to propositional operators like negation, and it is not explained how it extends to the latter cases. While it is intuitively quite feasible that without semantically embeds a proposition, it does not make sense to say that a quantifier embeds a proposition. Giannakidou (2000: 468) underpins her claim that without and negative quantifiers fall under the definition of anti-veridical operators only by means of the following intuitive entailments:14

(36) a. Paul talked without looking at me $\rightarrow$ It is not the case that Paul looked at me.

b. No student saw a snake $\rightarrow$ It is not the case that the students saw a snake.

Ignoring the question of how the definition of anti-veridicality can be generalized, let us move on to the conditions Giannakidou proposes for the licensing of NPIs.35 The relevant semantic property for the licensors of NPIs is argued to be non-veridicality.


Non-veridicality is a weaker notion than anti-veridicality, and the contexts in which n-words are licensed form a proper subset of the contexts in which NPIs

---

14 A further problem, arising in particular for without, is the temporal location of the entailed negated proposition. From the assertion of (i) it cannot be concluded that Paul did not look at Jane at all yesterday, but only that he did not look at her during the time of his talking to her.

(i) Yesterday, Paul talked to Jane without looking at her.

15 The items that I refer to as NPIs are called affective polarity items by Giannakidou as they do not only occur in negative environments but in a number of other contexts, e.g. with modals, in questions and imperatives. The term negative polarity item is used by Giannakidou for what I call NIs.
are licensed. Questions, for instance, qualify as non-veridical environments, since a question does not entail the truth of the questioned proposition. Example (38), for example, does not entail that you have been to Paris, and accordingly the NPI is licensed.

\[ \text{(38) Pijes pote sto Parisi? (Greek)} \]
\[
\begin{align*}
\text{went.2sg} & \text{ ever in-the Paris} \\
\text{‘Have you ever been to Paris?’ (Giannakidou, 2006: 33)}
\end{align*}
\]

Note that the definition of non-veridicality also includes imperatives and modal operators which are not usually assumed to be licensers of NPIs.

There is another difference between n-words and NPIs apart from the kind of operators by which they are licensed. While Giannakidou, following standard practice, assumes NPIs to denote existential quantifiers that have to be in the scope of their licenser, she analyses Greek NIs as universal quantifiers that have to outscope their licenser at LF. According to these licensing conditions NIs have to be in a configuration of the form shown in (39).

\[ \text{(39) NI}_i \]
\[ \begin{array}{c}
\text{Opanti-veridical} \\
\ldots t_i \ldots
\end{array} \]

In order to derive the right interpretation from an LF-structure like (39), Giannakidou assumes that NIs denote universal quantifiers.

\[ \text{(40) } [\text{KANENAS}] = \lambda P. \forall x [\text{person}(x) \rightarrow P(x)] \]

Under these assumptions, sentence (41) for instance, is assigned the LF (42a) and expresses the truth conditions (42b).

\[ \text{(41) Dhen irthe KANENAS. (Greek)} \]
\[
\begin{align*}
\text{NEG} & \text{ came.3sg n-person} \\
\text{‘Nobody came.’ (Giannakidou, 2006: 13)}
\end{align*}
\]

\[ \text{(42) a. KANENAS}_i [ \text{dhen irthe } t_i ] \]
\[
\begin{align*}
\text{b. } & \forall x [\text{person}(x) \rightarrow \neg \text{came}(x)] \\
\text{c. } & \neg \exists x [\text{person}(x) \& \text{came}(x)]
\end{align*}
\]

Of course, (42b) is equivalent to (42c) with an existential quantifier scoping below negation, and one wonders whether there is further evidence that NIs
are universal quantifiers. Giannakidou regards the fact that the licensing of NIs is clause-bounded as a central argument for her analysis. N-words in Greek can only be licensed by a clause-mate negation, but not by negation in a superordinate clause, as shown in (43).

(43) *I Ariadhni dhen ipe oti idhe TIPOTA. (Greek)  
the Ariadne NEG said,3SG that saw,3SG n-thing  
‘Ariadne didn’t say that she saw anything.’  
(from Giannakidou, 2000: 470)

Since the scope of universal quantifiers is known to be clause-bounded (see among others Reinhart, 1997), the requirement that the licensing negation has to be in the same clause follows from the assumption that NIs are universal quantifiers having to scope above their licensor. On the other hand, non-emphatics in Greek, which Giannakidou analyses as NPIs, can be licensed by a negation in a higher clause, as shown in (44). Since NPIs are not required to outscope their licensor, it follows that licensing of NPIs is not clause-bounded.

(44) I Ariadhni dhen ipe oti idhe tipota. (Greek)  
the Ariadne NEG said,3SG that saw,3SG anything  
‘Ariadne didn’t say that she saw anything.’  
(Giannakidou, 2000: 470)

As Giannakidou acknowledges herself, her analysis of NIs only works for strict NC-languages like the Slavic languages and Greek, but not for languages with non-strict NC, in which NIs can occur without an overt licenser. Another problem is that in many other languages NIs are licensed in contexts that are not anti-veridical, as discussed for Spanish in the preceding subsection. Therefore, Giannakidou’s account does not provide a unified account of NC. While it is theoretically possible that the two varieties of NC require different analyses, the phenomenon of NC itself seems to be the same and a unified account would be preferred.

Even for strict NC-languages, Giannakidou’s analysis is not fully adequate. I will defer the discussion of this problem until section 6.1, since it crucially involves data on split scope, which are introduced in a later chapter.

2.2.2 Negative indefinites as negative quantifiers

As we have seen, analyses assuming n-words to be inherently non-negative have the problem of accounting for the fact that nevertheless they are sometimes able to contribute negative force. A second kind of approach starts out from the opposite assumption and analyses NIs as negative quantifiers.
These accounts face the challenge of explaining why n-words do not always contribute negative force.

2.2.2.1 The neg-criterion (Zanuttini, 1991; Haegeman and Zanuttini, 1991, 1996; Haegeman, 1995) One well-received account taking n-words to be negative quantifiers can be found in Haegeman and Zanuttini. The central claim of their analysis is a syntactic constraint, the neg-criterion, which is formulated in analogy to the wh-criterion of May (1985) and Rizzi (1996). Following Pollock (1989), it is assumed that sentential negation hosts its own functional projection NegP. The neg-criterion postulates that NIs have to enter a configuration of Spec-head agreement with the head of NegP:

(45) The neg-criterion (Haegeman, 1995: 134)

a. A neg-operator must be in a Spec-head configuration with an \( \text{X}^\circ \text{NEG} \).

b. An \( \text{X}^\circ \text{NEG} \) must be in a Spec-head configuration with a neg-operator.

Where the following definitions obtain:

(46) a. neg-operator: a negative phrase in a scope position;

b. Scope position: left-peripheral \( \text{A}' \)-position (an XP-adjointed position or a specifier position).

I am focusing on the first clause of the neg-criterion (45a), as this is assumed to be the relevant condition underlying NC. It requires that NIs be in the specifier position of a NegP (Spec,NegP). The different proposals vary with respect to the level at which the neg-criterion is assumed to apply. Zanuttini (1991) and Haegeman and Zanuttini (1991, 1996) argue that it has to be met at S-structure in languages that allow scrambling, and at LF in other languages (e.g. Italian), while Haegeman (1995) proposes that the neg-criterion universally applies at S-structure, but can also be met by a syntactic chain headed by an abstract operator in Spec,NegP.

Zanuttini (1991) also uses the neg-criterion to explain why postverbal n-words in non-strict NC-languages like Italian obligatorily co-occur with the negative marker, as shown in (47).

(47) *(Non) è venuto nessuno. (Italian)

\[
\text{NEG} \quad \text{is \ come \ n-person}
\]

'Nobody came.' (Zanuttini, 1991: 160)

She argues that in these languages, NegP is located above the tense phrase (TP), and assumes that TP constitutes a barrier for LF-movement of NIs.
But the barrierhood of TP is voided if it is L-marked by Neg\(^0\) containing lexical material. Consequently, movement of NIs to Spec,Neg\(_P\), as required by the neg-criterion, depends on the presence of the negative marker in Neg\(^0\). The movement in (48a) is excluded, while the one in (48b) is possible.

\[(48) \begin{align*}
\text{a.} & \quad \text{NegP} \\
& \quad \text{NI}_i \\
& \quad \text{Neg} \\
& \quad \text{TP} \\
& \quad \ldots t_i \ldots \\
\text{b.} & \quad \text{NegP} \\
& \quad \text{NI}_i \\
& \quad \text{Neg} \\
& \quad \text{TP} \\
& \quad \text{no} \\
& \quad \ldots t_i \ldots
\end{align*}\]

Note, however, that this explanation is entirely stipulated as there is no independent evidence provided for the barrierhood of TP, which is assumed to affect only LF-movement of negative quantifiers but not of other quantifiers. Also, it must be assumed that the barrierhood of TP can be voided in ways other than L-marking by the negative marker to account for cases in which postverbal n-words are grammatical without the negative marker, for instance if a preverbal NI is present, as in (49).

\[(49) \text{Nessuno ha visto niente.} \quad \text{(Italian)}\]
\[\text{n-person has seen n-thing} \quad \text{‘Nobody has seen anything.’} \quad \text{(Zanuttini, 1991: 162)}\]

The main problem with approaches based on the neg-criterion is that they do not, in fact, provide an analysis of negative concord. They have to rely on additional assumptions, which are neither elaborated nor well motivated, to explain how it comes about that two (or more) constituents that are analysed as semantically negative contribute only one negation to the interpretation of the sentence. Based on the observation that NIs as well as universal quantifiers can be modified by almost, while existential quantifiers cannot (see section 7.3), Zanuttini (1991) argues that NIs are universal quantifiers with a negated scope. Italian nessuno (‘no one’), for instance, is assigned the following lexical entry:

\[(50) \quad \text{\[nessuno\]} = \lambda P. \forall x [\text{person}(x) \rightarrow \neg P(x)]\]
Of course, $\forall \neg$ is semantically equivalent to $\neg \exists$, but treating NIs as universal negative quantifiers seems to be in conflict with the etymology and the morphological make-up of NIs, which in most languages consist transparently of a negative and an indefinite part (e.g. Italian nessuno = nec ('not') + uno ('one'); cf. Haspelmath, 1997: 263).

For the co-occurrence of multiple n-words, a rule of absorption is stipulated, which is formulated in analogy to the wh-absorption rule of Higginbotham and May (1981). It is supposed to turn two (or more) unary negative quantifiers into one quantifier quantifying over two (or more) variables simultaneously:

\[(51)\] Neg-absorption: \hspace{1cm} (Haegeman and Zanuttini, 1996: 139)
\[\forall x \neg \exists [\forall y \neg \exists ([\forall z \neg \exists ] = [\forall x, y, z] \neg \]

Applying this absorption rule to the negative quantifiers in (52a), for instance, is assumed to result in reading (52b), which can be paraphrased as 'for every pair of persons, it is not the case that one talked to the other.' This is equivalent to 'there is no pair of persons such that one talked to the other'.

\[(52)\] a. Nessuno ha parlato con nessuno. \hspace{1cm} (Italian)
\[n\text{-person has spoken with } n\text{-person}
\]['Nobody talked to anybody."

b. $\forall x, y [\text{person}(x) \& \text{person}(y) \rightarrow \neg (x \text{ spoke to } y)]$

Assuming that there is a single specifier position, which can only be occupied by one constituent, multiple NIs in a clause obligatorily have to undergo absorption when they are moved to Spec,NegP, and the fact that NC is obligatory for two (or more) co-occurring NIs follows from this.

Besides the question how the rule in (51) can be made formally explicit, it does not generally solve the problem of NC. While the rule sketched in (51) might account for so-called negative spread, i.e. two co-occurring NIs contributing a single negation, it does not deal with the simplest constellation of NC, i.e. the co-occurrence of a negative marker and an n-word, as exemplified in (53).

\[(53)\] Non ho visto nessuno. \hspace{1cm} (Italian)
\[\text{NEG have.1sg seen } n\text{-person}
\]['I didn't see anybody.' \hspace{1cm} (Zanuttini, 1991: 108)

Applying the NEG-criterion results in the LF (54), where the NI nessuno has raised to Spec,NegP.
(54)

\[
\begin{align*}
& \text{NegP} \\
& \text{nessuno}_{i} \\
& \lambda P. \forall x [\text{person}(x) \rightarrow \neg P(x)] \\
& \text{Neg}_0 \\
& \text{non} \\
& \lambda P. \neg P \\
& \text{TP} \\
& \text{VP} \\
& \text{pro}_{i,SG} \\
& \text{ho visto} \\
& t_1
\end{align*}
\]

As indicated in the LF (54), the NI is interpreted as a negative quantifier, or more precisely as a universal quantifier with a negated scope. At the same time, the negative marker \textit{non} in Neg\textsubscript{0} is interpreted as a sentential negation.\textsuperscript{16}

So how does it come about that LF (54) expresses a reading with only one negation? All that is said about this question is summarized in the following quote from Zanuttini (1991: 138):\textsuperscript{17}

The reason why a negative quantifier can co-occur with a certain type of negative marker and yield a reading with a single instance of negation is that at LF it raises to the specifier position of the projection headed [by] the negative marker, i.e. to [Spec,NegP]; in such a configuration, the negative features of the head and those of the specifier instantiate an instance of Spec-head agreement and contribute only one instance of sentential negation to the interpretation of the sentence.

\textsuperscript{16} The assumption that the negative marker is interpreted as a sentential negation could of course be challenged. But in the work of Zanuttini and Haegeman, it is assumed that the negative marker in Italian is inherently negative (see e.g. Haegeman and Zanuttini, 1996: 122, where it is explicitly said that Italian \textit{non} has negative force).

\textsuperscript{17} In Haegeman and Zanuttini (1996) one also finds a rule of negation factorization affecting a negative marker:

\[(\forall x \rightarrow [\neg]) = [\forall x \rightarrow] \quad \text{(Haegeman and Zanuttini, 1996: 139)}\]

But this rule is assumed to apply only to adverbial negative markers (e.g. West Flemish \textit{nier}), which according to the neg-criterion also have to move to Spec,NegP. Absorption or factorization, it seems, is meant to apply only to elements being in (or having moved through) Spec,NegP. So the rule sketched in (i) is not intended to derive NC relations involving a negative marker that is the head of NegP, as it is assumed to be the case in Italian.

In principle, of course, a rule of negation factorization such as (i) might also be made responsible for the NC relation that holds between a negative marker heading NegP and a negative quantifier in the specifier. But this still would not account for the non-negative meaning of NIs in cases like (56) not involving a negative marker.
What Zanuttini refers to as ‘negative features’ is actually negation contained in the lexical entries of n-words and the negative marker. The lexical entry for a word is the same no matter which configuration it occurs in—unless an ambiguity is postulated. As long as it is assumed that the negation is part of the lexical content of NIs, Spec-head agreement does not help to get rid of negation.

Moreover, the fact that preverbal NIs in Italian cannot co-occur with a negative marker (cf. (55)) is not explained.

(55) NNessuno (‘non) è venuto. (Italian)
    n-person NEG is come

Zanuttini (1991) does not commit herself regarding the position of preverbal n-words. But as preverbal NIs have to satisfy the NEG-criterion (and can participate in negation absorption), one would expect them to be situated in Spec,NegP at LF. Alternatively, it might be assumed that preverbal n-words fulfil the NEG-criterion by virtue of having moved through Spec,NegP on their way to a higher position, e.g. a topic phrase. In any case, they are required to be in Spec-head agreement with the negative head just as postverbal n-words are. As in this configuration the negative force of NIs is assumed to be cancelled somehow, it should also affect NIs occupying a preverbal position in the surface syntax. One would thus expect that a constellation of a preverbal NI and a negative marker is grammatical and interpreted with one instance of negation, contrary to fact.

A further problem is that n-words in Italian can also occur in a non-negative reading in certain contexts other than sentential negation. These comprise complement clauses of adversative predicates, cf. (56a), as well as matrix, cf. (56b), and embedded yes/no questions, cf. (56c).

(56) a. Dubito che venga nessuno. (Italian)
    doubt,1sg that come,3sg,subj n-person
    ‘I doubt that anyone will come.’ (Zanuttini, 1991: 143)

b. Ha telefonato nessuno?
    has called n-person
    ‘Has anybody called?’ (Zanuttini, 1991: 141)

c. Mi domando se verrá nessuno.
    me ask if come,3sg,fut n-person
    ‘I wonder whether anyone will come.’ (Zanuttini, 1991: 140)

To account for such data, Zanuttini (1991) proposes that NIs can also enter into Spec-head agreement with some other operators. These are the yes/no
question operator and the negative complementizer which is assumed to head clauses embedded under adversative verbs (cf. Laka, 1990; see section 2.3.2.3 for the proposal and arguments against it). The reason why these operators can enter into Spec-head agreement with NIs is that these functional heads are assumed to bear negative features. Zanuttini assigns the following structure to the sentences in (56):

\[
\text{(57)}
\]

Again, it is completely unclear why in this configuration NIs should lose their negative force. And even if they did, according to the lexical meaning of n-words assumed by Zanuttini, they would be interpreted as universal quantifiers. As in these cases, the operator Op with which NIs enter a Spec-head relation does not correspond to negation, $\forall > Op$ is not equivalent to $Op > \exists$. The meaning derived for sentence (56a) would thus not correspond to the English paraphrase given but rather to 'I doubt that everyone will come', which is not a possible reading of the sentence.\(^{18}\)

To summarize, the neg-criterion in itself does not account for NC. Further mechanisms such as absorption of negative quantifiers have to be assumed. These are not elaborated in the work of Zanuttini and Haegeman. It is furthermore questionable whether the neg-criterion states a precondition for the application of the mechanisms ultimately deriving NC. If the notion of agreement of negative features is taken seriously to account for NC, it has to be assumed that NIs bearing negative features are semantically non-negative existentials. An account along these lines will be discussed in section 2.3.

\(^{18}\) It is not clear what the resulting truth conditions would be in the case of yes/no questions if the universal quantifier is assumed to outscope the question operator. What truth conditions are generated from such an LF depends on one’s assumptions about quantifying into questions. The result might correspond to a list-reading of the question (for example, (56b)) would be interpreted as 'for every person x, (tell me whether x called') (see Szabolcsi, 1997; Krifka, 2001). In any case, the correct truth conditions cannot be derived, as they require an existential quantifier in the scope of the question operator.
2.2.2.2 *Resumptive quantification (de Swart and Sag, 2002)* Two central problems discussed in connection with Haegeman and Zanuttini's analysis—the need to formalize the absorption rule and the question how NC between NIs and a negative marker can be integrated—are addressed by de Swart and Sag (2002). They define absorption of negative quantifiers as resumption in a polyadic quantifier framework (see van Benthem, 1989). The resumption of $k$ unary quantifiers is defined as follows, where the sets $A_1$ through $A_k$ represent the restrictors of the quantifiers, and $E$ the universe of discourse:

\[(58) \quad k\text{-ary resumption} \quad \text{(adapted from de Swart and Sag, 2002: 385)}\]

\[\text{Res}(Q_E^{A_1}, Q_E^{A_2}, \ldots, Q_E^{A_k}) = Q_{E}^{A_1 \times A_2 \times \ldots \times A_k} \]

The resumption of $k$ unary quantifiers $Q$ yields one polyadic quantifier $Q'$, interpreted as quantifying over $k$-tuples.

NC is analysed as $k$-ary resumption of a sequence of anti-additive quantifiers. As an example, let us consider the derivation of the following French sentence under the NC-reading (59a).\textsuperscript{19}

\[(59) \quad \textbf{Personne} \quad \textit{n'} \quad \textit{aime} \quad \textit{personne}. \quad \text{(French)}\]

\[\text{n-person neg loves n-person} \quad \text{(de Swart and Sag, 2002: 376)}\]

\[a. \quad \text{'No one loves anybody.'} \quad \text{[NC]}\]

\[b. \quad \text{'No one loves nobody.' = 'Everybody loves somebody.'} \quad \text{[DN]}\]

Let us assume that the negative clitic \textit{ne} in French is semantically empty, as argued for by Rowllett (1998). To derive reading (59a), the two negative quantifiers are assumed to undergo resumption, yielding the polyadic negative quantifier (60b), which according to (58) is interpreted as quantification over pairs, cf. (60c). This is supposed to be semantically equivalent to the first-order representation in (60d).

\[(60) \quad \text{a. Res}([\text{NO}^{\text{HUMAN}}, \text{NO}^{\text{HUMAN}}])(\text{[love]})\]

\[\text{b. NO}^{\text{HUMAN,HUMAN}}(\text{[love]})\]

\[\text{c. NO}^{\text{HUMANxHUMAN}}(\text{[love]})\]

\[\text{d. } \exists x \exists y [\text{person}(x) \& \text{person}(y) \& \text{love}(x, y)]\]

De Swart and Sag (2002) couch their proposal in the framework of HPSG, so the question what an LF has to look like for resumptive quantification to apply is not addressed. However, formation of a polyadic quantifier is assumed to be optional. If it does not take place, each NI is interpreted as a separate negative quantifier and the DN-reading is generated.

\textsuperscript{19} All French examples here are from standard (written) French. In colloquial (spoken) French, the negative clitic \textit{ne} is usually dropped.
To account for a negative marker participating in NC, de Swart and Sag (2002) extend the definition of resumption of negative quantifiers to include application to sentential negation. They treat non-variable binding, propositional operators such as sentential negation as 0-place quantifiers. Resumption is assumed to apply to a sequence consisting of 1-place and 0-place quantifiers. Because sentential negation shares the property of being an anti-additive operator with negative quantifiers, the analysis of NC as resumptive quantification of a sequence of anti-additive quantifiers will allow negative markers to take part in NC.

De Swart and Sag (2002) only apply their proposal to French, and it seems to cope well with French data. But NC in French is exceptional in several respects. First, clauses involving multiple NIs in French are generally ambiguous between an NC- and a DN-reading, cf. (59) (although the NC-reading is usually preferred), whereas in the vast majority of NC-languages only the NC-reading is available. For de Swart and Sag (2002) it is merely a matter of preference whether resumptive quantification applies or each negative quantifier is interpreted separately. Thus, in principle, both options are available in each language. But whether a language allows or enforces NC-readings is much more than mere preference. In strict NC-languages, two NIs (or an NI and a negative marker) can never get a DN-reading. And in DN-languages such as German or Dutch, two NIs never yield an NC-reading.

French also differs from other Romance languages in not exhibiting an asymmetry between pre- and postverbal NIs regarding co-occurrence with a negative marker. In Standard French, both pre- and post-verbal n-words

---

20 A more unified account might result if sentential negation is analysed as a negative existential quantifier binding the event variable introduced by the verb, as proposed by Acquaviva (1997). Under that assumption, both NIs and sentential negation correspond to unary negative quantifiers.

21 Sentential negation as an antimorphic function (defined as satisfying both of De Morgan’s laws) is also anti-additive (defined as satisfying the first law of De Morgan; see the definitions in Figure 2.1).

22 There are however cases where, even in DN-languages, two negative expressions are interpreted as contributing only one negation. But such cases are not instances of NC but rather instances of emphatic negation. In contrast to NC, where the use of two negatively marked expressions is the unmarked case, emphatic negation is used in a DN-language to strengthen the force of negation and is considered marginal (see van der Wouden, 1997: chap. 5 and Zeijlstra, 2004: 3.3.4). The following examples illustrate the phenomenon.

(i) a. Niemand weiß von nichts. n-person knows of n-thing
   'Nobody knows about anything at all.'
   b. Ik vind dat niks niet leuk. I find that n-thing not nice
   'I don’t like it at all.'
require the presence of *ne, while neither can co-occur with *pas under an NC-reading:23

(61) a. **Personne *(n') est *(pas) venu.** (Standard French)
    n-person NEG is NEG come
    'No one came.'  (Rowlett, 1998: 182)

    b. **Jean *(n') a *(pas) vu personne.**
    Jean NEG has NEG seen n-person
    'Jean hasn't seen anybody.'  (Rowlett, 1998: 178)

Standard French thus contrasts with non-strict NC-languages like Italian and Spanish, which exhibit an asymmetry between pre- and postverbal n-words. While preverbal n-words cannot co-occur with the negative marker under an NC-reading, cf. (62a), its presence is obligatory for postverbal NIs (unless a preverbal n-word is present), cf. (62b).

(62) a. **Nadie *(no) vino.** (Spanish)
    n-person NEG came
    'Nobody came.'  (Laka, 1990: 104)

    b. ***(No) vino nadie.**
    NEG came n-person
    'Nobody came.'

In the system of de Swart and Sag (2002), a language either allows sentential negation, expressed by a negative marker, to participate in resumptive quantification or not. In French, the negative marker *pas is assumed to be excluded, and this accounts for the fact that n-words cannot co-occur with *pas under an NC-reading, cf. (61). For Spanish, on the other hand, it has to be assumed that the negative marker no takes part in resumptive quantification in order to account for cases like (62b). But then resumptive quantification involving no will also be available for (62a), yielding the NC-reading, which is actually not available. Again, these issues are not a matter of preference but hard fact. It is not clear how application of resumptive quantification could be made sensitive to the syntactic position of the negative quantifiers taking part in it.

In sum, de Swart and Sag (2002) might provide a mechanism deriving NC-readings, but they do not specify which conditions its application is subject to.

Moreover, under the assumption that NIs are negative quantifiers, it is entirely unexpected that they have to be accompanied by a negative marker in

23 In (61) * on *pas does not indicate that the sentence is ungrammatical if *pas is included but rather that the sentence does not have the reading paraphrased if *pas is included. This issue is discussed in more detail in section 2.3.3.
most constellations. In fact, it is only in preverbal position in non-strict NC-languages that n-words can occur without a negative marker. Thus, it seems to be the exception rather than the rule that n-words contribute negative force on their own. If NIs have to undergo a special mechanism when they co-occur with the negative marker in order to get rid of the extra negation, then why is the negative marker there at all?

There are further reasons to doubt that polyadic quantification is the solution to the problem that elements assumed to be inherently negative can be used with non-negative meaning. De Swart and Sag (2002) restrict their discussion to core cases, i.e. cases involving negation. But there are other contexts in which NIs are interpreted as non-negative, such as the complement of comparatives or of adversative predicates, to name but two. As polyadic quantifiers can only be built out of quantifiers over individuals (and maybe non-variable binding operators like negation), I cannot see how this approach could possibly be extended to cover cases like the following (taken from Haspelmath, 1997: 261):

(63)

\[ \text{a. Il parle mieux qu'}\text{ aucun orateur. (Standard French)} \]
\[ \text{he speaks better than } n\text{-DET orator} \]
\[ \text{‘He speaks better than any orator.’} \]

\[ \text{b. Je doute que } n\text{-person it succeed.3SG.PRES.SUBJ} \]
\[ \text{‘I doubt that anybody will succeed in it.’} \]

In sum, there are several empirical facts which de Swart and Sag’s analysis cannot account for. It thus remains open whether this approach based on resumptive quantification could be extended into a general account of NC that is cross-linguistically empirically adequate.

2.2.3 Negative indefinites as being ambiguous between negative quantifiers and NPIs

The third kind of approach I want to discuss takes the ambivalent behaviour of n-words in non-strict NC-languages at face value and assumes that NIs are lexically ambiguous. They can either be negative quantifiers or semantically non-negative polarity items. Note that here we are dealing with an ambiguity

\[ ^{24} \text{De Swart and Sag (2002) also discuss the preposition } sans (‘without’), under which n-words occur with non-negative meaning. But their analysis of } sans \text{ reduces its semantic contribution to negation.} \]

\[ ^{25} \text{Note that it is not possible to assume that (63a) involves a negative quantifier taking wide scope with respect to the comparative operator, as this would yield the wrong truth conditions, namely there is no orator } x \text{ such that he speaks better than } x, \text{ which means that he speaks worse than every orator. There is thus no way around interpreting the NI as a non-negative existential.} \]
where an item is in fact ambiguous between its logical opposites, i.e. between denoting existence and non-existence.

Herburger (2001) argues that assuming n-words in non-strict NC-languages like Spanish to be lexically ambiguous between negative quantifiers and NPIs is not as unattractive as it might first seem, and in fact fares better than accounts assuming that n-words are uniformly either NPIs or negative quantifiers. Under the assumption that NIs in Spanish are ambiguous between negative quantifiers and NPIs, the meaning of the sentence (64) is accounted for by assuming that the first NI, *nadie*, is a negative quantifier, while the second, *nada*, is a semantically non-negative NPI, just as it is the case in the English translation.

(64) Nadie comió nada.  
    n-person ate  n-thing  
    'Nobody ate anything.'

The main task of the ambiguity approach is to ensure that the right kind of NIs occur in the right kind of environment. For instance, it has to be ensured that in (64) the preverbal n-word *nadie* cannot be an NPI, and the postverbal n-word *nada* cannot be a negative quantifier. Otherwise, unattested readings would be derived. It thus has to be explained why the distribution of the two varieties of NIs is so closely linked to the syntax: NIs of the negative quantifier variety are only possible in preverbal position, and NIs of the NPI variety are restricted to postverbal position.

The latter is easy to explain, as genuine NPIs in Spanish, as in English, are not licensed in preverbal position (recall example (30)). It is not true, however, that NPIs are always excluded from preverbal position. NPIs can occur preverbally when they are licensed in this position by a higher operator. In fact, sentences where an n-word occurs preverbally in a subjunctive clause embedded under an adver-sative predicate are (for many speakers) ambiguous between a reading where the NI is interpreted as negative quantifier and one where it is interpreted as non-negative existential. One such example is (65a):

(65) a. Dudo que nadie lo sepa.  
    doubt.1sg that n-person it knows.subj
    (i) 'I doubt that nobody knows it.'
    (ii) 'I doubt that anybody knows it.'

b. Dudo que lo sepa nadie.  
    doubt.1sg that it knows.subj n-person
    'I doubt that anybody knows it.' (Herburger, 2001: 307)
For (65b) on the other hand, which differs from (65a) only in the position of the NI, only the non-negative reading is available.

Other cases where a preverbal n-word can be interpreted as being non-negative can be found in sentences involving more than one preverbal NI. Such cases are very limited, as in Spanish only one argument can occur in preverbal position. But if one of the preverbal elements is an adjunct, i.e. the temporal adverb nunca (‘(n)ever’), such structures are possible. According to Herburger (2001), the following sentence is ambiguous:

(66) Nadie nunca volvió a Cuba.  (Spanish)
    n-person n-time returned to Cuba
    a. 'Nobody ever returned to Cuba.'
    b. 'Nobody never returned to Cuba.'  (Herburger, 2001: 306)

Herburger uses the above data as crucial evidence that n-words can be both negative quantifiers and NPIs, provided they occur in a position where both options are available.

Now the question is why NIs of the negative quantifier variety occur only in preverbal but not in postverbal position. Herburger argues that negative quantifiers can in fact also occur postverbally, but negative quantifiers in postverbal position cannot yield a reading with sentential negation. One of her central examples is the following, where a postverbal n-word indeed occurs without the negative marker.

(67) Temen que el bebé sea autista. Se pasa el
    fear.3pl that the baby is.subj autistic. ct spends the
tiempo mirando a nada.  (Spanish)
time looking at n-thing
    'They fear the baby is autistic. He spends his time looking at nothing.'
    (Herburger, 2001: 302)

Herburger argues that in such cases the negative quantifier takes scope below the quantifier binding the event variable introduced by the verb. It is thus asserted that an event of looking with the baby as agent takes place, but that this event does not have a theme, i.e. there is no thing at which the looking is directed. In a neo-Davidsonian representation in the style of Parsons (1990) the truth conditions expressed by (67) are represented as follows:

(68) $\exists e \left[ \text{agent}(\text{baby}, e) \land \neg \exists x \left[ \text{thing}(x) \land \text{theme}(x, e) \land \text{look}(e) \right] \right]$

Such truth conditions in which a negative quantifier takes scope below the event quantifier are pragmatically highly restricted. It is only in special cases
like (67) that it is possible and makes sense to assert that an event takes place for which not all the required participants exist.

Herburger (2001) assumes that negative quantifiers necessarily take surface scope and cannot take scope above the event quantifier when they occur in postverbal position. This assumption however begs the question why this should be the case for Spanish, while in other languages, such as English, postverbal negative quantifiers are perfectly well able to yield sentential negation. Furthermore, in Spanish, other quantifiers (and indefinites) in postverbal position can easily distribute over events and thus take scope above the event quantifier. Sentence (69), for instance, can be used to describe a situation in which the police arrested the suspects one after the other, i.e. there was no single arresting event involving all suspects simultaneously.26

(69) La policía ha detenido a tres sospechosos/ todo el suspect
    ha tres sospechosos/ every
    'The police arrested three suspects/every suspect.'

Herburger thus has to stipulate not only an asymmetry between negative quantifiers in Spanish and other languages but also an asymmetry between negative and other quantifiers (and indefinites) in Spanish. As she admits herself, she does not have an explanation for the alleged scope rigidity of negative quantifiers in Spanish.

Herburger (2001) does not state explicitly her assumptions regarding syntax. In particular, it is not clear at which position the event variable is quantified over. Under the standard assumptions set out in section 1.2, the event variable introduced by the verb is bound by aspectual operators located above VP and below TP. Under these assumptions, Herburger’s claim that negative quantifiers are confined to surface scope and are therefore unable to scope above the event quantifier when they occur in postverbal position amounts to saying that postverbal NIs occupy a VP-internal position. This claim might be defendable for nominal arguments being thematic roles of the event, but it is untenable for adverbials, which cannot be VP-internal. In this respect it is instructive to consider the temporal adverb nunca (‘(n)ever’), which shows exactly the same behaviour as nominal NIs: nunca can occur in postverbal position only if the negative marker is present.

26 It is in fact often assumed that quantifiers have to outscope the event quantifier for principled reasons, as events are conceived as minimal situations containing actions (in the broadest sense) and their participants. But the argument is easiest to make for readings distributing over events, for which it is immediately clear that the individual quantifier must have wide scope with respect to the event quantifier.
a. *María va **nunca** a la iglesia. (Spanish)
   Maria goes n-time to the church

b. María **no** va **nunca** a la iglesia.
   Maria **NEG** goes n-time to the church

   'Maria never goes to church.'

Sentence (70b) expresses the truth conditions stated in (71) (read as: there does not exist a time (interval) t such that there is an event of Maria going to church whose running time is located in t), where the quantifier over times denoted by **nunca** outscopes the event quantifier.

(71) \( \neg \exists t \exists e [\tau(e) \subseteq t \& \text{agent}(Maria, e) \& \text{theme}(church, e) \& \text{going}(e)] \)

It is completely unclear why negative quantifier **nunca** in (70a) should not be able to take scope above the event quantifier, whereas the NPI **nunca** in (70b) can, when they arguably occupy the same VP-external position. Thus, the assumption that postverbal negative quantifiers cannot scope above the event quantifier is highly stipulative.

But what about the cases like (67) where a postverbal NI without a negative marker yields a somewhat marked interpretation? In this respect, it is instructive to note that in German the meaning of Herburger’s sentence (67) cannot be expressed by using a simple NI. The sentence with the pronominal NI **nichts** ('nothing') only has the reading with sentential negation (cf. (72a)). To express that the baby stares into space, the nominalized form of an NI has to be used (cf. (72b)).

(72) a. Das Baby starrt **nichts** an. (German)
   the baby stares n-thing at
   'The baby doesn’t stare at anything.'

b. Das Baby starrts ins **Nichts**.
   the baby stares into-the n-thing
   'The baby stares into space.'

This indicates that this kind of sentence involves an idiomatic use of NIs, in which they are used like a name, and should not be considered as core cases allowing conclusions on the nature of NIs.

In sum, the question why NIs of the negative quantifier variety are excluded from postverbal position does not receive a convincing answer. This is, in fact, not the only problem for the ambiguity approach. Another one, carrying over from approaches assuming n-words to be NPIs in general, is that NIs cannot occur in all contexts in which NPIs are licensed.
2.3 Negative concord as syntactic agreement

The discussion in the previous section showed that none of the approaches to NC under consideration offers a convincing analysis of the phenomenon. Each has certain problems, some more, some less serious. In general, accounts assuming n-words to be semantically non-negative seem to fare better than analyses starting from the assumption that n-words are (always or sometimes) negative quantifiers. The reason for this is that assuming a covert negation in cases where NIs on their own seem to contribute negative force is easier than getting rid of a negation in cases where NIs have a non-negative interpretation.

The main problem for the discussed approaches taking NIs to be semantically non-negative arose from their equating n-words with polarity sensitive items. But this step from the assumption that NIs are semantically non-negative to the conclusion that they are NPIs is in fact not compulsory. Just because both kinds of items share an affinity to negation without being inherently negative, they do not have to be of entirely the same nature. We have seen enough differences between NPIs and n-words to warrant the conclusion that they cannot be subject to the same licensing conditions.

This is the starting point of another kind of approach, proposed by Ladusaw (1992, 1995), Brown (1999), and Zeijlstra (2004). They take n-words to be semantically non-negative, but the licensing relation between n-words and negation is spelled out in syntactic terms. I will discuss the analysis of Zeijlstra (2004), in which the idea that NC is a form of syntactic agreement is laid out in most detail so far.

2.3.1 The approach of Zeijlstra (2004)

Zeijlstra (2004) proposes an analysis of NC according to which NIs enter into an agreement relation with sentential negation. The central idea is that elements morpho-phonologically marked for negation, in particular NIs, are not themselves negative but constitute a reflex of agreement with a semantic negation in the clause. The notion of agreement is implemented in terms of feature checking, following recent assumptions within Minimalism (Chomsky, 1995, 1998). Zeijlstra (2004) argues that elements entering into an Agree relation with negation carry an uninterpretable feature [uneg], which has to be checked against an interpretable feature [inbg] under c-command. The feature [inbg] is assigned to elements interpreted as negation. NIs (in NC-languages) are argued to be semantically non-negative and to carry the feature [uneg], which has to be checked by an [inbg]-feature on a semantic
negation. Since Agree as a syntactic operation is clause-bounded, it follows immediately that NIs can only be licensed by a negation in the same clause.

The central assumptions about the syntax and semantics of n-words are shown in (73) for Italian *nessuno* ('n-person').

(73) a. syntax: *nessuno* \[\text{[unneg]}\]
    b. semantics: \[
        [\text{nessuno}] = \lambda P. \exists x \{ \text{person}(x) \land P(x) \}
    \]

Let us see how Zeijlstra's analysis works by going through some examples. Here, I concentrate on the core cases, i.e. NIs associating with sentential negation and defer the discussion of other cases to section 2.3.2.

The assumption that n-words are semantically non-negative and have to be licensed by a semantic negation immediately explains why a sentence like (74) is interpreted with only one negation: only one constituent, the negative marker *non*, is semantically negative.

(74) Gianni **non** telefona a *nessuno*. (Italian)
    Gianni _NEG_ call to _n-person_
    'Gianni doesn't call anybody.'

The n-word *nessuno* is semantically non-negative, but in order to satisfy its licensing requirements, it has to check its \[\text{[unneg]}\]-feature against an \[\text{[ineg]}\]-feature. Since the negative marker, interpreted as sentential negation and

---

27 This involves a notion of Agreement that deviates in certain respects from the standard view of Chomsky (2000, 2001). In Chomsky's work, an uninterpretable feature \[\text{[\_F]}\] (called the probe) needs to find a corresponding interpretable feature \[\text{[\_F]}\] in its c-command domain in order to be checked and deleted. The c-command relation between \[\text{[uneg]}\] and \[\text{[ineg]}\], however, is the reverse, with \[\text{[ineg]}\] c-commanding \[\text{[uneg]}\]. This is a consequence of taking interpretability to be a semantic notion, i.e. locating interpretable features on elements corresponding to the respective semantic operators. This deviation is, however, not necessarily in conflict with the idea underlying Agreement. The notion of interpretability being semantic rather than syntactic, (un)interpretable features should be invisible to the syntactic component. As the corresponding syntactic notion, Chomsky (2000, 2001) uses valued and unvalued features, with valued features coinciding with interpretable features and unvalued features coinciding with uninterpretable features. Disentangling (un)interpretable features and (un)valued features makes available both interpretable unvalued features and uninterpretable valued features (cf. Pesetsky and Torrego, 2007). Assuming the negative feature on NIs to be uninterpretable valued and the feature on (covert) negative operators to be interpretable unvalued allows maintaining standard assumptions about the c-command relation between unvalued features (probes) and valued feature (goals). This might also explain why a covert negation operator on its own is not sufficient to negate a clause and always has to go together with an element bearing an uninterpretable (valued) feature. On the downside, maintaining that feature checking invariably involves an unvalued feature as probe would necessitate the assumption that negative markers in non-strict NC languages come as interpretable unvalued (when they license NIs) as well as interpretable valued (when they are the sole marker of negation on the clause).

28 The semantics is in fact not Zeijlstra's. He does not assume that indefinites denote existential quantifiers but adopts the analysis of Heim (1982), according to which indefinites introduce free variables. This point will be discussed below.
thus bearing an [ineg]-feature, is present and c-commands the n-word, the [uneg]-feature on nessuno is checked and deleted, as indicated in (75).\footnote{I am not following Zeijlstra (2004) in the assumption that every element carrying [ineg] has to be located in a functional projection NegP. If one follows standard assumption to the effect that interpretable features are always located in functional projections of the respective category, such functional projections can be included. But then the notion of NegP cannot correspond to 'the unique syntactic position at which semantic negation is realized', as multiple loci must be available for semantic negation, as will become clear in the following exposition. Thus, following the view expressed in section 1.2, I will assume that a negation operator can be adjoined to any position in the clause where it makes sense from a semantic point of view.}

(75) Gianni non\textsubscript{[ineg]} telefona a nessuno\textsubscript{[uneg]}\[
\]

Following Ura (1996) and Hiraiwa (2001), Zeijlstra assumes that Multiple Agree is possible, i.e. one [ineg]-feature can check several [uneg]-features simultaneously.\footnote{An anonymous reviewer asks why Multiple Agree is possible for negative features while it does not seem possible for other features, e.g. person features. I do not have much to say that is enlightening on this issue, apart from pointing out that the assumption that Multiple Agree is available in natural language and subject to parameterisation allows a straightforward explanation of a number of phenomena that have puzzled linguists for a long time (see von Stechow, 2009, for the use of Multiple Agree in a tense system). Note that the availability of Multiple Agree is not a parameter of languages but rather of particular features in a language. For instance, there might be languages that have Multiple Agree of tense features but not of negative features, or the other way round.} This explains why several NIs can be licensed by the same negation, as in (76).

(76) Maria non ha detto niente\textsubscript{[ineg]} a nessuno.\textsuperscript{\textcopyright{} (Italian)}
Maria neg has said n-thing to n-person

'Maria hasn't said anything to anybody.'

(77) Maria non\textsubscript{[ineg]} ha detto niente\textsubscript{[uneg]} a nessuno\textsubscript{[uneg]}\[
\]

In order to accommodate the fact that NIs in non-strict NC-languages do not always co-occur with a negative marker, Zeijlstra builds on proposals by Laka (1990) and Ladusaw (1992, 1995) and assumes that the licensing negation may be covert. This abstract negation operator is written as Op$\neg$ and bears the feature [ineg]. Preverbal NIs in non-strict NC-languages are assumed to be licensed by covert Op$\neg$. For instance, the structure assumed to underlie sentence (78) is (79).

(78) Nessuno telefona a Gianni.\textsuperscript{\textcopyright{} (Italian)}

n-person call to Gianni

'Nobody calls Gianni.'
To be sure, assuming abstract operators is not unproblematic. If semantic operators are not visible, how does one know that they are there? And, at least as importantly, how does one know when they are not there? Thus, when assuming abstract operators, it is of vital importance to restrict their availability. In particular, in the case of covert negation, it has to be ensured that $\text{Op}=\neg$ cannot be inserted arbitrarily into the structure. Otherwise a meaning could be derived for a sentence that is the opposite of what it actually means and, for example, (80a) and (80b) could receive the same interpretation, which would be fatal.

(80)  
   a. I saw John.  
   b. I didn't see John.

So how does one know whether a covert operator is present in the structure of a given clause or not? The answer is that the presence of covert operators has to be inferred from overt material in the clause. In other words, the presence of abstract operators has to be marked by overt material. The function of n-words is to mark the presence of sentential negation. On the other hand, as NIs require negation in order to be licensed, the presence of negation can be inferred from the presence of NIs, and there is no need for the semantic operator itself to be realized overtly.

Negation is, in fact, not the only semantic category for which it can be argued that the position where it is morphologically marked is not the position where it is interpreted. Another such category is tense: it is generally assumed that the actual semantic tense operator is abstract and tense morphology on the verb serves the purpose of referring to a covert tense operator.\footnote{See von Stechow (2009) for an implementation of the relation between semantic and morphological tense in terms of feature checking.} It thus seems that marking of covert operators is a regular means of natural language.

Zeijlstra assumes that the dependence of a covert operator $\text{Op}=\neg$ on the presence of overt negative material can be reduced to an economy condition. If the availability of abstract material is subject to an economy condition, it can only be inserted into the syntactic structure if the derivation would crash otherwise. Now, which kinds of ungrammatical structures can the insertion of $\text{Op}=\neg$ rescue? These are of course syntactic structures involving elements with a $[\text{uneg}]$-feature that would be unlicensed otherwise. Thus, n-words carrying the feature $[\text{uneg}]$ can enforce insertion of a covert negation, if no overtly realized negation, in the form of a negative marker, is present. NIs are self-licensing in the sense that they can trigger the presence of a licensor.
(cf. Ladusaw, 1992, 1995). But if no item with $\neg$ is present, $\neg \rightarrow$ cannot be inserted into the structure, as this would violate economy. Consequently, a sentence like (81) cannot have the interpretation (81b), as the structure (82) from which it would be derived is not available.

(81) Maria telefone a Gianni.  
       Maria call to Gianni  
       a. 'Maria calls Gianni.' 
       b. 'Maria doesn’t call Gianni.'

(82) $\neg \rightarrow$ Maria telefone a Gianni

Let us now turn to the question how the differences between strict and non-strict NC-languages can be accounted for. Zeijlstra (2004) proposes that the difference between these two varieties of NC is due to a difference in the semantic status of the negative marker. In non-strict NC-languages, the negative marker is assumed to be semantically negative, i.e. interpreted as a negation operator and thus assigned the feature $\neg$, as we have seen in the analysis of the Italian examples. In strict NC-languages, on the other hand, the negative marker on the verb is assumed to be semantically non-negative, i.e. semantically empty. In this type of language, the negative marker is parallel to n-words in that it carries the feature $\neg$, which has to be licensed by a semantic negation. But, if the negative marker does not correspond to negation, where does the negation in the semantics come from? The answer is, of course, that an element with $\neg$ has to license the $\neg$-feature on the negative marker, and thus a covert semantic negation $\neg \rightarrow$ is present, contributing negation to the semantics. This is shown in (84).

(83) Jan nie pojechał do Warszawy.  
       Jan NEG go,3SG.PAST to Warsaw  
       'Jan did not go to Warsaw.'  
       (Błaszczyk, 2001: 57)

(84) $\neg \rightarrow$ Jan nie $\neg$ pojechał do Warszawy

The assumption that negative markers in strict NC-languages are semantically non-negative explains why in these languages NIs in preverbal position can co-occur with the negative marker: both are licensed by the same abstract negation c-commanding both, as illustrated in (86).

(85) Nikt nie przyszedł.  
       n-person NEG came  
       'Nobody came.'

(86) $\neg \rightarrow$ nikt $\neg$ nie $\neg$ przyszedł
In non-strict NC-languages on the other hand, where negative markers are assumed to denote negation, the co-occurrence of a preverbal NI with a negative marker would result in a reading with double negation. As licensing under Agree can only take place under c-command, a preverbal n-word cannot be licensed by the negative marker. Thus, a preverbal NI has to be licensed by a c-commanding \textit{Op}. Consequently, a clause like \((87)\) has an underlying structure containing two semantically negative elements.\textsuperscript{32}

\[(87)\]
\begin{align*}
\text{\textit{Nessuno non ha mangiato.}} & \quad \text{(Italian)} \\
\text{n-person \textit{neg} has eaten} \\
\text{‘Nobody ate.’}
\end{align*}

\[(88)\]
\begin{align*}
\text{\textit{Op-[Neg] nessuno-[Neg] non-[Neg] ha mangiato}} \\
\text{\hphantom{\textit{Op-[Neg] nessuno-[Neg] non-[Neg] ha mangiato}}}
\end{align*}

The question is then why a sentence like \((87)\) is judged ungrammatical rather than being interpreted with two negations. The reason, I believe, should be sought in the fact that multiple negations in the semantics is a marked and dispreferred case, as they are hard to process. Note that the meaning assigned to \((87)\) could be expressed as ‘Everyone ate’ much more transparently. Even in languages classified as double negation languages, sentences with two or more negations in the semantics are judged as marked, and in some languages, e.g. the Scandinavian languages, they are considered as marginal, although there is nothing wrong with them syntactically.

The assumption that sentences like \((87)\) are ruled out on pragmatic grounds receives support from the fact that such sentences are acceptable if they are used in the right kind of context and with the right intonation. As answer to question \((89\text{-Q})\), asking about the extension of a negated predicate, \((89\text{-A})\) is fine, if the NI is heavily stressed with an accent appropriate for focus.\textsuperscript{33}

\[(89)\]
\begin{align*}
\text{Q: Chi \textit{non ha mangiato}?} & \quad \text{(Italian)} \\
\text{who \textit{neg} has eaten} \\
\text{‘Who didn’t eat?’}
\end{align*}

\textsuperscript{32} Zeijlstra (2004: 259) offers a different explanation for the fact that preverbal n-words in non-strict NC-languages cannot be accompanied by the negative marker. It is based on his assumption that NIs, being indefinites, are interpreted as free variables (see below). He argues that an n-word can be licensed in its base position within VP by the negative marker, assuming that licensing can take place at any point during the derivation. If, in the surface syntax, an NI moves to a position higher than the negative marker, ‘it would have a variable as its argument that has been bound by a lower quantifier [i.e. the existential closure operator triggered by negation binding the event variable of the verb]. Such constructions are illicit at LF’ (Zeijlstra, 2004: 259). However, variable binding takes place only at the level of LF, and thus the worst thing that could happen is the indefinite variable remaining unbound—which would, in fact, be sufficient to induce ungrammaticality. But, for this to happen, it has to be assumed that preverbal material cannot be reconstructed and that there is no higher operator that could bind free variables, such as a temporal operator or Heim’s (1982) existential closure operator at the text level.

\textsuperscript{33} I am indebted to Elena Guerzoni (p.c.) for the observation and the data.
A: NEGUNO non ha mangiato.
   n-person NEG has eaten
   ‘Nobody didn’t eat.’

Crucially, in contexts in which they are acceptable, sentences with a preverbal n-word accompanied by a negative marker are interpreted as involving two negations. This is what the analysis predicts.

This analysis of strict and non-strict NC is intuitively very appealing. Rather than postulating fundamentally different analyses for strict and non-strict NC-languages (as is done, for example, in Giannakidou, 2006), the difference in the distribution of n-words with respect to the negative marker is reduced to a difference in the status of the negative marker: in non-strict NC-languages the negative marker denotes negation and licenses NIs, whereas in strict NC-languages the negative marker behaves itself like an n-word and has to be licensed by a covert negation.

Before closing this section, I would like to discuss some aspects of Zeijlstra’s (2004) proposal which I consider problematic and do not adopt. I have little to offer as an alternative, however, and mainly content myself with pointing out problems and tentative suggestions as to how they might be tackled.

One question left open so far is why in many cases n-words cannot express sentential negation on their own and have to be accompanied by a negative marker. Under Zeijlstra’s analysis a [uneg]-feature on an NI is sufficient to trigger the presence of a covert semantic negation. Thus, one would not expect a negative marker to be required. In strict NC-languages, where the negative marker itself is assumed to be semantically non-negative, it should be completely redundant. But, far from that, the negative marker is obligatory in sentences involving an n-word, as illustrated in (90).

(90) Ewa nizego *(nie) widziala
    Ewa n-thing.gen NEG saw
    ‘Ewa didn’t see anything.’ (Błaszczyk, 2001: 140)

Similarly, in non-strict NC-languages, a postverbal NI is not sufficient to express negation, and the negative marker has to be present, cf. (91).

(91) *(Non) ho parlato a nessuno.
    NEG have.1sg spoken to n-person
    ‘I didn’t talk to anyone.’ (Zanuttini, 1991: 160)

In order to explain the obligatory presence of the negative marker, Zeijlstra (2004) exploits the fact that NIs are indefinite items. In an analysis in the style of Heim (1982), indefinites are not existential quantifiers but rather
free variables, usually restricted by a descriptive predicate. These variables have to be bound by some operator, which can either be a quantifier, an adverb, a modal operator, or a default existential closure operator, which is held responsible for the existential quantificational force indefinites seem to have.

This indefinite semantics has consequences for the analysis of NIs and is used by Zeijlstra (2004: 257) to explain that postverbal n-words in non-strict NC-languages are obligatorily accompanied by a negative marker. Building on the proposal of Herburger (2001), he argues that postverbal n-words not accompanied by a negative marker cannot be associated with sentential negation but only with negation taking scope below the quantifier binding the event variable of the predicate. This is due to indefinites being non-quantificational and therefore unable to rise to a higher position via QR. Assuming that NIs are licensed as low as possible in the syntactic structure, Zeijlstra argues that Op— is introduced within VP if there is no negative marker in a higher position. This results in a reading asserting that an event took place, but one of its thematic roles is not realized (see section 2.2.3). For a reading with sentential negation, a preverbal negative marker is needed, because it is the only way to ensure that the semantic negation takes scope from a position outside VP. The negative marker thus serves the purpose of a scope marker for sentential negation.

As this explanation builds on Herburger’s analysis, it also inherits (part of) its problems. Under the assumptions about negation I make (see section 1.2), negation never takes scope below the event quantifier. Thus, the lowest position I assume negation is able to occupy is above AspP, where aspecual operators binding the event variable of the verb are located, which in turn is located above VP. Note also that Zeijlstra’s explanation as it stands only applies to postverbal NIs. It has nothing to say about the question why preverbal NIs in strict NC-languages also have to be accompanied by a negative marker on the verb. Surely, a preverbal NI should be sufficient for the purpose of marking the scope of the negation. Thus, the obligatory presence of a negative marker in certain cases cannot be reduced to NIs being indefinite expressions and a different explanation is needed.

The descriptive generalization behind the distribution of negative markers seems to be the following. A negative marker has to be used, as long as this is compatible with the intended meaning.34 In strict NC-languages, where

---

34 This generalization might have to be relativized to preverbal negative markers, i.e. preverbal negative particles, negative affixes, and a clitic-like element on the verb (according to the typology of Zanuttini, 2001). These are the negative markers occurring in the NC languages discussed here. For
negative markers are assumed to be semantically vacuous, inclusion of a negative marker does not affect the meaning, and thus it can and must be used. In non-strict NC-languages, negative markers are semantically negative and thus combining a negative marker with a preverbal NI, which according to assumptions is licensed by a covert negation, would alter the semantics. Since a negative marker is able to c-command and thus license postverbal NIs, this task is on a negative marker rather than on a covert negation (unless there is also a preverbal NI requiring licensing by a higher Op→).

We observe that negation has to be marked on the finite verb, even if this marking is redundant in case an NI is present in the structure as well. It seems that there is something like a principle in the grammar requiring this functionally redundant marking on the verb of a negated clause. As for what the nature of this principle is, I do not speculate, and much more work is needed before we will even come close to an explanation.35

Another question that needs to be addressed is the following: why are NIs obligatorily interpreted in the scope of negation? Assuming NIs to be semantically just indefinites, one would expect that they can scopally interact with other elements, and in particular with the licensing negation. So why can an NI not outscope its licensing negation?

The explanation Zeijlstra (2004) offers also relies on his adopting the variables analysis of indefinites of Heim (1982) for NIs. From this he derives the assumption that NIs, being non-quantificational, cannot move at LF and consequently cannot take scope above negation. However, the issues regarding the interpretation and the scopal behaviour of indefinites are not that simple, and it cannot simply be assumed that indefinites, denoting free variables, cannot move. In the system of Heim (1982), indefinites can (and in fact have to) move at LF (cf. her rule of 'NP-Prefixing'). This is for very good reasons, as discussed in Reinhart (1997). Also, it has been observed that indefinites can take wide scope at LF; in fact they can take exceptionally wide scope (see among others

adverbial negative particles, e.g. in German and the Scandinavian languages, this condition does not seem to apply. Since these languages do not allow NC, an instance of semantic negation can either be marked by a negative marker or an NI. If an indefinite in object position is in the scope of negation, realizing it as NI is either preferred or in free variation with the semantically equivalent combination of a negative marker and a general or NPI indefinite (see section 6.4 for details). In English, the choice between an NI in object position and the combination of a negative marker and a general or NPI indefinite seems to be tied diachronically to the syntactic status of the negative marker (see also the discussion in section 6.4). This opens up interesting issues regarding the interrelation and interdependence of the syntactic status of the negative marker and preferences on how and where to mark negation, especially under a diachronic perspective.

35 The observation that negation has to be marked on the finite verb might be related to the tendency for a negative marker to precede the finite verb, which Horn (2001) calls the Neg First principle.
Abusch, 1994; Reinhart, 1997). Thus, it is not sufficient to say that NIs are semantically indefinites and thus cannot raise at LF to account for the fact that NIs cannot outscope the licensing negation.

Another attempt to explain the fact that NIs cannot outscope the negation they are licensed by might try to reduce this fact to the observation that negation forms a barrier for LF-movement (cf. Beck, 1996). Negation does not constitute an LF-barrier in all languages, though. In fact, as discussed in Beck (1996), the condition that LF-movement cannot cross certain semantic operators is only effective in languages with the option of making scope relations transparent already in the surface syntax, i.e. languages allowing scrambling. Even in languages where negation gives rise to intervention effects in wh-questions, like English, indefinites can take inverse scope with respect to negation. As is well known, indefinites of the some-series, being PPIs, have to outscope negation in order to satisfy their polarity requirements, even if they occupy a lower position in the surface syntax.

(92) I didn’t read some of the books. \[\text{some} > \text{not}\]

As there does not seem to be an independent explanation of the fact that NIs cannot outscope the licensing negation, I think it is safest to postulate an LF-condition on NIs in addition to the requirement that NIs be licensed in the surface syntax.

(93) \textbf{LF-condition on NIs:}

NIs have to be in the scope of their licensor at LF.

We then end up with the following licensing conditions for NIs. In the surface syntax, NIs have to be c-commanded by a negation, which may be abstract. Moreover, NIs have to be interpreted in the scope of the negation by which they are licensed.

I would like to conclude this section with some remarks about the quantificational status of NIs. The question whether NIs are negative quantifiers in fact puts two properties into one term, but, in principle, the question whether NIs are inherently negative is orthogonal to the quantificational status of NIs. The first question is the one central to my investigation, and I have little to say about the quantificational status of NIs. I believe that an analysis is to be preferred that explains the distribution of NIs with respect to negation on the basis of their ‘negative’ properties alone. This holds especially in the light of two considerations. First, the question how indefinites should be analysed is far from settled (for different proposals see Diesing, 1992; Reinhart, 1997; Landman, 2004; Kratzer, 2005, among others). Second, I do not see what one gains for the analysis of NIs from adopting the indefinites as variables analysis
(see in particular the discussion in section 6.2). In what follows, I analyse NIs as existential quantifiers, but this should be understood as simplification. I do not want to make claims about the quantificational nature of NIs other than that their semantics is exactly the same as for other indefinites. What the semantics of indefinites is has to be settled by considerations well beyond the scope of the present work.

2.3.2 Negative indefinites not associating with sentential negation

So far in the discussion of Zeijlstra's (2004) analysis, according to which NIs have to be licensed by negation under syntactic agreement, I have concentrated on cases where NIs are associated with sentential negation. But NIs can also occur in a number of other contexts. I now turn to the analysis of NIs in these environments, partly following and partly elaborating the account of Zeijlstra (2004).

2.3.2.1 Fragmentary answers The fact that NIs on their own can be used as short answers under a negative interpretation, as in (94), is often adduced as a strong argument in favour of the assumption that NIs are inherently negative.

(94) Q: Chi hai visto? (Italian)
who have.2sg seen
‘Who have you seen?’

n-person

Proponents of the assumption that NIs are semantically non-negative usually reply to this challenge by pointing out that short answers are elliptical, i.e. they contain unpronounced syntactic material, and that the negation licensing the n-word may well be present in the underlying syntactic structure. But then, the other side argues, if short answers are elliptical structures that can contain an unpronounced negation, why are NPIs illicit as negative fragmentary answers (cf. (95))?

(95) Q: Chi hai visto? (Italian)
who have.2sg seen
‘Who have you seen?’

anybody

---

35 There is a third argument against linking an account of the distribution of n-words with the analysis of indefinites. There are items sharing their distribution with NIs (which means that they are n-words) but which are not indefinites. Examples are the focus-sensitive particles neanche (‘neither’/‘not even’) and neppure (‘not even’) in Italian, and ni siquiera (‘not even’) and tampoco (‘neither’) in Spanish (see Herburger, 2001).
Now the reply to this new challenge could be to argue that NIs are self-licensing (cf. Ladusaw, 1992), while self-licensing is not available for NPIs. But what exactly does it mean that NIs are self-licensing? Under the analysis adopted here, self-licensing means that NIs can be licensed by abstract negation and that they can in fact trigger the presence of an abstract negation operator. This explanation why NIs can occur without an overt licenser has also been criticized as not being able to account for the contrast between n-words and NPIs. If licensing by a covert negation is available for NIs, so the argument goes, it should also be available for NPIs. Moreover, Watanabe (2004) points out that, assuming covert negations in elliptical structures, it should also be possible to interpret a term answer such as John in (96b) as meaning 'I didn’t see John.'

(96)  a. Who did you see?—*Anybody.
    b. Who did you see?—John. ≠ 'I didn’t see John.'

So why can the fragmentary answers in (96) not be associated with a structure containing an abstract negation? An explanation, in fact, has already been given in the previous section. There it was argued that the presence of a covert negation is subject to an economy condition, according to which Op— may be inserted into the structure of a clause only if the syntactic derivations would crash otherwise. This is the case if a structure contains an unlicensed [unneg]-feature on an NI.

An unlicensed NPI, in contrast, cannot trigger abstract negation. This follows from recent analyses of NPIs (among others Kadmon and Landman, 1993; Krifka, 1995; Lahiri, 1998), according to which unlicensed NPIs are well-formed in the syntax. It is assumed that clauses containing unlicensed NPIs are ruled out for semantic or pragmatic reasons. Since the syntactic derivation succeeds in cases of unlicensed NPIs, an abstract negation cannot be inserted due to economy. The difference in the ability to trigger abstract negation thus reduces to the different nature of the licensing conditions: syntactic licensing for NIs, semantic/pragmatic licensing in the case of NPIs.

Note that this explanation of the observed contrast between NIs and NPIs regarding occurrence in elliptical contexts only works if NIs in elliptical contexts are assumed to be licensed by a covert negation. Since overt negation is not subject to an economy condition, the proposed explanation does not hold if it is assumed that n-words in certain contexts are licensed by a negative marker deleted under ellipsis. In particular, in non-strict NC-languages like Italian, the underlying structure for n-words serving as negative fragmentary answers has to contain an abstract negation rather than a negative marker.
Thus, the underlying structure for the short answer (97-A1) could not correspond to the full answer in the form of (97-A2), but would rather have to correspond to (97-A3), where the preverbal subject is assumed to be licensed by Op→.

(97) Q: Chi è partito?  
who is left
'Who has left?'

A1: Nessuno.  
n-person

A2: Non è partito nessuno.  
NEG is left n-person

A3: #Nessuno è partito.  
n-person is left
'Nobody has left.'

But (97-A3) is in fact illicit as an answer to the question (97-Q) (Fabrizio Arosio, p.c.). The reason for this is that in Italian a subject has to occur postverbally if it serves as focus (cf. Belletti, 2001). Since in (97) the question is about the subject, the subject has to constitute the focus in the answer.

Therefore, an asymmetry between the structure of full and fragmentary answers involving NIs is predicted. This is in line with Merchant (2004) who argues that in general, the constituent making up the fragment is subject to A′-movement to a clause-peripheral position before clausal deletion applies. In such a clause-peripheral position, an n-word can only be licensed by an abstract negation operator. Accordingly, the underlying structure for the fragmentary answer (97-A1) is assumed to be (98).57

57 An anonymous reviewer brings up the following question-answer pair as a counterargument against the proposed analysis of fragmentary answers (anticipating the analysis of NIs in English):

(i) Q: What did he say?
A: Either something important or nothing at all.

The reviewer argues that, in this case, it cannot be assumed that the NI in the second conjunct is licensed by negation adjoined to CP. This would put the PPI something illicitly in the scope of negation, and the disjunction within the scope of negation, yielding a reading (i-A) does not have. I think it is clear that an NI in one conjunct cannot be assumed to be licensed by negation having scope over the whole conjunction. Rather, it has to be assumed that cases like (i-A) involve conjunction of CPs. The structure I propose to underlie (i-A) is the following:

(ii) either [CP [ something important]; it he said →] or [CP Op→ [ nothing at all]; it he said ∼]
(98) \([\text{CP Op}\ 
eg\ 	ext{nessuno} \left[\text{IP e partito}\right]]\)

The discussion shows that it is possible to account for the fact that NIs can be used as negative fragmentary answers while maintaining the assumption that NIs are non-negative. Moreover, the contrast between n-words and NPIs follows from the different licensing conditions they are subject to.

2.3.2.2 Negation at the non-sentential level  Besides fragmentary answers (and other arguably elliptical contexts), there are further environments in which n-words occur without an overt licenser. These are cases of so-called 'constituent negation', i.e. cases where n-words are not associated with sentential negation. In these cases, postverbal n-words in non-strict NC-languages can occur without a negative marker, as illustrated by the following example:

(99) È rimasto con niente in mano. \hspace{1cm} \text{(Italian)}
    \hspace{1cm} \text{is left with n-thing in hand}
    \hspace{1cm} \text{`He was left with nothing.'} \hspace{1cm} \text{(Zanuttini, 1991: 134)}

Other cases where n-words do not contribute sentential negation can be found in the nominal domain:

(100) a. el nunca terminado puente de los Remedios (Spanish)
    the n-time finished bridge of los Remedios
    'the never finished Los Remedios bridge'

b. el por nadie ignorado maestro Gutiérrez
    the by n-person unknown master Gutiérrez
    'the to nobody unknown master Gutiérrez'

c. unos nada despreciables canapés de salmón
    some n-thing objectionable canapes of salmon
    'some not to be dismissed salmon canapes'
    \hspace{1cm} \text{(Bosque, 1980; cited by Herburger, 2001: 304)}

That CPs can be co-ordinated has to be assumed for independent reasons. In German, where verb second word order is standardly taken to be derived via movement into the CP domain, verb second clauses can be co-ordinated.

(iii) a. Entweder Peter kocht Suppe oder er wäscht seine Socken.
    either Peter cooks soup or he washes his socks
    'Either Peter is preparing soup or he is washing his socks.'

b. entweder [CP Peter; kocht t₁ |VP t₁ |YP t₁ Suppe t₁ |] \mbox{oder} [CP er; wäscht t₂ |VP t₂ |YP t₂ seine Socken t₂ |]
In the examples (100), the negation associated with the NI refers to the participle or adjective. In fact, negation can easily affect participles and other de-verbal adjectives, since these can also be assumed to introduce an event variable. Negation in these cases negates the existence of an event of the kind denoted by the participle or adjective. Sentence (100a) for instance can be paraphrased as 'the Los Remidos bridge for which there was never a finishing event'.

The question is then why adjectival phrases (APs) can contain a negation, assuming as I do that negation can adjoin to semantically complete sentences, i.e. to nodes of semantic type \( \tau \). Heim and Kratzer (1998) argue that APs have an internal PRO-subject and are thus complete sentences in the relevant sense. Consequently, the S-structure underlying for instance (100b) corresponds to (101) (where the internal structure of the participle is pretty much ignored, apart from the assumption that it involves a passive operator PASS, which is responsible for the change in the theta-grid that comes along with passivation (see von Stechow, 2007a)).

As indicated in (101), I assume a covert negation operator licensing the NI is adjoined to the AP. The answer to the question why the n-word is licensed by an abstract negation rather than by an overt negative marker can also be read off the structure (101): the NI precedes the head of AP, parallelling preverbal n-words. If an NI follows the participle or adjective, a negative marker has to precede the expression heading the projection, as illustrated in (102).
(102) a. un estudiante **no** interesado por **nada**  (Spanish)
    a student **NEG** interested for **n-thing**
    ‘a student not interested in anything’

b. un cliente **no** contento con **nada**
    a customer **NEG** satisfied with **n-thing**
    ‘a customer not satisfied with anything’

In a strict NC-language like Russian, on the other hand, where NIs always co-occurn with a negative marker, NIs preceding the adjective or participle also have to be accompanied by a negative marker:

(103) a. **ničem** **ne** interesuūšijsā
    n-thing, INSTR **NEG** interest, PRES-PART, REFL, NOM
    student
    student, NOM
    ‘a/the student not interested in anything’

b. **ničem** **ne** dovol’nyj pokupatel’
    n-thing, INSTR **NEG** satisfied, NOM customer, NOM
    ‘a/the customer not satisfied with anything’

The distribution of NIs within the adjectival domain thus shows the same pattern found in the verbal domain: in strict NC-languages, NIs always require the presence of a negative marker; in non-strict NC-languages only NIs following the head of the projection obligatorily co-occur with a negative marker.

Regarding the question how structures like (101), which are complete sentences although occupying a syntactic position in which they should denote a property, are interpreted, I follow Heim and Kratzer (1998, sec. 8.5), who make the following assumptions: PRO is semantically vacuous and thus has to move at LF for type reasons. Movement of PRO leaves behind a trace of semantic type e, which serves as the subject of the AP. The AP-node is therefore of semantic type t and can serve as an adjunction site for both negation and QR. Crucially, adjunction of negation and QR-ed DPs is to a position below the landing site of PRO, which is semantically vacuous. The highest AP-node is therefore of type \( \langle e, t \rangle \) and can combine with the NP via the intersective composition rule of Predicate Modification. For illustration, the complete LF derived in this manner from the surface structure (101) is shown in (104). (Semantically empty material is included in parentheses and movement indices are written transparently as λ-operators.)
\( \lambda x. \neg \exists y[\text{person}(y) \land y \text{ does not know } x] \land \text{master}(x) \)
Let us next turn to cases in which an n-word occurs inside a prepositional phrase (PP), as those in (105).

(105) a. É rimasto con niente in mano. (Italian)
    is left with n-thing in hand
    ‘He was left with nothing.’

    b. Sono partita con nessun soldo in tasca e
    am left with n-det money in pocket and
    tornata con mille dollari.
    returned with thousand dollars
    ‘I left with no money in my pocket and came back with $1,000.’

    c. Ha detto ciò con nessuna malizia.
    has said so with n-det malizia
    ‘He said so with no malice.’ (Zanuttini, 1991: 134)

Note that these sentences do not involve sentential negation, i.e. negation does not refer to the main predicate but takes scope only inside PP. This raises the question how negation can be interpreted PP internally. Just as APs, PPs based on a contentful preposition such as with can be assumed to have an internal PRO-subject base generated in Spec,PP (see Heim and Kratzer, 1998). This means that PPs can also be assumed to involve a node of semantic type t, to which negation can attach. Consequently, the underlying structure for the PP in e.g. (105b) is (106):38

(106)

The interpretation of this structure proceeds precisely in the same way as demonstrated for APs, so that in the end, we arrive at a property of type \( \langle e, t \rangle \), which can be intersected with the verbal predicate.39

38 The modifier in tasca is omitted, as it is not relevant for the discussion and requires a complex analysis.

39 In fact, deriving the interpretation of (105b) is more complex, once tense is taken into account. A more precise paraphrase is ‘at the time when I left I didn’t have any money in my pocket’, and thus
The fact that NIs can occur inside certain lexical projections like AP or PP without an overt licensor can thus not be taken as an argument for their being inherently negative. Rather, this fact follows from the independently motivated assumption that there are other projections beside verbal projections to which a negation can adjoin, i.e. nodes of semantic type $t$.

2.3.2.3 Clausal complements in the subjunctive As has been noted several times already, n-words in the Romance languages are licensed in the complement clauses of certain DE predicates, such as adversative verbs like deny and doubt.

(107) El testigo negó que la acusada le hubiera dicho nada. (Spanish)

('The witness denied that the defendant had told him anything.')

(Laka, 1990: 217)

(108) Dubito che venga nessuno. (Italian)

('I doubt that anyone will come.')

(Zanuttini, 1991: 143)

Crucially, NIs are only licensed in embedded clauses if the clause involves subjunctive marking. NIs in indicative clauses are ungrammatical, as the contrast between (107) and (109) indicates.

(109) *Este libro niega que Lorca fué nunca asesinado. (Spanish)

('This book denies that Lorca was ever murdered.')

(Laka, 1990: 217)

That the licensing of NIs in embedded clauses indeed depends on subjunctive marking is evidenced by another fact. In Spanish, predicates usually selecting indicative complements such as decir (‘say’) can take complement clauses in the subjunctive when they are negated. Crucially, NIs can only occur in the embedded clause if it is in the subjunctive:

what is intersected have to be temporal properties. But how to get this right does not need to concern us here.

Using the indicative has the further effect that the embedded clause is interpreted as factive, i.e. the indicative variant of (110) presupposes that Pepe in fact knew something about the matter.
(110) No {dije/noté} que Pepe
    neg said/noticed that Pepe
    {supiera/sabía} nada del
    know.3sg.past.subj/know.3sg.past.ind n-thing of-the
    assunto. matter
    'I didn't say/notice that Pepe knew anything about the matter.'
    (Bosque, 1980; cited by Villalta, 2006: 199)

Laka (1990) proposes that complement clauses of inherently negative predicates involve a negative complementizer, and that n-words are licensed by this negative complementizer. While in Spanish, the negative complementizer is homophonous with the normal complementizer, there are languages, such as Basque, where they are phonologically distinct. Laka further assumes that the negative complementizer selects the subjunctive, but subjunctive marking can also go with the normal complementizer. There is thus a one-way correspondence between subjunctive mood and licensing of NIs: all embedded clauses in which n-words are licensed are in the subjunctive, but not all clauses in the subjunctive license n-words.

The assumption that n-words in complement clauses are licensed by a negative complementizer is problematic. As pointed out by Herburger (2001), an entire clause can intervene between the predicate and an n-word (provided the intervening clause is itself in the subjunctive):

(111) Dudo que él haya dicho que María le
doubt.1sg that he has.subj said that María him
    debiera ningún dinero.  (Spanish)
    owed.subj n-det money
    'I doubt that he said that María owed him any money.'
    (Herburger, 2001: 313)

As the verb dudar ('doubt') selects only the complementizer of the clause it immediately embeds, the clause in which the NI occurs could not involve a negative complementizer.\textsuperscript{41}

\textsuperscript{41} Note that Laka's assumption that the negative complementizer is selected by predicates being inherently negative is also problematic in view of examples like (110), where NIs are licensed in the complement clause of a verb that is not inherently negative but in the scope of negation. To accommodate such cases, she assumes that for complementizer selection 'not only the matrix verb, but also the inflectional elements of the matrix sentence play a role' (Laka, 1990: 200). But how this works is not spelled out. I find it much more natural to assume that, in (110), the negation in the matrix clause is the licensor, while in the other cases discussed, the licensor is the negative predicate.
We thus have to conclude that it is in fact the matrix predicate that is the licenser of the NI. This raises two issues for the analysis. First, it needs to be explained why certain expressions other than sentential negation license n-words. Second, the fact that a matrix predicate can license an NI in an embedded clause in the subjunctive violates the claim that licensing of NIs is clause-bounded.

Let us start with the second issue, namely the apparent violation of locality conditions. I say apparent violation because there is evidence that subjunctive clauses do not introduce a clause boundary and hence do not disrupt syntactic locality. It has been observed in the Romance languages that subjunctive marking affects pronoun binding. The examples in (112) illustrate for French that pronominal subjects in subjunctive clauses cannot refer to the matrix subject, cf. (112a), whereas this is possible in indicative sub-clauses, cf. (112b).

(112) a. *Jean₄ veut qu’ il₅ aille à Paris. (French)
   Jean wants that he go.SUBJ to Paris.

   b. Jean₄ croit qu’ il₅ est à Paris.
   Jean thinks that he is.IND in Paris.

   (Johnson, 1985; cited in Progovac, 1994: 111)

On the other hand, reflexive pronouns, which require an antecedent in their local clause, can refer to elements in the matrix clause when they occur in a subjunctive clause (cf. (113a)), but not in an indicative clause (cf. (113b)).

(113) a. On₅ ne souhaite jamais que les gens ne neg
   one NEG wishes n-time that the people NEG
   regardent que soi₅.
   look-at.SUBJ only oneself
   ‘One never wishes that people look only at oneself.’

   b. *On₅ ne dit jamais que les gens disent du mal
   neg one NEG says n-time that the people slander.IND
   de soi₅.
   neg pren oneself
   ‘One never says that people slander oneself.’

   (Pica, 1985; cited in Progovac, 1994: 113)

This indicates that a clause in the subjunctive is part of the local domain for pronoun binding.

It can be concluded that subjunctive clauses do not introduce a clause boundary and do not disrupt syntactic locality.42 The fact that NIs can be

42 Progovac (1994) proposes that in subjunctive clauses CP (and IP) can be deleted at LF, and the effect is one of clause union. But under the account of NI licensing taken here, according to which NIs
licensed by a higher licensor in subjunctive clauses, but not in indicative subclauses, thus follows from the assumption that the licensing of NIs is a form of syntactic agreement and is as such subject to syntactic locality constraints.

Now that it is established that the licensing of NIs in subjunctive clauses does not violate locality conditions, let us turn to the next question: Why do expressions like doubt or deny license NIs? Under the analysis of Zeijlstra (2004), this can be explained by assuming that these expressions carry the feature [ineg]. As it is argued that [ineg] is a feature on elements interpreted as negation, the question arises whether it is justified to extend [ineg] to expressions other than sentential negation. Expressions like doubt or deny are certainly negative in an intuitive sense, i.e. they have a negative connotation. They are also negative in a formal sense, i.e. they are DE. But being DE is not sufficient to license n-words, which require the presence of a negation. Zeijlstra (2004) suggests that the predicates and prepositions licensing NIs can be lexically decomposed into a negation and a non-negative part. For instance, doubt is decomposed into not be sure. But he does not lay out the assumed decomposition in general, and in fact I do not see how this can be done in a principled way applying to all and only the expressions licensing NIs.

There is also a general consideration which makes it doubtful that the property of being an NI licensor should be derived from the semantics of the respective expression. If it was, one would expect that an expression licensing NIs in one language should also license n-words in any other NC-language. But the contexts in which NIs are licensed varies considerably from one language to another. For instance, the verb meaning forbid in Spanish licenses NIs in its complement, as illustrated in (114a), but its counterpart in French

have to be licensed in the surface syntax, clause union at the level of LF is not sufficient. The data from pronoun binding also suggest that clause union already holds at S-structure, the level where Binding Theory is standardly assumed to apply (cf. Chomsky, 1981).

43 One might try to explain the fact that n-words in many of the Slavic languages (in particular Russian, cf. Brown, 1999; Polish, cf. Błaszczyk, 2001; and Serbian/Croatian, cf. Progovac, 1994) are never licensed in contexts other than sentential negation and under the preposition corresponding to without by arguing that these languages do not have a subjunctive that induces clause union. But the fact that expletive uses of the negative marker can occur in complement clauses of certain adversative predicates (see footnote 54) argues against this line of reasoning.

Interestingly, in Ukrainian, NIs can occur under a positive interpretation in complement clauses of adversative predicates if the clause is headed by the subjunctive complementizer čob:

(i) Bojusja, ščob vin nikoho ne zustriv podorozj dodomu.
afraid,REFL that+SUBJ be n-person,ACC NEG meet,FUT,3SUBJ on-way to-home

'I'm afraid that he will meet someone on his way home.'
does not, which is evidenced by the fact that the NI in (114b) cannot have a non-negative interpretation.

(114) a. Prohibieron que saliera nadie. (Spanish)
   forbade.3PL that went-out.3SG.SUBJ n-person
   ‘They forbade that anybody went out.’
   (Bosque, 1980, cited in Herburger, 2001: 297)

   b. J’ interdis que tu (n’) appelles
   I forbid.1SG that you NEG call.2SG.SUBJ
   personne.
   n-person
   ‘I forbid that you call anyone.’
   ‘I forbid that you don’t call anyone.’

If assignment of the feature [in\neg] was determined just by the semantics of an expression, the difference in the set of the expressions which license n-words in a particular language does not follow. It does not seem possible to give a principled characterization of the expressions licensing NIs, and hence the rules governing assignment of the feature [in\neg], and moreover to relate it to sentential negation. I defer a more detailed discussion of this issue to section 2.3.2.5, and first consider more contexts in which n-words occur.

2.3.2.4 *Comparative constructions* In some NC-languages, n-words also occur without a negative marker in the complement of comparatives. Sentence (115) illustrates this for Spanish, Portuguese, and French.44

(115) a. Juan trabaja más que nadie. (Spanish)
   Juan works more than n-person
   ‘Juan works more than anyone (else).’

   b. Maria canta meglio di nessuno di voi.
   (Italian)
   Maria sings better than n-person of you
   ‘Maria sings better than anyone of you.’

   b. Maria lavora di più di quanto lavori nessuno di voi.
   Maria works of more of how-much works.SUBJ n-person of you
   ‘Maria works more than anyone of you does.’
   (Zanutttini, 1991: 119)

My Italian informants find (i-b) slightly better than (i-a), but still highly marked. I suspect that this (slight) contrast in grammaticality is related to the fact that Italian allows an ‘expletive’ (i.e. semantically void) negation marker in clausal complements of comparatives (see Napoli and Nespor, 1976). If this expletive negative marker is present, NIs are completely fine, cf. (ii).

(iii) Maria lavora di più di quanto non lavori nessuno di voi.
   Maria works of more of how-much NEG works.SUBJ n-person of you
   ‘Maria works more than anyone of you does.’

44 For Italian, Zanutttini, (1991: 119) reports a contrast between phrasal and clausal complements of comparatives: NIs can only occur in clausal complements of comparatives but not in phrasal ones.
b. O Paulo trabalhou mais do que
the Paulo worked more than

ninguém.  

n-person

'Paulo has worked harder than anybody (else).'  

(Marques, 2003)

c. Il travaille plus qu' aucun d' entre eux.
he works more than n-det of among them

(French)

'He works more than any of the others.'

One attempt at explaining the occurrence of n-words in comparatives might try to reduce them to cases of NIs in elliptical structures, as it is generally assumed that comparative complements involve ellipsis (cf. Bresnan, 1973). For instance, sentence (116a) is assumed to have the underlying structure (116b), where the VP in the than-clause is deleted under ellipsis. The underlying structure of a sentence like (116a) is thus assumed to parallel (116c), where the adjective in the than-clause is different from the one in the matrix clause and ellipsis cannot apply.

(116) a. John is taller than Mary.

b. John is taller than Mary is-tall.

c. The table is longer than the door is high.

One might argue that what is responsible for the licensing of n-words in comparatives is an abstract negation in the than-clause, which is subject to ellipsis (see Marques, 2003). It has in fact been proposed by Seuren (1973) that the comparative complement always contains a negation in the semantics. Seuren's analysis of the comparative has recently been employed to account for the notoriously complex scope-taking behaviour of quantifiers in than-clauses (Gajewski, 2008; Schwarzschild, 2008). According to this analysis, the comparative complement of (117a) has the structure (117b), and (117a) expresses the truth conditions in (117c) (read as: There is a degree of tallness that John reaches and Mary doesn't reach).

45 This applies to complements of comparatives that have a plausible clausal source. Measure phrases and definite descriptions referring to measure phrases serving as comparative complements cannot be related to clauses. For instance, (i-a) cannot be derived from (i-b).

(i) a. Usain Bolt ran faster than the world record.

b. Usain Bolt ran faster than the world record ran.

(17) a. John is taller than Mary.
   b. than NOT Mary is tall
   c. \( \exists d \{ \text{Height}(J) \geq d \ & \text{NOT} \ \text{Height}(M) \geq d \} \)

Adopting this analysis, n-words in comparative complements could be argued to be licensed by negation.

There is however something worrisome in this assumption. The negation assumed to be present in than-clauses can never be expressed overtly. In non-elliptical clausal complements, one would expect the licensing negation to be visible. At least, a negative marker should be there in a non-strict NC-language like Spanish if the comparative complement involves an n-word in postverbal position. This expectation is not borne out. NIs can also occur in non-elliptical clausal complements, but, crucially, the presence of a negative marker is excluded, as shown in (18).

(18) El piso cuesta más de lo que (*no) puede
   permitirse ningún estudiante.  \( \text{(Spanish)} \)
   afford n-det student
   'The flat costs more than a student can afford.'

In general, overt negation (or more generally DE expressions) cannot occur in comparative complements, cf. (19).

(19) *John is taller than Mary isn't.

Sentences such as (19) simply do not make sense, even though there seems to be nothing wrong with them from a syntactic point of view. Under a Seuren-style analysis of the comparative this can be explained by assuming that there is still a covert negation in the than-clause resulting in two negations canceling each other (see von Stechow, 1984a; Gajewski, 2008).\(^{46}\)

\(^{46}\) Under the standard analysis of comparatives (cf. von Stechow, 1984a; Heim, 2001), this comes out as a consequence of the semantics of the comparative morpheme \(-er\) involving a max operator, which picks its maximal element from a set of degrees.

\[(\sim \cdot \sim) = \lambda D. (\lambda D'(t,d), \text{max}(D') > \text{max}(D))\]

Sets of degrees based on DE expressions are non-finite, and thus do not have a maximal element. Consequently, the application of max to such a set is undefined. Note incidentally that negation can occur in comparative complements if the resulting set of degrees has an upper bound. This is the case in the following examples (ii-a) is from Beck (2010), (ii-b) is due to an anonymous reviewer:

(ii) a. I haven't been to the hairdresser longer than I haven't been to the dentist.
   b. More professors were present than were not.
Negative Indefinites

(120)  a. than NOT Mary isn't tall  
       b. \( \exists d \left[ \text{Height}(J) \geq d \ \& \ \text{Height}(M) \geq d \right] \)

Sentence (119) then expresses the truth conditions in (120b), according to which there is a degree of tallness that both John and Mary reach. These truth conditions are trivial, as there is always a common degree of tallness (e.g. 0.01 cm). The unacceptability of (119) can then be attributed to its underinforma-
tivity.

It seems strange to assume the presence of a negation operator in the than-
clauses that can never be realized overtly. Moreover, a Seuren-style analysis cannot deal with certain other aspects of comparative constructions, in particular differential comparatives, as e.g. John is two inches taller than Bill (see von Stechow, 1984a; Beck, 2010). Thus, I do not assume that NIs in comparative complements are licensed by a negation operator that is somehow connected to the comparative. Making the reasonable assumption that the semantics of the comparative is cross-linguistically the same, one would also expect that n-
words in comparative complements are generally acceptable in NC-languages. This is however not the case. In the Slavic languages, NIs cannot occur in comparative complements, as (121) illustrates for Ukrainian.

(121) *Petro rozumnišij, niž nixto inšij.  (Ukrainian)
    Peter smarter than n-person other
    'Peter is smarter than anyone else.'

The range of languages in which NIs can occur in comparatives under a non-negative interpretation is rather limited. They are attested in Spanish, Portuguese, and French. These are also the languages that allow NIs in certain other environments that are not strictly negative. I suggest that the occurrence of NIs in comparatives is due to the same reason, namely that these expressions

In (ii-a), there is a limit to the duration in which the speaker hasn’t been to the hairdresser (her birth if she has never seen a hairdresser in her life); (ii-b) is about a particular set of professors, e.g. the ones of a particular department. The number of absent professors thus has an upper bound.

There are two different comparative constructions in Ukrainian. The first involves za, which is presumably a preposition. In this construction, NPs cannot occur, cf. (i-a). The other construction uses niž, and the fact that NPs are licensed, cf. (i-b), suggests that it is the analogue to the than-
comparative in English.

(i)  a. ??Petro rozumnišij za koho-nebud' inšoh v svojemu klasi.  (Ukrainian)
    Peter smarter than anybody\textsc{gen} other in his class
    'Peter is smarter than anybody else in his class.'

       b. Petro rozumnišij, niž xto-nebud' inšij v joho klasi.
       Peter smarter than anybody other in his class
       'Peter is smarter than anybody else in his class.'
developed diachronically from NPIs. There are still some residual DE-contexts in which they are licensed although their feature make-up changed.

Similar issues discussed for comparatives arise for NIs in the complement of an equative. Interestingly, the set of languages allowing NIs in equatives does not correspond to the set of languages where NIs are possible in comparatives. In Ukrainian, for instance, where n-words cannot occur in comparatives, cf. (121), they are fine in equatives.

(122) Petro takyj rozumnýj jak níxto inšyj. (Ukrainian)
‘Peter is smarter than anyone else.’

NIs do not only occur in equatives in NC-languages but also in DN-languages such as German, as illustrated in (123).

(123) Helena ist so schön wie keine andere (Frau). (German)
‘Helena is as beautiful as n-det other (woman)
‘Helena is more beautiful than any other woman.’

The fact that even in DN-languages NIs are allowed in complements of equatives indicates that it is possible to have a semantic negation in this environment. In NC-languages, NIs in this environment can thus be assumed to be licensed by an abstract negation.

This, however, begs the question why the complement of an equative can be semantically negative while the complement of a comparative cannot. Generally, the semantics of equatives is assumed to be parallel to that of comparatives.48

One would thus expect that NIs in equatives are excluded as well. But example (123) is grammatical and expresses something sensible, namely that Helena’s beauty exceeds every other woman’s beauty. The question is how this meaning can be derived.

It is known that many cases where quantifiers occur in the comparative complement have readings that correspond to wide scope of the quantifier over the comparative operator under the standard analysis (see von Stechow, 1984a; Schwarzschild and Wilkinson, 2002, among others). However, if we try

---

48 Under the standard analysis (von Stechow, 1984a), the only difference is that the equative denotes the relation ≥, while the comparative morpheme denotes the relation >, i.e. while the comparative is false if the two sets of degrees have the same maximum, the equative is true in this situation.

\[
\lambda \text{as} = \lambda D(i, j), \lambda D’(i, j); \max(D’) \geq \max(D)
\]

Under this analysis, negation in the equative complement is excluded in the same way as for comparatives (see among others Rullmann, 1995b).
this option and raise the NI in (123) above the equative operator, we derive incorrect truth conditions. What we get is 'there is no woman who is equalled or surpassed in beauty by Helena', or in other words, Helena is in fact the least beautiful woman. This is exactly the opposite of what sentence (123) means intuitively. Therefore, under the standard analysis of equatives, which parallels that of comparatives, it is not possible to derive the correct interpretation for a sentence with an NI in the complement.

Generally, it does not seem to be an unwelcome prediction that the complement of an equative cannot contain a negation. Sentences such as (124), where a negative marker occurs in the complement, are just as degraded as cases of negation in comparatives.

(124) "Das Regal ist so hoch wie die Tür **nicht** breit
the shelf is as high as the door **neg** wide
ist.

(German)

is

'The shelf is as high as the door isn't wide.'

Such examples improve considerably if the degree to which the degree expressed by the matrix clause is compared is identifiable in the context. Sentence (125), for instance, makes reference to the unemployment rate reached ten years ago, but never after. This is evidenced by the fact that a sentence like (125) is perfect if *mehr* ('anymore') is included, which presupposes that the degree of unemployment reached now was reached before.

(125) Die Arbeitslosigkeit ist so hoch wie seit zehn Jahren
the unemployment is as high as for ten years
**nicht** ???(mehr).

(German)

**neg** anymore

'The unemployment rate reached a level it last reached ten years ago.

Another indication that NIs in equative complements are somewhat exceptional comes from the observation that the equative cannot be modified by *exactly* or similar expressions, if there is an NI in the complement (cf. von Stechow, 1984b). This is exemplified by the contrast in (126).

(126) a. Peter ist | genau/doppelt/halb | so groß wie Julia.
Peter is exactly/double/half as tall as Julia

(German)
b. Peter ist { *genau/*doppelt/*halb } so groß wie
Peter is exactly/double/half as tall as

niemand (sonst).
n-person (else)

Furthermore, NIs in equatives are not possible in all languages. English contrasts with German in this respect, as observed by von Stechow (1984b).

(127) *? She works as hard as never (before).

In Dutch too NIs cannot occur in equatives.

(128) ??Hij werkt zo hard as nooit tevoren. (Dutch)
He works so hard as n-time before

The fact that NIs can occur in equative complements in some languages remains a puzzle. More work on the semantics of equative constructions and cross-linguistic differences is needed in order to solve it.

2.3.2.5 Concluding remarks Two different kinds of environments have to be distinguished in which NIs occur without an overt sentential negation serving as licenser. In the first kind of context, the licensing negation can be assumed to be covert. This is the case for preverbal NIs in non-strict NC-languages, and also for some constellations where the negation associated with NIs does not take scope at the sentential level. Other environments in which n-words are assumed to be licensed by a covert negation are elliptical structures, such as fragmentary answers and equative constructions.

In other environments, NIs cannot be assumed to be licensed by an abstract negative operator. This has been shown for n-words in clausal complements of adversative predicates and comparatives. Further cases are n-words in questions (in Italian) and under the preposition corresponding to without. Here it is assumed that the respective operator carries the feature [i\neg] and thus licenses n-words. For some of these licensers it can be argued that they have the feature [i\neg] because their semantics involves a negation, e.g. in the case of without, but for others, in particular comparatives and questions, this is not possible.

Assigning the operators licensing n-words the feature [i\neg], even though not all of them can be related to a semantic negation, somewhat undermines the claim that n-words have to be licensed by a semantic negation. However, a somewhat arbitrary treatment of the licensers is probably exactly what is needed, as the precise set of contexts in which n-words are licensed in each language seems to be somewhat arbitrary. If one tried to reduce the fact that a certain operator licenses n-words entirely to its semantic properties,
it could not be explained that languages vary regarding the contexts in which n-words are licensed. For instance, only a rather small number of languages allow n-words in comparatives. If one tried to reduce to the semantics of the comparative construction the fact that n-words in comparatives are licensed, for example in Spanish, one would predict that n-words are licensed in comparatives in all languages, contrary to fact. It is, of course, theoretically possible that the difference between languages regarding the licensing of n-words in comparatives is due to a difference in the comparative construction itself, but for closely related languages this seems rather unlikely.

Taking a diachronic perspective on NIs, it can be observed that NIs develop out of NPIs. This development is a gradual change not affecting all items and all contexts alike (see Jäger, 2007). It is possible that one item of a certain class (or series in the case of indefinites) is already an NI, while others of the same class are still more like NPIs.\(^{49}\) At the same time, the use of items that used to be NPIs can be retained in some DE-environments, although these items have already been re-analysed as NIs and are no longer licensed in other DE-environments. Thus, NIs can occur in certain non-strictly negative DE-contexts as a consequence of their NPI-heritage, although they are not NPIs any longer. Haspelmath (1997) suggests that DE-contexts in which NIs occur form a hierarchy or implicational map, such that, if a certain language allows NIs in one context, it will also allow them in all stronger ones. The fact that NIs are still licensed in questions in Italian illustrates however that the environments that are most strongly negative are not always retained the longest as licensing contexts.

In sum, the need for a somewhat arbitrary assignment of [\text{INEG}] features to licensors seems to be a consequence of the diachronic development of NIs in these languages, and occurrences of NIs in certain non-strictly negative DE-environments are due to NIs wearing their NPI heritage on their sleeves, so to speak. How this can be formulated precisely is a question that can only be answered from a diachronic perspective and is thus beyond the scope of this book.

2.3.3 Negative concord in French

This section is concerned with the behaviour of NIs in certain NC-languages, which the analysis of Zeijlstra (2004) cannot account for. While the difference between strict vs. non-strict varieties of NC is elegantly accounted for by reducing it to the status of the negative marker, there are more differences

\(^{49}\) This seems to be the case for the indefinite temporal adverbs mai (‘never’) in Italian and jamais (‘never’) in French, which can occur in a wider set of DE-environments than other NIs.
between NC-languages, which cannot be explained in this way. This will motivate a revision of Zeijlstra's analysis, resulting in a more fine-grained analysis that accounts for the behaviour of NIs in certain languages Zeijlstra's analysis cannot handle. I focus on the properties of NC-constructions in French, which, as we have already seen in section 2.2.2.2, shows a number of peculiarities setting it apart from other NC-languages.

One interesting property of French is its having two negative markers, the preverbal clitic *ne* and the postverbal particle *pas*. In clauses without NIs, *ne* and *pas* generally occur together, as exemplified in (129). (Again, I am considering standard, written French, rather than colloquial French, in which *ne* is optional.)

(129) Je *n’* ai *pas* fain.
     
I neg have neg hunger
     
'I'm not hungry.' (Rowlett, 1998: 27)

In fact, *ne* on its own is not sufficient to negate a sentence, as shown in (130).

(130) "*Marie* *n’* aime Paul
     
Marie neg likes Paul
     
'Marie doesn’t like Paul.' (Rowlett, 1998: 34)

Rowlett (1998) argues that *pas* corresponds to semantic negation, while *ne* is semantically vacuous. Under Zeijlstra's (2004) approach, this means that *pas* has the feature [neg], while *ne* carries [uneq]. Zeijlstra further assumes that *ne* is the head of NegP, and that *pas*, being base generated in a VP-adjunct position, moves to Spec,NegP. These assumptions yield the intermediate structure (131a) for (129), where *pas* licenses *ne* under c-command. Further on in the derivation, the subject and the finite verb move to TP. Since NegP in French is assumed to be located below TP (cf. Pollock, 1989), the finite verb moves through Neg° and picks up *ne* on its way to T°. *Pas* stays behind in Spec,NegP, and the surface structure (131b) is derived.

(131) a. \[
\text{NegP pas}_{j} [\text{NegP ne}_{j} ] \text{[vp' ti [vp je ai fain ]]} \]

b. \[
\text{tp jei [T° [ n'ai; ] k ] NegP pas}_{i} [ \text{NegP e}_{k} ] \text{[vp' ti [vp ti t_j fain ]]} \]

The negative markers *ne* and *pas* exhibit a stark contrast in their ability to participate in NC with NIs. NIs obligatorily co-occur with *ne* independently of their position. This pattern of strict NC with respect to the negative marker *ne*, shown in (132), is what we would expect from the assumption of *ne* being inherently non-negative.
(132) a. *Personne *(n’) est *(pas) venu.
   n-person NEG is NEG come
   ‘No one came.’ (Rowlett, 1998: 182)

   b. Jean *(n’) a *(pas) vu personne.
      Jean NEG has NEG seen n-person
      ‘Jean hasn’t seen anybody.’ (Rowlett, 1998: 178)

The behaviour of *pas is unexpected. As illustrated in (132), *pas cannot co-occurs with NIs. Again, this holds for pre- and postverbal NIs alike. To be more precise, *pas cannot co-occur with NIs under an NC-reading. The co-occurrence of *pas and NIs always yields a DN-reading.

(133) a. Jean n’ a *pas vu personne.
   Jean NEG has NEG seen n-person
   ‘Jean has not seen no one.’ (‘Jean has seen someone.’) [DN]
   *‘Jean hasn’t seen anyone.’ [‘NC]
   (Rowlett, 1998: 178)

   b. Personne n’ est *pas venu.
       n-person NEG is NEG come
       ‘Nobody didn’t come.’ (= ‘Everybody came.’) [DN]
       *‘Nobody came.’ [‘NC]
       (Rowlett, 1998: 182)

This poses a problem for the analysis of Zeijlstra (2004). Assuming the negative marker *pas to bear [ineg], it is expected to license NIs and participate in NC. Under Zeijlstra’s analysis, the feature [uneg] on the n-word in (133a) should be licensed by [ineg] on *pas, the same way [uneg] on ne is.

(134) [Negp pas [ineg] i [Negp ne [uneg]] [vp t [vp Jean a vu personne [uneg]]]]

One would expect *pas to give rise to the same pattern of non-strict NC found in Spanish and Italian, where the negative markers are also analysed as being semantically negative. But unlike the negative markers in Spanish and Italian, *pas never enters an NC-relation with n-words, not even with NIs it precedes.

The fact that *pas and NIs cannot co-occur under an NC-reading cannot be explained by assuming NIs in French to be inherently negative, since NIs such as personne and rien can enter an NC-relation with each other, cf. (135) (although a DN-reading is also possible; see below).

(135) a. Personne ne parle à personne.
       n-person NEG talks to n-person
       ‘No one talks to anybody.’
b. Personne ne dit rien à personne.
   n-person NEG says n-thing to n-person
   ‘No one says anything to anybody.’

To account for the data in (135), one would have to assume that NIs in French are at least ambiguous between negative quantifiers and non-negative expressions. But then non-negative NIs should be able to co-occur with pas under an NC-reading. So assuming an ambiguity for NIs in French does not help to solve the problem.

The fact that the combination of pas and an NI only yields a DN-reading shows that pas does not license NIs, although pas is assumed to have the feature [ineg], and NIs in French have the feature [uneg], witnessed by their ability to participate in NC. Since pas is not a licenser for NIs, an abstract negation operator has to be inserted into the structure in order to license NIs. Because there are two semantically negative elements, pas and Op¬, an interpretation with two negations results.

The fact that n-words in French can only be licensed by a covert negation, but not by an overt element denoting negation, shows that Zeijlstra's system is too coarse-grained. It derives all NC-relations by means of the feature pair [uneg]/[ineg]. But in French, we see that not every semantically negative element bearing [ineg] can license NIs. For French, we thus need to differentiate between licensing by overt and covert negation. Consequently, one pair of features is not sufficient. Thus, I propose to introduce another feature pair, [ineg0] and [uneg0]. [ineg0] is the feature assigned to the semantically negative element not realized phonologically, i.e. Op¬. Accordingly, expressions bearing the corresponding uninterpretable feature [uneg0] have to be licensed by Op¬ carrying [ineg0]. The feature [ineg], on the other hand, is assigned to semantically negative elements having phonological content, such as the negative markers in Italian and Spanish. The corresponding feature [uneg] can be checked not only by [ineg] but also by [ineg0]. This explains why n-words in Italian and Spanish, which are assumed to have the feature [uneg], can be licensed both by the negative marker and Op¬. The inventory of negative features I assume is summarized in (136).

(136) **Inventory of [NEG]-features:**

a. Interpretable features:
   (i) [ineg] on (some) negative markers
   (ii) [ineg0] on the abstract negation operator Op¬

b. Uninterpretable features:
   (i) [uneg] has to be checked by [ineg] or [ineg0]
   (ii) [uneg0] has to be checked by [ineg0]
The fact that n-words in French cannot be licensed by *pas* can be explained by assuming them to have the feature [uneg/∅]. As *pas* carries [inég], it cannot check [uneg/∅]-features. Thus, for sentence (133a), repeated as (137), licensing of *personne* by *pas* is not possible.

(137) a. Jean n’ a **pas vu personne.**
   Jean NEG has NEG seen n-person
   ‘Jean has not seen no one.’ (= ‘Jean has seen someone.’)

(138) [TP Jean n’a [NegP pas[uneg/∅]i [VP t[VP v personne[uneg/∅]]]]]

In order to check the [uneg/∅]-feature on the n-word, Op−, carrying the feature [inég/∅], has to be present. I assume that Op− is inserted as low in the structure as possible to license an n-word inside VP, i.e. adjoined to VP. Thus, the structure underlying (137) is (139).

(139) [TP Jean n’a [NegP pas[inég] [VP Op−[inég/∅] [VP v personne[uneg/∅]]]]]

Accordingly, the resulting interpretation involves two negations (‘it is not the case that Jean didn’t see anyone’).

In contrast to NIs, the negative marker *ne* can be licensed both by *pas*, cf. (140a), and Op−, cf. (140b).

(140) a. Je n’ ai **pas** faim.
   I NEG have NEG hunger
   ‘I’m not hungry.’

   b. **Personne** n’ est venu.
   n-person NEG is come
   ‘No one came.’

   (Rowlett, 1998: 27)

   (Rowlett, 1998: 182)

This can be explained by assuming *ne* to have the feature [uneg], which can be checked both by [inég] (on *pas*) and [inég/∅] (on Op−). A remaining question is why *ne* on its own is not sufficient to negate a clause, cf. (141).

(141) *Marie n’ aime Paul
   Marie NEG likes Paul
   ‘Marie doesn’t like Paul.’

   (Rowlett, 1998: 34)

As *ne* can be licensed by Op−, it should be self-licensing the same way NIs are, i.e. being able to trigger the insertion of Op−. The fact that (141) is ungrammatical shows that *ne* on its own is not sufficient to force the presence of Op−. *Ne* is unlicensed unless the overt negation *pas* or an NI, triggering Op−, is present. Another question concerns the question how *ne* is licensed.
While Zeijlstra (2004) assumes that NIs can be licensed at any point during the derivation, I assume that NIs have to be licensed under c-command in the surface syntax. But for the negative marker ne, licensing on the surface is not tenable as a condition, as ne moves along with the finite verb to T₀ where it is not c-commanded by pas. Thus, there are a number of subtle differences between the licensing requirements of negative markers being concord items, i.e. semantically non-negative, and NIs. As my focus is on licensing requirements of NIs, I will disregard licensing of these negative markers.

Returning to the licensing of NIs, the following question arises: why are NIs in French more particular about the negation by which they are licensed than n-words in other languages? Why can an overtly realized negation not do the job? I propose that this peculiarity of NC in French has to do with the diachronic status of this language. Standard French occupies a stage in the Jespersen Cycle where both the negative marker attached to the finite verb and the adverbial negative marker are obligatory. But colloquial, spoken French has moved on to the next stage where the negative marker on the finite verb has become optional. This means that in the spoken language, ne can be omitted. For instance, (142) is grammatical in colloquial French, and generally preferred to the version including ne in (129).

(142) J' ai pas faim. (Colloquial French)
I have NEG hunger
'T'm not hungry.' (Rowlett, 1998: 27)

The change towards a language making exclusive use of an adverbial negative marker also affects NIs. In earlier stages of the language, up to the seventeenth century, NC between pas and NIs was possible, as illustrated in the following example.50

(143) On ne veut pas rien faire ici qui vous déplaise.
we NEG want NEG n-thing do-INF here which you
displease.SUBJ
'We don't want to do anything here which could displease you.'
(Jean Racine, 1668, Les Plaideurs, Act II, Scene 6)

This shows that n-words in French used to carry the feature [uNEG] and could be licensed by pas. Loss of the preverbal negative marker ne goes hand in hand

50 In some non-standard varieties of French, e.g. Québécois, NC between pas and NIs is still possible.

(i) J' ai pas vu personne. (Québécois French)
I have NEG seen n-person
'I didn't see anyone.' (Rowlett, 1998: 178)
with the change from a strict NC-language to a DN-language. NIs become more and more independent of the negative marker. As in colloquial French *ne* is omitted, NIs are often the only expressions marking a sentence as negative, as in the example (144):

(144) Je mange rien.  
  I eat n-thing  
  ‘I don’t eat anything.’

Rather than assuming that there is a change in the semantic status of NIs, i.e. assuming them to become inherently negative, I propose that, in fact, the semantic negation associated with NIs has become obligatorily covert.

The fact that French occupies an intermediate stage in between an NC- and a DN-language gives rise to another peculiarity. As already discussed in section 2.2.2.2, clauses involving multiple NIs are ambiguous between an NC- and a DN-reading, cf. (145).

(145) \textbf{Personne} n’ aime \textbf{personne}  
  n-person \textbf{NEG} loves n-person

a. ‘No one loves anybody.’  \hspace{1cm} [NC]

b. ‘No one loves nobody.’ (= ‘Everybody loves somebody.’)  \hspace{1cm} [DN]

Again, I do not want to explain the availability of the DN-reading by resorting to the assumption that NIs in French are ambiguous between non-negative n-words, subject to licensing and negative quantifiers. The DN-reading can be derived while maintaining the assumption that NIs in French are always non-negative, by allowing multiple covert negations in one clause. The ambiguity of sentences with multiple NIs can be explained by assuming that Multiple Agree of the feature [\text{un\text{neg}}] is not obligatory in French. Thus, optionally, each NI can be licensed by a separate Op$^\neg$.\textsuperscript{51} The NC-reading (145a) is derived from structure (146), where one Op$^\neg$ licenses both NIs simultaneously.

(146) \text{TP$^\neg$ [\text{Op$^\neg$[\text{INEG\$\theta\$} [\text{TP \textbf{personne$_{\text{un\text{neg}}\$\theta\$}$ ne aime [\text{VP \textbf{personne$_{\text{un\text{neg}}\$\theta\$}$]]}]]}}}

There is a second structure available for (145), corresponding to the DN-reading (145b). This structure involves two abstract negations, one adjoined to TP and licensing the subject NI, and a second Op$^\neg$ adjoined to VP, licensing the NI inside VP.

\textsuperscript{51} This option is however not unlimited. Clauses containing three or more NIs (or \textit{pas}) do not have readings with more than two negations. This de facto limit on the number of semantic negations is presumably due to limitations of the processing capacities. More than two negations can simply not be processed by the interpretative system.
(147) \[ \text{TP' Op}^{-\{\text{NEG}\}} [\text{TP personne}_{\text{NEG}}] \text{ ne aime} \]
\[ \text{[VP' Op}^{-\{\text{NEG}\}} [\text{VP personne}_{\text{NEG}}] )] ) \]

Assuming both structures (147) and (146) to be available for (145) explains why the sentence is ambiguous. No ambiguity for NIs needs to be postulated.

It has been observed (see Corblin, Déprez, de Swart and Tovena, 2004) that the availability of a DN-reading depends on the position of the NIs involved. A DN-reading between a subject and a direct object (cf. (148a)) is easily available, while a DN-reading between a direct object and an indirect object is not possible (cf. (148b)).

(148) a. \textbf{Personne} ne parle à \textbf{personne}.
\text{n-person NEG talks to n-person}
\begin{enumerate}
\item ‘No one talks to anybody.’ [NC]
\item ‘No one talked to no one.’ (‘Everyone talked to somebody’) [DN]
\end{enumerate}

b. \textit{Je n’ ai recommandé \textbf{personne} à \textbf{personne}.}
\text{I NEG have recommended n-person to n-person}
\begin{enumerate}
\item ‘I haven’t recommended anyone to anybody.’ [NC]
\item * ‘I have recommended no one to nobody.’ [‘DN]
\end{enumerate}
\begin{enumerate}
\item (= ‘I have recommended everyone to somebody.’)
\end{enumerate}

This contrast in the availability of a DN-reading is easy to explain under the assumption that DN-readings of multiple NIs are due to the presence of multiple abstract negative operators. If an NI occurs in subject position (Spec,TP), Op− has to be adjoined to TP in order to license it. Then another Op− can be adjoined to VP to license a VP-internal NI, as demonstrated in (147). But in case of two NI-objects, as in (148b), both NIs are VP-internal, as witnessed by their following the perfect participle. Since the lowest position a negation operator can be adjoined to is VP, both NIs are licensed by Op− adjoined to VP, as shown in (149).52

52 If licensing of the negative marker \textit{ne} is taken into account, the configuration required is probably one in which abstract negation c-commands \textit{ne} too. Thus, Op− has to be adjoined to TP.

(i) \[ \text{TP' Op}^{-\{\text{NEG}\}} [\text{VP je ne}_{\text{NEG}}] ai [\text{VP recommandé personne}_{\text{NEG}}] \text{ a personne}_{\text{NEG}}] \]

The unavailability of a DN-reading in this configuration then follows from Relativized Minimality (cf. Rizzi, 1990), according to which uninterpretable features have to be checked by the next matching interpretable feature. The structure from which a DN-reading would be generated (cf. (ii)) is ruled out, because both NIs have to be licensed by the lower Op− (in order to obey Relativized Minimality), and \textit{ne} on its own cannot trigger another abstract negation. (Incidentally, the reading corresponding to (ii) would not be the DN-reading paraphrased in (148b-ii) but rather ‘I recommended someone to somebody’).
This corresponds to the NC-reading (148b-i). As the lowest position for negation is above VP, it is not possible to insert a second abstract negation into the structure, such that the DN-reading (148b-ii) would be derived.33

The ability of n-words to introduce ‘their own’ Op¬ can be regarded as a consequence of French developing towards a DN-language. Because n-words in French have taken to introduce negation on their own, they can also be associated with a negation when it is not necessary, i.e. when another licenser is around. Again, rather than assuming that NIs become inherently negative, I propose that what is happening is the affinity between NIs and the licensing negation in the form of Op¬ becoming stronger. The peculiarities of the NC-system in French can, therefore, be related to the fact that French is currently undergoing diachronic change from an NC-language to a DN-language. But, crucially, this does not mean that NIs in French receive negative force by becoming inherently negative. Instead, the licensing relation between NIs and sentential negation gets closer, in the sense that NIs associate with an abstract negation of their own. This development will presumably result in a one-to-one relation between NIs and Op¬. The assumption that the licensing

---

33 There is still a question about rien (n-thing), which presumably has to move to a VP-external position, as suggested by the following contrast between rien (n-thing) and personne (n-person). (Rowlett 1998) uses # to indicate that the sentence is acceptable for some speakers, but only with a marked emphatic reading.

\[(\text{TP} \text{ Op}^-_{\text{NEG}} [\text{TP je n'ai} [\text{VP Op}^-_{\text{NEG}} [\text{VP recommandé personne_{\text{NEG}} à personne_{\text{NEG}} ]]]])\]

(i) a. Jean n'a vu \text{ personne/\#rien } \\
    Jean \text{ NEG has seen n-person/ n-thing } \\

b. Jean n'a \text{ personne/rien } \text{ vu} \\
    Jean \text{ NEG has n-person/n-thing seen} \\
    'Jean hasn't seen anyone/anything.' (Rowlett, 1998: 187)

I will not discuss the distribution of rien. However, that this peculiarity of rien is not due to its being an NI is not only suggested by the fact that it is not shared by personne but also by tout (‘everyone’) showing the same distribution:

(ii) a. Jean a vu \text{ #tous.} \\
    Jean \text{ has seen everything } \\

b. Jean a \text{ tout vu.} \\
    Jean \text{ has everything seen} \\
    'Jean has seen everything.' (Rowlett, 1998: 187)
negation becomes invisible, rather than NIs becoming inherently negative, will receive support from the analysis of DN-languages in Chapters 3 and 5.

A question that needs to be addressed in the revised system concerns other environments in which n-words are licensed in French, e.g. under sans ('without'), in comparatives, and in subjunctive complements of adverasive verbs, illustrated in (150).

(150) a. Anne est partie sans rien dire.
Anne is left without n-thing say
'Anne has left without saying anything.'

(de Swart and Sag, 2002: 412)

b. Il travaille plus qu' aucun d' entre eux.
he works more than n-DET of among them
'He works more than any of the others.'

c. Je doute que personne y réussisse.
I doubt that n-person it succeed.3SG.PRES.SUBJ
'I doubt that anybody will succeed in it.'

(Haspelmath, 1997: 261)

As I assume n-words in French to carry the feature [unegØ], which has to be licensed by [inegØ], the feature [inegØ] has to be present in all environments in which NIs can occur. As it is not possible to assume that all these environments involve an abstract negation, as discussed in subsection 2.3.2.3, certain other operators besides Op→ have to be assigned the feature [inegØ]. But (at least some of) these operators are realized by overt expressions, and assuming them to carry a feature reserved for abstract operators undermines the idea underlying the feature [inegØ]. But we have already seen in the discussion in 2.3.2.5 that n-words occurring in certain contexts different from sentential negation undermine the very idea of NIs having to be licensed by negation, because some of the licensing operators cannot be assumed to involve a semantic negation. The occurrence of NIs in these contexts is assumed to be a remnant of former stages of the language, when the expressions that are now NIs were still NPIs. This is reflected by the fact that the sentences in (150) have a feel about them of being formal or old-fashioned. The fact that the use of NIs has been retained in some NPI contexts, while they have become excluded from others, is reflected in a certain arbitrariness in the assignment of features to NI licensors.

In such non-strict negative DE-contexts another difference between the licensing of NIs and the negative marker ne can be observed. There are certain
expressions, e.g. *craindre* (‘fear’) which license *ne* in their complement but not NIs.

(151) a. Je crains qu’il _ne_ vienne.
    I fear that he _NEG_ come.SUBJ
    ‘I fear that he may come.’

    b. Je crains qu’il _n’a_ _vu_ personne.
    I fear that he _NEG_ has.SUBJ seen n-person
    ‘I fear that he may have seen nobody.’

    44 ‘I fear that he may have seen somebody.’

The NI in (151b) cannot be interpreted as non-negative, showing that it cannot be licensed by the matrix predicate (in contrast to example (150c)), and thus has to be licensed by Op→, which explains the interpretation of the sentence. The fact that the expressions licensing NIs are a subset of the expressions licensing *ne* can be accounted for by assuming that NIs and *ne* carry different uninterpretable negative features.54 With [*uneg*], which can be checked both by [*ineg*] and [*uneg*Ø], and [*uneg*Ø], which can only be checked by [*ineg*Ø], there are two different kinds of uninterpretable negative features. Assigning the verb *craindre* (‘fear’) the feature [*ineg*], it follows that it can license [*uneg*] on *ne*, but not [*uneg*Ø] on NIs.

2.4 Summary

Let me recapitulate the system of NC we have arrived at after the revisions that were made to the analysis of Zeijlstra (2004) in order to accommodate the French data. There are two kinds of uninterpretable negative features, [*uneg*] and [*uneg*Ø]. The feature [*uneg*] is, so to speak, an underspecified feature in that it does not distinguish between an overt and a covert licenser. [*uneg*] can be checked both by [*ineg*] on a phonoetically realized negation, and [*ineg*Ø] on an abstract negation. In the majority of NC-languages, NIs have the feature [*uneg*] and can be licensed both by a semantically negative marker or an

54 The same observation—that the set of contexts in which NIs can occur is a subset of the contexts in which the negative marker can occur—has also been made for Russian (Brown, 1999) and Polish (Blaszczyk, 2001).

(i) a. Boję się _żeby_ on _nie_ przyszedł.
    fear.ISPRES refl that+SUBJ he _NEG_ COMING.PAST-PART
    ‘I am afraid he will come.’

    b. Boję się _żeby_ *nikt/ktoś _nie_ przyszedł.
    fear.ISPRES refl that+SUBJ n-person/somebody _NEG_ COMING.PAST-PART
    ‘I am afraid that somebody will/might come.’

    (Blaszczyk, 2001: 144)
abstract negation. But in a language like French, which is on its way from an NC-language to a DN-language, NIs bear the feature [uneg0] and cannot be licensed by an overt expresser of sentential negation any longer.

There is a further difference between French and other NC-languages. In other languages, such as Italian and Spanish, sentences with multiple NIs only have an NC-reading and the DN-reading is not possible.

(152) **Nessuno ha detto niente.**
\[ \text{Italian} \]
\text{n-person has said n-thing}
\text{‘Nobody said anything.’} \quad \text{[NC]}
\text{*‘Nobody said nothing.’} \quad \text{[‘DN]}

The unavailability of DN-readings with multiple NIs can be explained by assuming that in these languages Multiple Agree of [NEG]-features is obligatory. This has the effect that NIs cannot by licensed by their ‘own’ Op− if there is another licenser around.

Multiple Agree of [NEG]-features can also be optional, as shown for French. The same also seems to be the case in Romanian. In Romanian, a strict NC-language, two NIs in the same clause can give rise to a DN-reading, provided the sentence occurs in a context where the DN-reading is prominent, for example in a denial context, as the following examples from Iordâchioaia (2006) illustrate.

(153) a. **Nimeni nu iubeste pe nimeni.**
\[ \text{Romanian} \]
\text{n-person NEG loves OBJ-M n-person}
\text{‘Nobody loves anybody.’} \quad \text{[NC]}
\text{‘Nobody loves nobody.’ (= ‘Everybody loves somebody.’)} \quad \text{[DN]}

b. **Nimeni nu-l place pe Ion.**
\text{n-person NEG likes OBJ-M John}

55 In strict NC-languages, where the negative marker is semantically non-negative and the only operator available to license NIs is Op−, it does not make a difference whether NIs are assigned [uneg] or [uneg0].

56 The assumption that Multiple Agree is obligatory should in fact be restricted to NIs in postverbal position when dealing with non-strict NC-languages. As discussed by Laka (1990) and Herburger (2001), cases such as (i), where a preverbal NI is in a position where it can be licensed by another operator, are (for many speakers) ambiguous between an NC- and a DN-reading.

(i) **Dudo que nadie lo sepa.**
\[ \text{Spanish} \]
\text{doubt.1sg that n-person it know}
\text{‘I doubt that anybody knows it.’} \quad \text{[NC]}
\text{‘I doubt that nobody knows it.’} \quad \text{[DN]}

These data also indicate that the economy condition proposed by Zeijlstra (2004) to govern the insertion of Op− is too strong, as it rules out the possibility of NIs being licensed by (an additional) Op− if they fall in the licensing domain of another operator.
'Nobody likes John.   [NC]
‘Nobody doesn’t like John’. (= ‘Everybody likes John.’)   [*DN]

One NI in combination with a negative marker only has the NC-reading, cf. (153b). This follows from the assumption that only NIs, but not a negative marker, can be licensed by a separate Op→, even if another licenser is present.

The distribution of neg-features that I assume for NIs and negative markers (NM) in different languages, as well as the availability of Multiple Agree for neg-features, are summarized in Table 2.1. With this feature assignment and the assumptions on Multiple Agree it is possible to account for the different forms of NC observed in different languages.

A system that allows for small differences in the licensing conditions of NIs rather than assuming an all-or-nothing licensing condition is needed to account for the subtle differences of NC in different languages. It will also prove useful in the next chapters, where we turn to the analysis of NIs in DN-languages. There I will argue that the same assumptions motivated by the data from French, namely that NIs can be selective for an abstract negation as licenser and that Multiple Agree is not obligatory, also account for the distribution and interpretation of NIs in DN-languages.

<table>
<thead>
<tr>
<th>Language</th>
<th>feature on NM</th>
<th>feature on NIs</th>
<th>Multiple Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italian,</td>
<td>[ineg]</td>
<td>[uneg]</td>
<td>obligatory</td>
</tr>
<tr>
<td>Spanish,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greek, Polish,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Russian,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ukrainian,</td>
<td>[uneg]</td>
<td>[uneg(∅)]</td>
<td>obligatory</td>
</tr>
<tr>
<td>Romanian</td>
<td>[uneg]</td>
<td>[uneg]</td>
<td>optional</td>
</tr>
<tr>
<td>French</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>nè: [uneg]</td>
<td>[uneg∅]</td>
<td>optional</td>
</tr>
<tr>
<td></td>
<td>pax: [ineg]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3

Split Scope of NIs in German

3.1 Data

In the previous chapter, the phenomenon of negative concord was discussed and an analysis presented. This chapter is concerned with another phenomenon NIs give rise to, this time in non-NC languages: NIs can split their scope, in the sense that another operator takes scope in between the negative and the indefinite meaning component. This was first observed by Bech (1955/57), and later discussed by Jacobs (1980, 1982, 1991). These authors also pointed out that the scope-splitting effect is a problem for an analysis of NIs in terms of negative quantifiers, which considers negation a lexical component of NIs. I focus on German, though scope-splitting also occurs in other DN-languages (see Rullmann, 1995a, for Dutch and Chapter 5 for other Germanic languages). The observations discussed here are not original. In fact, the contexts providing a challenge to the analysis of NIs as negative quantifiers were already identified by Jacobs (1982).

3.1.1 Modal and other restructuring verbs

When NIs in German occur embedded under a modal verb they give rise to an interpretation that cannot be derived under the assumption that NIs are negative quantifiers. Consider the following example:

(1) Bei der Prüfung muss kein Professor anwesend sein.
   at the exam must n-det professor present be
   a. 'It is not required that there be a professor present.'  \( \neg \) > must \( \exists \)
   b. 'There is no professor who is required to be present.'  \( \neg \exists \) > must
   c. '?'It is required that there be no professor present.'  \( \exists \text{must} \) > \( \neg \exists \)

The most prominent reading of this sentence is the reading paraphrased as (1a). As the paraphrase suggests, the indefinite meaning component of the NI is interpreted in the scope of the modal verb müssen ('must'), which in turn is in the scope of negation. But the corresponding truth conditions cannot be derived if the NI kein Professor ('no professor') is analysed as a negative
'Nobody likes John.  \([\text{NC}]\)

*'Nobody doesn’t like John.' (= 'Everybody likes John.') \([\text{*[DN]}]\)

One NI in combination with a negative marker only has the NC-reading, cf. (153b). This follows from the assumption that only NIs, but not a negative marker, can be licensed by a separate Op→, even if another licenser is present.

The distribution of neg-features that I assume for NIs and negative markers (NM) in different languages, as well as the availability of Multiple Agree for neg-features, are summarized in Table 2.1. With this feature assignment and the assumptions on Multiple Agree it is possible to account for the different forms of NC observed in different languages.

A system that allows for small differences in the licensing conditions of NIs rather than assuming an all-or-nothing licensing condition is needed to account for the subtle differences of NC in different languages. It will also prove useful in the next chapters, where we turn to the analysis of NIs in DN-languages. There I will argue that the same assumptions motivated by the data from French, namely that NIs can be selective for an abstract negation as licenser and that Multiple Agree is not obligatory, also account for the distribution and interpretation of NIs in DN-languages.

Table 2.1 Variation in the features on NM, NIs and Multiple Agree

<table>
<thead>
<tr>
<th>Language</th>
<th>feature on NM</th>
<th>feature on NIs</th>
<th>Multiple Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italian, Spanish</td>
<td>([\text{ineg}])</td>
<td>([\text{uneq}])</td>
<td>obligatory</td>
</tr>
<tr>
<td>Greek, Polish, Russian, Ukrainian</td>
<td>([\text{uneq}])</td>
<td>([\text{uneq}(\emptyset)])</td>
<td>obligatory</td>
</tr>
<tr>
<td>Romanian</td>
<td>([\text{uneq}])</td>
<td>([\text{uneq}])</td>
<td>optional</td>
</tr>
<tr>
<td>French</td>
<td>(ne: [\text{uneq}]) (pas: [\text{ineq}])</td>
<td>([\text{uneq}\emptyset])</td>
<td>optional</td>
</tr>
</tbody>
</table>
3

Split Scope of NIs in German

3.1 Data

In the previous chapter, the phenomenon of negative concord was discussed and an analysis presented. This chapter is concerned with another phenomenon: NIs give rise to, this time in non-NC languages: NIs can split their scope, in the sense that another operator takes scope in between the negative and the indefinite meaning component. This was first observed by Bech (1955/57), and later discussed by Jacobs (1980, 1982, 1991). These authors also pointed out that the scope-splitting effect is a problem for an analysis of NIs in terms of negative quantifiers, which considers negation a lexical component of NIs. I focus on German, though scope-splitting also occurs in other DN-languages (see Rullmann, 1995a, for Dutch and Chapter 5 for other Germanic languages). The observations discussed here are not original. In fact, the contexts providing a challenge to the analysis of NIs as negative quantifiers were already identified by Jacobs (1982).

3.1.1 Modal and other restructuring verbs

When NIs in German occur embedded under a modal verb they give rise to an interpretation that cannot be derived under the assumption that NIs are negative quantifiers. Consider the following example:

(1) Bei der Prüfung muss **kein Professor** anwesend sein.

at the exam must n-det professor present be

a. ‘It is not required that there be a professor present.’  \( \neg \rightarrow \) must \( \exists \)

b. ‘There is no professor who is required to be present.’  \( \neg \exists \rightarrow \) must

c. ‘??It is required that there be no professor present.’  \( \neg \exists \rightarrow \neg \exists \)

The most prominent reading of this sentence is the reading paraphrased as (1a). As the paraphrase suggests, the indefinite meaning component of the NI is interpreted in the scope of the modal verb müssen (‘must’), which in turn is in the scope of negation. But the corresponding truth conditions cannot be derived if the NI kein Professor (‘no professor’) is analysed as a negative
quantifier. In order to see this, some background on the meaning of the involved expressions is needed.

The meaning standardly assigned to the determiner *kein* (‘no’) is the one shown in (2), corresponding to a negative quantifier. ¹

\[(2) \quad [\text{kein}] = \lambda w. \lambda P_{(e, t)}. \lambda Q_{(e, t)}. \neg \exists x [ P(x) \& Q(x) ]\]

For the present purpose, a rather simple semantics of modal verbs will do, exemplified in (3) for *müssen* (‘must’) and *können* (‘can’).

\[(3) \quad \text{a. } [\text{müssen}] = \lambda w. \lambda p_{(s, t)}. \forall w' [ \text{Acc}_w(w') \rightarrow p(w') ]\]

\[(3) \quad \text{b. } [\text{können}] = \lambda w. \lambda f_{(s, t)}. \exists w' [ \text{Acc}_w(w') \& p(w') ]\]

Lexical entries of modal verbs involve an accessibility relation Acc, where \(\text{Acc}_w(w')\) means that world \(w'\) is accessible from world \(w\). I will generally gloss over the modal background involved in the interpretation of modal expressions (see Kratzer, 1981) by employing an accessibility relation that is left unspecified. In the case of example (1), let us assume that the worlds accessible from the actual world \(w\) are worlds in which everything stated in the examination regulations effective in \(w\) holds.

Under the assumption that the NI *kein Professor* (‘no professor’) is a negative quantifier, the readings paraphrased in (1c) and (1b) can be derived. If the negative quantifier takes scope below the modal verb (cf. (4a)), the *de dicto* reading (1c) is generated.

\[(4) \quad \text{a. } \text{muss} [\text{kein Professor anwesend sein}]\]

\[(4) \quad \text{b. } \lambda w. \forall w' [ \text{Acc}_w(w') \rightarrow \neg \exists x [x \text{ is a professor in } w' \& x \text{ is present at the exam in } w'] ]\]

LF (4a) expresses the truth conditions (4b), which state that in all worlds conforming to the examination regulations no professor is present at the exam. This is true if the examination regulations prohibit the presence of a professor at the exam. This reading is only marginally available for sentence (1). In general, root modals in German show a strong preference to be outsoped by negation (see among others Lerner and Sternefeld, 1984; Ehrich, 2001). This holds for negation contributed by an NI and the negative marker alike, as shown in (5).

\[(5) \quad \text{Du musst nicht warten.} \quad \text{you must NEG warten} \]

\[(5) \quad \text{a. 'You don't have to wait.'} \quad \neg \rightarrow \text{must} \]

\[(5) \quad \text{b. '??You mustn't wait.'} \quad ??\text{must} > \neg \]

¹ From now on, I use an intensional semantic system in the style of Heim and Kratzer (1998: chap. 12).
The narrow scope reading of the negation is more easily available if the negative marker is stressed (see Löbner, 1990), and if there is an intonational break before the negation.

In our example (1), the modal falls in the scope of negation only if the negative quantifier takes wide scope. Raising the negative quantifier above the modal yields LF (6a).

\[(6) \quad \text{a. kein Professor } \lambda_1 \ [ \text{muss [1 anwesend sein ]}]\]

\[\quad \text{b. } \lambda w. \neg \exists x [x \text{ is a professor in } w \text{ & } \forall w' [ \text{Acc}_w(w') \rightarrow x \text{ is present at the exam in } w']]\]

The truth conditions expressed by the LF with wide scope of the negative quantifier are given in (6b). According to these, there is no professor whose presence at the exam is prescribed by the examination regulations. This is the de re reading (1b).

However, the most intuitive reading of (1) is the one paraphrased in (1a), according to which it is not required that some professor or other be present at the exam. While this reading entails the de re reading (1b), it is not equivalent to it. The de re reading is true in situations in which reading (1a) is false. Imagine that the examination regulations do not specify that a particular professor, say the syntax professor, has to be present at the exam, but they do require that one of the three professors in the department is present. Then the sentence is true under the de re reading. But it is nevertheless false under reading (1a), as the examination regulations require that some professor or other be present at the exam.

If NIs are analysed as negative quantifiers, the only way the modal verb can get into the scope of negation is by QR-ing the negative quantifier across it. But then, the indefinite part too outscopes the modal and is hence interpreted de re. In the salient reading (1a), the modal verb takes scope in between the negative and the indefinite meaning component of the NI. The negation outscopes the modal, while at the same time the indefinite is interpreted in the scope of the modal. It looks like the NI has to be split up into two parts, a negation and an indefinite. This is why reading (1a) is called the split reading. It corresponds to a de dicto reading with wide scope of the negation. The corresponding truth conditions are given in (7), and the question is how to derive them.

\[(7) \quad \lambda w. \neg \forall w' [ \text{Acc}_w(w') \rightarrow \exists x [x \text{ is a professor in } w' \text{ & } x \text{ is present at the exam in } w']]\]

Here are some more examples exhibiting the split reading:

\[(8) \quad \text{Moslems dürfen kein Schweinefleisch essen. Muslims may n-det pork eat} \]
a. ‘Muslims are not allowed to eat pork.’ \(- > \text{may} > \exists\)
b. ?‘There is no pork that Muslims are allowed to eat.’ \(?\neg\exists > \text{may}\)
c. ??‘Muslims are allowed not to eat pork.’ \(??\text{may} > \neg\exists\)

The split reading (8a) constitutes the most natural reading of this sentence. The \textit{de re} reading (8b) does not rule out that Muslims would be allowed to eat pork if the right kind of pork were available. The narrow-scope reading (8c) is again marginal. It says that Muslims may refrain from eating pork, but not that eating pork is prohibited.

Similarly for example (9), which states that seeing blood is not compatible with my disposition.

(9) Ich kann \textbf{kein} Blut sehen.
I can \textit{n-det} blood see
‘I can’t stand the sight of blood.’

Let me convince you that the split reading is real and cannot be reduced to either the wide scope or the narrow scope reading of a negative quantifier. To begin with, note that the German modal verb \textit{brauchen} (‘need’) with an infinitival complement is an NPI, as indicated by the contrast in (10).\footnote{For the complement of \textit{brauchen} (‘need’), the infinitival marker \textit{zu} (‘to’) is gradually becoming obsolete, and often the complement is a bare infinitive. While both versions of auxiliary \textit{brauchen} (‘need’)—taking a plain or a \textit{zu} infinitive—are NPIs, the homophone transitive verb is not an NPI.}

(10) Du brauchst *(nicht) (zu) warten.
you need \textit{neg} to wait
‘You need (not) wait.’

If an NPI is embedded in the infinitival complement of \textit{brauchen} (‘need’), negation must have wide scope over the modal, in order for the NPI to be licensed. The narrow scope reading (11c), which is marginally available with \textit{müssen} (‘must’), is not possible.

(11) Bei diesem Wetter braucht man \textbf{keine} Jacke anziehen.
in this weather need one \textit{n-det} jacket wear
a. ‘In this weather one doesn’t need to wear a jacket.’ \(- > \text{need} > \exists\)
b. ?‘In this weather, there is no jacket which one must wear.’ \(?\neg\exists > \text{need}\)
c. ??‘In this weather, it is necessary that one doesn’t wear a jacket.’ \(??\text{need} > \neg\exists\)

Therefore, the NPI-verb \textit{brauchen} (‘need’) precludes the narrow-scope reading of a negative quantifier. There is, moreover, also a configuration in which the
wide-scope reading is excluded. Milsark (1977) observed postcopular subjects of *there*-insertion sentences in English to be confined to narrow scope with respect to intensional verbs.\(^3\) Consider the following contrast discussed in Heim (1987). While the subject in (12a) can take wide or narrow scope with respect to *must*, it can only have narrow scope in the variant (12b) with *there*-insertion.

(12)  a. Someone must be in John’s house. \(\text{must} > \exists, \exists > \text{must}\)
    b. There must be someone in John’s house. \(\text{must} > \exists, *\exists > \text{must}\)

This observation carries over to German. In sentences with expletive *es* and a modal verb only the *de dicto* reading is possible for an indefinite subject:

(13) Es muss ein Arzt anwesend sein.
    there must a physician present be
    a. ‘There has to be a physician present.’ \(\text{must} > \exists\)
    b. ‘There is a physician who has to be present.’ \(*\exists > \text{must}\)

By the same token, if the postcopular subject of a sentence with expletive *es* is an NI, it is confined to narrow scope. But in the most salient reading by far, negation nevertheless outscopes the modal, as in (14).

(14) Es muss kein Arzt anwesend sein.
    there must n-det physician present be
    a. ‘There doesn’t have to be a physician present.’ \(\neg > \text{must} > \exists\)
    b. ‘There is no physician who has to be present.’ \(*\neg > \text{must}\)
    c. ??‘It is required that there be no physician present.’ \(*\text{must} > \neg\exists\)

Now, if expletive *es*, excluding the wide scope reading of an indefinite, is combined with the modal verb *brauchen* (‘need’), which, being an NPI, is incompatible with the narrow-scope interpretation of a negative quantifier, only the split reading of an NI is possible:

(15) Es braucht kein Arzt anwesend sein.
    there need n-det physician present be

\(^3\) Heim (1987) tries to explain this effect by reducing it to the well-known definiteness restriction, also attributable to Milsark, according to which strong DPs, and in particular definites, are excluded as subjects of *there*-insertion sentences. She argues that as a consequence of the definiteness restriction, the subject position of *there*-insertion sentences cannot be filled by an individual variable, which is classified as strong. With the additional assumption that quantifiers undergo QR for scope, but not for type reasons, and can in principle be interpreted in situ, it follows that subjects of *there*-insertion sentences are restricted to narrow scope. In order to take wide scope with respect to an intensional verb, they would have to undergo QR, leaving behind a trace interpreted as an individual variable, which leads to a violation of the definiteness restriction.
a. ‘There needn’t be a physician present.’    \( \neg \rightarrow \text{need} \rightarrow \exists \)
b. ‘There is no physician who has to be present.’ \( \neg \exists \rightarrow \text{need} \)
c. ‘It is required that there be no physician present.’ \( \text{need} \rightarrow \neg \exists \)

These considerations show that the split reading is real and cannot be reduced to any of the readings that can be derived under the assumption of NIs being negative quantifiers.

For some modal verbs, the split reading does not seem to be available. In the case of NIs embedded under sollen (‘shall’) or wollen (‘want’), the reading with negation scoping below the modal is prominent, as illustrated by the examples in (16).

\[(16)\]
\[
a. \text{Man soll keine Fremden hereinlassen.} \\
\quad \text{one ought n-Det strangers in-let} \\
\quad \text{‘One shouldn’t let in strangers.’}
\]
\[
b. \text{Er will nichts essen.} \\
\quad \text{he wants n-thing eat} \\
\quad \text{‘He doesn’t want to eat anything.’}
\]

However, wollen (‘want’) and sollen (‘shall’) are known to be verbs that allow so-called neg-raising (see Horn, 1978). This means that, even if negation is syntactically higher than the respective predicate, the interpretation is one where negation seems to have narrow scope. This is witnessed in (17) for wollen (‘want’).

\[(17)\]
\[
\text{Ich will nicht, dass du gehst.} \\
\quad \text{I want neg that you go} \\
\quad \text{‘I don’t want you to go.’ (= ‘I want it to be the case that you don’t go.’)}
\]

The phenomenon of neg-raising is still not fully understood (see Horn, 2001, for an overview). What is important for our purpose is the fact that for neg-raising predicates, the resulting interpretation does not reflect the syntactic position of negation. Thus, the scope-splitting effect in (16) is masked by the fact that wollen (‘want’) and sollen (‘shall’) are neg-raising predicates. In general, the scope preferences between different kinds of modal verbs and negation is the same for the negative marker and the negation contributed by NIs (cf. Penka and von Stechow, 2001).

The first one to observe that NIs give rise to split readings when they occur in certain environments was Bech (1955/57, §80). In his investigation of restructuring verbs in German, he discusses the following example:

\[(18)\]
\[
\ldots \text{weil er mit niemandem darüber zu sprechen wagte} \\
\ldots \text{because he with n-person it-about to talk dared}
\]
a. ‘He dared not to talk to anyone about it.’ dare > \neg\exists

b. ‘He didn’t dare to talk to anyone about it.’ \neg > dare > \exists

Sentence (18) is ambiguous between the two readings paraphrased. In the first reading (18a), the NI is interpreted with narrow scope, and the scope of negation is refined to the embedded clause. In (18b), the negation refers to the matrix predicate wagen (‘dare’).

It is a well-known fact that the constellation of a negation and an infinitival complement of a restructuring verb in the middle field gives rise to an ambiguity. The negation can either refer to the embedded predicate or the matrix verb, as illustrated in (19).

(19) ... weil er nicht zu sprechen wagte
... because he NEG to talk dared

   a. ‘He dared not to talk.’ dare > \neg
   b. ‘He didn’t dare to talk.’ \neg > dare

Sentences with a negative element in the middle field can be disambiguated by extraposing the infinitival clause. When the negative marker remains in the middle field, only the reading where negation refers to the matrix verb is available, cf. (20a). When negation is extraposed with the infinitival clause, it invariably takes narrow scope, cf. (20b).

(20) a. ... weil er nicht wagte, zu sprechen
... because he NEG dared to talk

   (i) *‘He dared not to talk.’ *dare > \neg
   (ii) ‘He didn’t dare to talk.’ \neg > dare

b. ... weil er wagte, nicht zu sprechen
... because he dared NEG to talk

   (i) ‘He dared not to talk.’ dare > \neg
   (ii) *‘He didn’t dare to talk.’ *\neg > dare

If the infinitival clause is extraposed, the scope-splitting effect of NIs disappears too. Then only the narrow scope reading of an NI is available, as shown in (21).

(21) ... weil er wagte, mit niemandem darüber zu sprechen
... because he dared with n-person it-about to talk

   a. ‘He dared not to talk to anyone about it.’ dare > \neg\exists
   b. *‘He didn’t dare to talk to anyone about it.’ *\neg > dare > \exists

In the case of niemand (‘nobody’) and nichts (‘nothing’) the difference between the split and the de re reading is more subtle than with the determiner
kein ('no'). The difference between, e.g. 'he doesn’t dare to talk to anyone’ and ‘there is no one he dares to talk to’, is hard to pinpoint. Because the split reading is clearer with kein, I focus on cases involving the negative indefinite determiner kein ('no').

Another example, involving an NI embedded under the restructuring verb versuchen ('try'), is given in (22).

(22) Frank hat kein Auto zu stehlen versucht.
Frank has n-DET car to steal tried
a. ‘Frank tried not to steal a car.’
   try > ¬∃
b. ‘Frank didn’t try to steal a car.’
   ¬ > try > ∃

According to the narrow-scope reading (22a), it requires effort on Frank’s behalf not to steal a car. This reading is plausible in a scenario where Frank is a notorious car thief who tries to refrain from stealing cars in order to comply with conditions imposed during probation. The split reading (22b), on the other hand, says that there was no attempt by Frank to steal a car.

3.1.2 Transitive intensional verbs

Split readings also arise when NIs serve as the object of a transitive intensional verb like seek or transitive need. Consider the following German sentence, the negation of the classical example Peter seeks a unicorn.

(23) Peter sucht kein Einhorn.
Peter seeks n-DET unicorn
a. ‘Peter isn’t trying to find a unicorn.’
   ¬ > seek > ∃
b. ‘There is no unicorn Peter is trying to find.’
   ¬∃ > seek

Just as the positive sentence, (23) is ambiguous between a de re and de dicto reading. But even in the de dicto reading, cf. (23a), the negative meaning component still refers to the verb suchen ('seek’). For the de re reading (23b) to be true, it is sufficient that unicorns do not exist in the actual world independently of Peter’s activities. The truth of the split reading (23a), on the other hand, depends solely on Peter’s activities, i.e. he may not be engaged in unicorn-seeking. Whether unicorns exist in the actual world does not bear on the truth of (23a).

Likewise for example (24).

(24) Der Verletzte braucht keinen Arzt.
The injured need n-DET doctor
a. 'The injured doesn’t need a doctor.' \( \neg > \text{need} > \exists \)
b. 'There is no doctor the injured needs.' \( \neg \exists > \text{need} \)

The most prominent reading of this sentence is the split reading (24a), which says that the injured does not need some doctor or other. Again, this is different from the \textit{de re} reading (24b), which is also a possible but less salient reading of the sentence.

Under the assumption that NIs are negative quantifiers, again, the only way for the negation to outscope the intensional verb is to give the whole negative quantifier wide scope over the verb. This corresponds to the \textit{de re} reading. Which truth conditions result if a negative quantifier is interpreted with narrow scope depends on which analysis of transitive intensional verbs is adopted. In the approach of Montague (1973), these verbs denote relations between individuals and quantifier intensions, i.e. they are of type \( \langle s, \langle\langle e, t\rangle, t\rangle\rangle, \langle e, t\rangle \rangle \). Following Quine (1960), their lexical meaning is assumed to involve a propositional attitude and a relation between individuals. For \textit{suchen} ('seek'), this looks like (25), where the accessibility relation is one of conation, assigning an individual \( x \) and a world \( w \) the set of worlds in which \( x \)’s desires in \( w \) are met.

\[
(25) \quad \left[ \text{suchen} \right] \\
= \lambda w. \lambda Q_{\langle s, \langle\langle e, t\rangle, t\rangle\rangle, \langle e, t\rangle \rangle} \langle\langle x, w \rangle \rangle \rightarrow Q(w')(\lambda y. x \text{ finds } y \text{ in } w')
\]

With this, the truth conditions (26b) are derived for the LF (26a), where the negative quantifier takes narrow scope.4

\[
(26) \quad \begin{align*}
\text{a. } & \text{Peter, } \left[ \text{kein Einhorn } \right] \langle\langle e, t\rangle, t\rangle \text{ sucht}_{\langle s, \langle\langle e, t\rangle, t\rangle\rangle, \langle e, t\rangle \rangle} \\
\text{b. } & \lambda w. \forall w' [\text{Acc}_{\text{Peter, } w} (w') \rightarrow \\
& \quad \neg \exists x [x \text{ is a unicorn in } w' \text{ & Peter finds } x \text{ in } w']]
\end{align*}
\]

These truth conditions state that in all worlds where Peter achieves what he wants, he does not find a unicorn. In other words, Peter is trying to avoid finding a unicorn. This is not a possible reading of sentence (23).

Zimmermann (1993) argues that transitive intensional verbs take properties (in intenso) as arguments rather than quantifiers. Under this assumption, the meaning assigned to \textit{suchen} ('seek') is (27).

\[
(27) \quad \left[ \text{suchen} \right] \\
= \lambda w. \lambda P_{\langle s, \langle e, t\rangle\rangle} \langle\langle x, w \rangle \rangle \rightarrow \exists y [P(w')(y) \& x \text{ finds } y \text{ in } w']
\]

4 Assuming that head movement is reconstructed at LF, the effect of V2-movement is undone. The verb is assumed to be in its base position at LF, where it also occurs in embedded word order, cf. (i).

(i) … weil Peter kein Einhorn sucht
Now seek cannot be applied to a negative quantifier as it takes a property rather than a quantifier. There is however a generalized way to derive a property (type ⟨e, t⟩) from a quantifier (type ⟨⟨e, t⟩, t⟩). For this purpose, Partee (1987) introduces the type-shifting operator BE.

\[(28) \quad \llbracket \text{BE} \rrbracket = \lambda w. \lambda Q_{⟨⟨e, t⟩, t⟩}. \lambda x. Q(\lambda y. y = x)\]

What BE does is finding all singleton sets in the quantifier denotation and collecting their elements into a set. As a consequence, applying BE has a non-empty result only for quantifiers containing singleton sets. These are weak quantifiers in the sense of Milsark (1977) and definite DPs in the singular. Now, what happens if BE is applied to a kein-DP, e.g. kein Einhorn (‘no unicorn’)? The denotation of the negative quantifier surely contains singleton sets, namely all individuals that are not unicorns. Hence, \[\llbracket \text{BE} \text{(kein Einhorn)} \rrbracket\]

denotes the property of not being a unicorn.

\[(29) \quad \llbracket \text{BE(kein Einhorn)} \rrbracket = \lambda w. \lambda x. \neg \exists y [y \text{ is a unicorn in } w \land x = y] = \lambda w. \lambda x. x \text{ is not a unicorn in } w\]

So let us assume that first BE is applied to kein Einhorn to derive a property before it serves as the argument of suchen, as shown in (30a). We then get the truth conditions in (30b).

\[(30) \quad \begin{align*}
\text{a. Peter BE(kein Einhorn) sucht} \\
\text{b. } \lambda w. \forall w' [\text{Acc}_{\text{Peter}, w'}(w') \rightarrow \exists x [x \text{ is not a unicorn in } w' \land \text{Peter finds } x \text{ in } w']] 
\end{align*}\]

What (30b) says is that in all worlds where Peter achieves what he wants, he finds something which is not a unicorn. Accordingly, finding for instance a horse is sufficient to fulfil his desires. Again, sentence (23) cannot mean this.

Zimmermann (1993) is aware of this consequence of his analysis. He does not in fact, assume that quantifiers are type-shifted by BE to derive properties. Rather, he assumes that indefinites as such can denote properties. He furthermore argues that, when an N1 serves as the object of a transitive intensional verb, the negation it contributes takes wide scope over the verb and the argument itself is just an indefinite. These assumptions make it possible to derive the split reading, according to which Peter does not seek some unicorn or other. Again, the N1 has to be split up into a negation taking scope above seek, and an indefinite interpreted in the scope of seek.

3.1.3 Predicative uses

There are other contexts where indefinites that have been argued to denote properties rather than quantifiers. One such context is predicative nominals.
Again, the fact that NIs can be used as predicative nominals, as illustrated in (31), is a problem under the assumption that NIs are negative quantifiers.

(31) Peter ist **kein** Arzt.
    Peter is **n-det** doctor
    ‘Peter isn’t a doctor.’

In German, using the copula verb *sein* (‘be’) together with a *kein*-DP is the normal way to express that an individual does not have a certain property.

We have already seen in the previous section how the type mismatch can be resolved for a quantifier occurring in a position in which a property is needed: by applying Partee’s (1987) type-shifting operator BE. Recall that BE applied to a negative quantifier like *kein* Arzt (‘no doctor’) gives the property of not being a doctor, i.e. the set of individuals not in the extension of doctor.

(32) \[
    \llbracket \text{BE (kein Arzt)} \rrbracket = \lambda w. \lambda x. \neg \exists y \{ y \text{ is a doctor in } w \ \& \ x = y \} \\
    = \lambda w. \lambda x. \text{x is not a doctor in } w
\]

The copula verb *sein* (‘be’) can be regarded as semantically vacuous. With this, the truth conditions (33) are derived for sentence (31), which represent the meaning of (31) correctly.

(33) \[
    \llbracket \text{Peter BE(kein Arzt)} \rrbracket = \lambda w. \text{Peter is not a doctor in } w
\]

However, we only get the correct truth conditions because the copula verb *sein* (‘be’) is semantically vacuous. This can be seen when taking into consideration other copula verbs that have more semantic content, like *become* and *remain*. These express that an individual acquires or loses a certain property. To represent this, we also need to take into account the temporal dimension, such that property \( P \) holds of individual \( x \) in world \( w \) at time \( t \). The meaning of *werden* (‘become’) and *bleiben* (‘remain’) that von Stechow (2001) gives is shown in (34), where \( P \) is a temporal property of type \( (s, \{i, (e, t)\}) \).

(34) a. \[
    \llbracket \text{werden} \rrbracket = \\
    \lambda w. \lambda t. \lambda P_{\{s, \{i, (e, t)\}\}}. \lambda x. \text{BECOME}(w)(t)(\lambda w'. \lambda t'. P(w')(t')(x))
\]

b. \[
    \llbracket \text{bleiben} \rrbracket = \\
    \lambda w. \lambda t. \lambda P_{\{s, \{i, (e, t)\}\}}. \lambda x. \neg \text{BECOME}(w)(t)(\lambda w'. \lambda t'. \neg P(w')(t')(x))
\]

These meaning rules employ the \text{BECOME} operator of Dowty (1979), defined in (35).\(^5\)

(35) \[
    \llbracket \text{BECOME} \rrbracket = \lambda w. \lambda t. \lambda P_{\{s, \{i, (e, t)\}\}}. \neg p(w)(\text{BEGIN}(t)) \ \& \ p(w)(\text{END}(t))
\]

\(^5\) The first requirement, that \( p \) be false at \( \text{BEGIN}(t) \), should presumably be treated as a presupposition. I disregard this here.
BE\(^{(t)}\) is the interval containing only the beginning point of the time interval \(t\), and END\(^{(t)}\) the interval containing only the end point of \(t\).

Let us see what meaning is derived for the following examples, where the predicative nominal is an NI:

(36) a. Jim wurde kein Rockstar.
Jim became n-DET rock-star
'Jim didn't become a rock star.'

b. Bill blieb kein armer Mann.
Bill remained n-DET poor man
'Bill didn't remain a poor man.'

First, BE is applied to turn the negative quantifier into a property, whose intension then serves as the argument of werden ('become'), as shown in (37a). The resulting truth conditions are (37b) (which include the contribution of past tense as the requirement that the BECOME-interval precede the utterance time \(t_\text{u}\)).

(37) a. [[PAST | Jim BE(kein Rockstar) werden ]]

b. \(\lambda w. \exists t [ t < t_\text{u} \& \text{Jim is a rock star in } w \text{ at } BE\(^{(t)}\) \& \text{Jim is not a rock star in } w \text{ at END}\(^{(t)}\) ]\)

Example (37b) says that there is a time interval preceding the utterance time at whose beginning Jim is a rock star, but at whose end he is not a rock star any longer. In other words, Jim's status changed from being a rock star to not being a rock star. This is what one would usually express as 'Jim did not remain a rock star, but it is not what sentence (36a) means. The correct truth conditions for (36a) can be paraphrased as 'it is not the case that there is a time interval at whose beginning Jim is not a rock star, and at whose end he is a rock star'.

The same happens in the case of bleiben ('remain'). If we first apply Partee's type-shifting operator BE to a negative quantifier to derive a property, we get the wrong meaning. This is demonstrated in (38) for sentence (36b).

(38) a. PAST [ Bill BE(kein armer Mann) bleiben ]

b. \(\lambda w. \exists t [ t < t_\text{u} \& \neg \cdot \text{Bill is not a poor man in } w \text{ at } BE\(^{(t)}\) \& \text{Bill is a poor man in } w \text{ at END}\(^{(t)}\) ]\)

What (38b) says is that Bill did not acquire the property of being a poor man, or in other words that he did not become a poor man. Thus, the truth conditions for werden ('become') and bleiben ('remain') are exactly reversed.
if a negative quantifier is assumed to be embedded (and type-shifted with BE to a property). This shows that the negation ‘contained’ in the NI takes scope over the verb, and the embedded predicate is semantically a positive property. Again, the NI has to be split into a negation and an indefinite in order to derive the correct truth conditions.

Another context put forward to involve predicative uses of DPs is the existential construction (among others Milsark, 1974; McNally, 1998). NIs also occur in this environment, as illustrated in (39).

(39) a. Es gibt keine Gespenster.
    there exist n-det ghosts
    ‘There are no ghosts.’

b. Diesen Winter gab es keinen Schnee.
    this winter existed there n-det snow
    ‘This winter, there was no snow.’

While such examples are sometimes used to argue against the assumption that these verbs select for properties rather than quantifiers, the fact that NIs do not behave like negative quantifiers in other contexts too suggests a different conclusion: negation takes scope above the verb and the DP in predicative position corresponds semantically to positive indefinite.

3.1.4 Topic–focus accent

So far the cases with split readings of NIs all involved verbs. But the operator taking scope in between the negative and the indefinite meaning component of NIs can also be a nominal or adverbial quantifier, in particular a universal quantifier. Such cases require a special syntactic and intonational configuration, a so-called topic–focus accent (see Büring, 1997). If a universally quantified expression in the prefield carries a rising pitch accent, indicated by /, and an NI in the middle field receives a falling tone, indicated by \, the split reading arises.

6 The reason why the split reading arises only with universal quantifiers will become obvious in the analysis of these examples in section 3.2.2.

7 Not all speakers get the split reading in this configuration. For those who do not, examples with this intonation pattern just sound odd. As already observed by Jacobs (1980: 126) such uses of NIs are particularly natural for speakers from the south of Germany, especially from the southeast.

The split reading in this configuration arises also with nichts (‘nothing’). Jacobs (1982: 398) gives the following example:

(i) /BEiden Ärzten hat sie NICHTS/ vermach.
    both doctors has sie n-thing bequeathed
    ‘It is not the case that to both doctors she bequeathed something.’  \(\nrightarrow \forall \exists\)
Here are two examples, involving a nominal and an adverbial universal quantifier in the prefied:

(40) a. /ALLE Ärzte haben KEIN\ Auto. (Jacobs, 1980: 126)
    all doctors have n-det car
    ‘It is not the case that all doctors have a car.’  \( \neg \rightarrow \forall \rightarrow \exists \)

b. /IMMEN hat Peter KEINE\ Krawatte an.
    always has Peter n-det tie on
    ‘It is not the case that Peter always wears a tie.’  \( \neg \rightarrow \forall \rightarrow \exists \)

The split reading is the only reading of these utterances (taking the intonation pattern into consideration), analogous to examples where the expression in the middle field bearing the falling accent is the negative marker:

(41) /ALLE Politiker sind NICHT\ korrupt.
    all politicians are neg corrupt
    ‘It is not the case that all politicians are corrupt.’  \( \neg \rightarrow \forall \)

In the cases of topic-focus accent involving NIs, negation is assumed to be part of the lexical meaning of NIs. Nevertheless, another quantifier can take scope below negation, and at the same time outscope the indefinite part of the NI.

3.1.5 Idiomatic expressions

In German, idiomatic expressions involving an indefinite DP are negated by realizing the indefinite determiner as kein. This is illustrated in (42) for the idioms eine Schraube locker haben (literally: ‘have a screw loose’), meaning to be mentally disturbed, and jemandem einen Floh ins Ohr setzen (literally: ‘put a flea into someone’s ear’), meaning roughly to put fancy ideas into someone’s head.

(42) a. Peter hat keine Schraube locker.
    Peter has n-det screw loose
    ‘Peter doesn’t have a screw loose.’

There is, however, a contrast in the availability of the split reading (and, consequently, in the acceptability of sentences with this intonation pattern) between kein and pronominal NIs. There are speakers who accept examples with kein but not with nichts (‘nothing’), and for others the split reading with nichts is harder to get than with kein. With niemand (‘nobody’), the split reading seems to be completely impossible (and such sentences are judged to be very odd).

(ii) *?ALLE Gäste haben NIEmanden\ gekannt.
    all guests.nom have-3pl n-person.acc known
    ‘It is not the case that all guests knew someone.’  \( \neg \rightarrow \forall \rightarrow \exists \)

I do not have an explanation for this contrast between kein and pronominal NIs.
b. Setz ihm bitte keine Floh ins Ohr.
   put him please n-det flea into-the ear
   ‘Please don’t put fancy ideas into his head.’

Under the assumption that idioms are listed with their meaning in the lexicon (cf. e.g. Jackendoff, 1975), they have to be interpreted as a whole. Idioms cannot be split up into their components and be interpreted compositionally. Thus, an indefinite being part of an idiom cannot be interpreted in the usual way, and NIs contained in idioms cannot be translated as negative quantifiers. As the paraphrases show, the negation introduced by the NIs in (42) refers to the idiom as a whole. In order to derive the meaning of the sentences in (42), the whole idiomatic VP has to interpreted with a positive indefinite, and only then negation is applied.

There is another interesting fact about NIs occurring in certain idiomatic expressions. A number of VP-idioms are minimizer NPIs, like einen Finger rühren (‘raise a finger’) and ein Auge zutun (‘sleep a wink’). When such NPIs involve an indefinite, they can be licensed by realizing the indefinite determiner as kein, as in (43).

(43) a. Er hat keinen Finger gerührt.
   he has n-det finger moved
   ‘He didn’t raise a finger’

   b. Letzte Nacht habe ich kein Auge zu getan.
   last night have I n-det eye closed did
   ‘Last night I didn’t sleep a wink.’

It thus looks like the licenser of the NPI is itself part of the NPI.

If kein is contained in an idiomatic expression, it also yields the split reading when the idiom is embedded under a modal verb. Such examples are given in (44).

(44) a. Dieses Mal konnte er kein Haar in der Suppe
      this time could he n-det hair in the soup
      finden.
      find
      ‘This time, he couldn’t find a fly in the ointment.’

   b. Der Richter darf kein Auge zu drücken.
   the judge may n-det eye closed-press
   ‘The judge is not allowed to turn a blind eye.’

In these cases, it is not possible to assume that the modal gets in the scope of negation by raising a negative quantifier across it because it is not possible to separate the indefinite from the rest of the idiom.
3.1.6 Further data

The fact that German is particularly liberal in the use of the determiner *kein*, as already encountered in the case of idioms, manifests itself also in another form: *kein* can combine with numerals and measure phrases. This is illustrated in the following examples.

(a) Maria hat keine drei Kinder.
    Maria has three children.
    Maria doesn’t have three children.

(b) Peter ist keine zwei Meter groß.
    Peter is two meters tall
    ‘Peter isn’t two metres tall.’

(c) Anne Frank wurde keine 16 Jahre alt.
    Anne Frank became 16 years old
    ‘Anne Frank died before she was 16 years old.’

(d) Du brauchst keine fünf Minuten warten.
    you need five minutes wait
    ‘You don’t need to wait five minutes.’

In these examples, *kein* just contributes negation. As example (45d) illustrates, *kein* combining with a measure phrase can also induce a split reading, where negation refers to the modal.

3.1.7 Conclusion from the data

What conclusions can be drawn from the data discussed in this section? The immediate outcome is that NIs in German cannot always be analysed as negative quantifiers, as this analysis cannot generate split readings arising in certain environments. It could be assumed that cases where NIs lead to a split reading are exceptional and require a special analysis (two proposals will be discussed in sections 3.3.2 and 3.3.3). But, in general, the analysis as negative quantifier could be maintained, as it derives correct truth conditions in the majority of cases.

However, considering the data, I believe a stronger conclusion is warranted. The cases where the negative quantifier analysis is sufficient are cases in which the result is equivalent to the combination of sentential negation and an indefinite. This is illustrated by the following English example, where the truth

---

8 To be more precise, NIs in German cannot always be analysed as first-order negative quantifiers over individuals. There are alternative proposals maintaining that NIs in German are negative quantifiers, but they have to give up either the assumption that NIs are first-order quantifiers or that the domain of quantification for NIs consists of individuals (see sections 3.3.2 and 3.3.3).
conditions of both sentences (46a,b) are the same, namely (46c), although one involves a negative marker and an indefinite and the other a negative quantifier (assuming for the time being that NIs in English are negative quantifiers).

(46)  a. John does not have a car.
    b. John has no car.
    c. \( \lambda w. \neg \exists x [ x \text{ is a car in } w \& \text{John has } x \text{ in } w ] \)

But where the negative quantifier analysis is not equivalent to sentential negation plus an indefinite, the negative quantifier analysis goes wrong. Cases of NIs in predicative positions are particularly instructive because they show that the negation associated with the NI always refers to the verb. Put differently, the fact that NIs are not negative quantifiers is masked by the fact that, in most cases, the same truth conditions are derived under the negative quantifier analysis as under the assumption that NIs are ‘split’ into sentential negation and an indefinite. In cases where the analyses make different predictions, it turns out that the negative quantifier analysis is wrong.

The analysis I propose relates the scope-splitting phenomenon NIs exhibit in German to the phenomenon of negative concord, which NIs in other languages give rise to. I take both phenomena to be symptoms of the same underlying fact: NIs are not negative quantifiers. Rather, NIs cross-linguistically are semantically non-negative indefinites associated with an independent expresser of sentential negation. Scope splitting in German shows that the negation is not always interpreted where it is morpho-syntactically marked. NC indicates that NIs are not inherently negative.

Even in German, there is evidence that NIs are not inherently negative, coming from elliptical contexts in which an NI is subject to deletion under ellipsis. Consider the following example:

(47) ... weil Peter kein Auto hat und Maria auch nicht 
    ...because Peter n-det car has and Maria also neg 
    'Peter doesn't have a car and neither does Maria.'

According to standard assumptions, ellipsis sites contain unpronounced material identical to material in the antecedent. In (47), the VP is elided, as shown in (48).

(48) \[ [ [ \text{Peter [VP kein Auto hat]} ] ] \text{ und [ Maria auch nicht [VP kein-Auto hat-]]] \]

(49) auch nicht [ Maria kein Auto hat ]

As elided material has to be present at LF, the LF-representation of the second conjunct of (47) is (49). But if kein Auto (‘no car’) is assumed to be inherently
negative, there are two semantically negative elements, and the two negations cancel each other. The truth conditions derived from this LF would therefore be positive, i.e. saying Maria owns a car. But this is not what sentence (47) means. Rather, it asserts that neither Peter nor Maria have a car. This shows that one ends up with too many negations if it is assumed that NIs in German are semantically negative, similarly to what happens in NC-languages. If, on the other hand, it is assumed that NIs in German are semantically non-negative indefinites, the correct meaning is generated from the LF (49).

I conclude that even in DN-languages like German, NIs are not negative quantifiers. As a consequence, there are no expressions in natural language whose lexical meaning corresponds to negated existential quantification. Rather, the analysis of NIs in NC-languages should be extended to DN-languages: NIs are semantically non-negative and have to be licensed by sentential negation. Such an analysis of NIs in German is spelled out in the next section.

3.2 Analysis of negative indefinites in German

3.2.1 Scope splitting with respect to verbs

The data discussed in the previous section illustrate that NIs in German cannot (always) be analysed as negative quantifiers, since other semantic operators can take scope in between the negative and the indefinite meaning component of NIs. In order to explain the scope-splitting phenomenon of NIs in German, I extend the analysis of NIs in NC-languages to DN-languages like German. Accordingly, I propose that NIs cross-linguistically are semantically non-negative indefinites that have to be licensed by a semantic negation. As argued when dealing with NC in French in subsection 2.3.3, languages vary regarding the precise licensing conditions for NIs. From the system designed to account for the behaviour of NIs in French, it is only a small step to include DN-languages. Recall that NIs in French can exclusively be licensed by an abstract negation, but not by a negative marker. The same holds for German: when NIs co-occur with the negative marker *nicht*, only the DN-reading is possible, as shown in (50).

(50) Ich habe **nicht nichts** gegessen.
    I have **NEG n-thing** eaten

    a. ‘I didn’t eat nothing’ (= ‘I ate something.’)
    b. ‘I didn’t eat anything.’

Therefore, in the revised system of subsection 2.3.3, NIs in German are assigned the uninterpretable feature [\texttt{\textit{NEG0}}], which can only be checked by
the interpretable feature [\text{\text{NEG}}\emptyset] on the abstract negation operator Op→. As in French, (50) has a DN-reading because, in the underlying structure, there are two semantically negative elements. This is shown in (51). (To abstract away from V2-movement in main clauses in German, I use examples in the form of sub-clauses.)

(51) a. ...ich \text{\text{nicht nichts}} gegessen habe
    ...I \text{\text{NEG n-thing eaten}} have

b. [IP ich [VP nicht[\text{\text{NEG}}]] [VP Op→[\text{\text{NEG}}]] [VP nichts[\text{\text{NEG}}]]
   \hspace{1cm}
   \text{gegessen habe}]])

As is evident in (51b), I assume the negative marker in German to be an adverb adjoining to a verbal projection, as argued by Jacobs (1982) and Zeijlstra (2004). The abstract negation Op→ behaves syntactically in the same way as the overt negative marker.

When two (or more) NIs co-occur in the same clause, each contributes its own instance of negation to the semantics, as in (52).

(52) ...dass \text{\text{kein Gast kein Geschenk}} mitbringt
    ...that \text{\text{n-DET guest n-DET present}} brings

a. ‘no guest brings no present’ (= ‘every guest brings a present’)  
b. ‘no guest brings a present’

Again paralleling the DN-reading of multiple NIs in French, each NI can be assumed to be licensed by its ‘own’ Op→.

(53) [IP' Op→[\text{\text{NEG}}]] [IP kein[\text{\text{NEG}}] Gast
   \hspace{1cm}
   \underline{VP' Op→[\text{\text{NEG}}]} [VP kein[\text{\text{NEG}}] Geschenk mitbringt ]]]

But unlike French, (53) is the only possible structure for (52). In German, two (or more) NIs cannot be licensed by the same Op→. This means that,

---

9 Following Vikner (2001), I assume that in German, the finite verb remains in its base-generated position V0. As German is a head-final language, it is not possible to detect from the word order whether the verb is in V0 or IP. If it is assumed, following standard practice, that the finite verb moves to IP, this does not affect the proposed analysis of NIs. As head-movement is undone at LF, different positions of the verb in the surface syntax do not affect scope relations, which are determined at LF. I also assume with Vikner (2001) that the subject moves to Spec,IP. This is not important, either, and the analysis of NIs is also compatible with the assumption that the category IP is not instantiated in German at all (see Sternefeld, 2006). In this case DPs, in particular subjects, potentially intervening in the licensing of NIs would be assumed to scramble out of the way.

10 I assume that Op→, like the negative marker \text{nicht}, can adjoin to IP, and in fact any verbal projection; see subsection 4.2.3.
in contrast to French, Multiple Agree of [NEG]-features is not optional but simply not available at all.

Instead of assuming that NIs in DN-languages are inherently negative, while NIs in NC-languages are not, their diverging behaviour can be explained under a unified analysis of NIs. The difference is in terms of how closely an NI associates with the licensing negation, i.e. whether there is a one-to-one correspondence between semantic negations and NIs.

In German, the relation between an NI and its licensing Op− can be assumed to be even stronger: NIs are adjacent to the abstract negation they are licensed by (cf. Jacobs, 1982). As German is a scrambling-language, potentially intervening maximal projections (DPs and adverbs) can scramble out of the way. It is a known fact about German that definite DPs have to scramble across sentential negation, as illustrated in (54).11

(54) Ich habe { Peter / ihn } nicht getroffen.
I have Peter him NEG met
‘I didn’t meet him/Peter.’

If a definite description occurs under a negative marker, the negation can only be understood as contrasting negation, which requires a continuation with sondern (‘but’):

(55) Ich habe nicht { Peter / ihn } getroffen *, sondern
I have NEG Peter him met but
seinem Bruder).
his brother
‘I didn’t meet Peter/him (, but his brother).’

As contrasting negation has several characteristics which set it apart from sentential negation (see Jacobs, 1982), I disregard it in the following discussion.12

---

11 This claim should be restricted to definite DPs serving as discourse referents, as pointed out by an anonymous reviewer. Definite expressions that do not have this discourse function can occur under negation, as in the following example.

(i) Es hat nicht die richtige Farbe.
It has not the right colour
‘It doesn’t have the right colour.’

12 The negation associated with kein-phrases can also be contrasting, as in the following example:

(i) Frank fährt keinen Mercedes, sondern einen BMW.
Frank drives n-DET Mercedes but a BMW
‘Frank doesn’t drive a Mercedes but rather a BMW.’

A further type of negation NIs can associate with is metalinguistic negation (see Horn, 2001), illustrated in (ii), in which the negation is used to reject a previous utterance on grounds of its presupposition (that there is a king of France).
Indefinites that outscope negation can also be assumed to scramble across the negative marker or Op¬, as in (56).\(^{13}\)

(56) a. ...weil du einen Hund \textit{nicht} streicheln darfst.
   ...because you.NOM a.ACC dog.ACC NEG pet may
   'There is a dog which you may not pet.'

b. ...weil du einem Hund \textit{keinen} Knochen
   ...because you.NOM a.DAT dog.DAT n-Det.ACC bone.ACC
gaben darfst.
give may
   'There is a dog to which you may not give a bone.'

We thus arrive at the following semantics and licensing conditions for NIs in German:\(^{14}\)

(57) **Semantics of NIs in German:**
   a. \( [\textit{niemand}] = \lambda w.\lambda P.\exists x [ x \text{ is a person in } w \& P(x) ] \)
   b. \( [\textit{kein}] = \lambda w.\lambda Q.\lambda P.\exists x [ Q(x) \& P(x) ] \)

(58) **Licensing condition for NIs in German:**
   NIs have to be adjacent to an abstract negation Op¬ in the surface syntax.

With these assumptions on German NIs in place, let us see how split readings are accounted for. To start with, consider example (59), where an NI occurs in the infinitival complement of a modal verb.

(59) ...weil du \textit{keine} Jacke anziehen brauchst
   ...because you NEG jacket wear need
   'You don’t need to wear a jacket.'

The lowest position the abstract negation licensing the NI can occupy is a VP-adjoined position. As the modal verb \textit{brauchen} ('need') is an NPI, it has to be interpreted in the scope of negation. Thus, Op¬ is adjoined to the higher VP, as shown in (60). As the subject has moved out of the way, and verbs in

(iii) \textit{Der König von Frankreich} has \textit{keine} Glatze.
    The king of France has n-Det bald-head
    'The king of France isn't bald.'

\(^{13}\) I disregard the generic reading indefinites in German can have when they are VP-external (see Diesing, 1992).

\(^{14}\) (57) is only a first approximation to the semantics of NIs in German. As will become clear below, I do not assume that indefinites denote existential quantifiers. What is crucial here is simply that negation is not part of the lexical meaning of NIs.
German, a VO language, follow their complement, the NI in object position is licensed by virtue of being adjacent to Op⁻. This is shown in (60).

(60)

\[ \text{IP} \]
\[ \text{du} \]
\[ \text{I'} \]
\[ \text{VP}_2 \]
\[ \text{Op}⁻ \]
\[ [\text{nEGG}] \]
\[ \text{VP}_2 \]
\[ \text{VP}_1 \]
\[ \text{t}_i \]
\[ \text{V} \]
\[ \text{brauchst} \]
\[ \text{DP} \]
\[ \text{keine} \]
\[ \text{Jacke} \]
\[ \text{anziehen} \]
\[ [\text{nEGG}] \]

At LF, the subject is reconstructed into the embedded VP. The LF thus derived from the S-structure (60) is (61).

(61)

\[ \text{VP'} \]
\[ \text{Op}⁻ \]
\[ \text{VP} \]
\[ \text{VP} \]
\[ \text{du} \]
\[ \text{V} \]
\[ \text{brauchst} \]
\[ \text{DP} \]
\[ \text{keine} \]
\[ \text{Jacke} \]
\[ \text{anziehen} \]

---

\[ ^{15} \text{Considering the fact that traces do not constitute interveners but only phonologically realized material, one might be inclined to conclude that the adjacency condition is a PF-condition. But I do not see how the licensing relation could be formulated at the level of PF, given that the licensor itself is phonologically empty and hence not visible at PF.} \]

\[ ^{16} \text{Here and in the following, I disregard QR for type reasons. If it is assumed that quantifiers have to move at LF to resolve type mismatches, this movement must preserve scope relations and thus does not have an effect on the truth conditions derived.} \]
In the LF (61), the scope relations underlying the split reading are transparent: the modal verb is in the scope of the negation, and the NI, interpreted as a plain indefinite, has narrow scope with respect to the modal. From this LF, the truth conditions (62) are derived, saying that it is not necessary that you wear a jacket.

\[(62) \lambda w. \neg \forall w'[\text{Acc}_w(w') \rightarrow \exists x [x \text{ is a jacket in } w' \& \text{ you wear } x \text{ in } w']]\]

In structures with modal verbs, there are in principle two positions an abstract negation licensing an NI in the complement could occupy. It can either be adjoined to the higher VP headed by the modal verb, as in (60), or to the lower, embedded VP. In example (59), the second option is not available as the modal verb brauchen ('need') is an NPI and thus has to be in the scope of negation. But, in general, modal verbs in German strongly prefer to be outscoped by negation. In certain epistemic uses however modals cannot be interpreted in the scope of negation. In such cases, the abstract negation associated with an NI also takes scope below the modal, as illustrated in (63).

\[(63) \begin{align*}
a. \text{ ..., weil das kein Problem sein müsste.} \\
\text{... because this n-det problem be must.subj} \\
\text{`It should be the case that this is not a problem.'} \\
b. [\text{VP' Op} \rightarrow [\text{VP kein Problem sein }] \text{ müsste } ]
\end{align*}\]

The scope options and preferences modal verbs exhibit with respect to the negative marker carry over to the abstract negation (see Penka and von Stechow, 2001).

The fact that there are two positions available for negation also explains the observed ambiguity when NIs are embedded in the complement of other restructuring verbs like versuchen ('try'), as in (64).

\[(64) \begin{align*}
\text{... weil Frank kein Auto zu stehlen versucht} \\
\text{... because Frank n-det car to steal tries} \\
a. \text{ `Frank tries not to steal a car.'} \\
\text{try } \rightarrow \neg \rightarrow \exists \\
b. \text{ `Frank doesn't try to steal a car.'} \\
\rightarrow \neg \text{ try } \rightarrow \exists
\end{align*}\]

It is a characteristic of restructuring verbs that their complement does not involve a clause boundary. Therefore, the abstract negation licensing the NI in (64) can be either inside the complement, cf. (65a), or in a position c-commanding the matrix verb, as shown in (65b).

\[(65) \begin{align*}
a. [\text{IP Frank } [\text{VP}_2 [\text{VP}_1 \text{ Op} \rightarrow [\text{VP}_1 \text{ kein Auto zu stehlen } ] \text{ versucht } ] ]]
\end{align*}\]
Structure (65a) where negation is embedded in the complement expresses the narrow-scope reading (64a), while (65b) corresponds to the wide-scope reading (64b). If the complement is extraposed, as in (66), the negation can only be adjoined to the infinitival complement, and cannot c-command the finite verb. This is shown in (67).

(66)  ...weil  Frank versucht kein Auto zu stehlen  
      ...because Frank tries n-DET car to steal
      a. ‘Frank tries not to steal a car.’  try > ¬ > Ǝ
      b. *‘Frank doesn’t try to steal a car.’ ¬ > try > Ǝ

(67)  [ [IP Frank [VP ti versucht ]] [ Op¬ [ kein Auto zu stehlen ]]]; ]

Split readings arising when an NI serves as the object of a transitive intensional verb are also immediately explained by this analysis. Consider again our example (68).

(68)  ...weil  Peter kein Einhorn sucht  
      ...because Peter n-DET unicorn seeks
      a. ‘Peter doesn’t try to find a unicorn.’ ¬ > seek > Ǝ
      b. ‘There is no unicorn Peter is trying to find.’ ¬ > Ǝ > seek

Since the lowest position sentential negation can occupy is a VP-adjoined position, the abstract negation licensing the NI c-commands the verb, as shown in (69).
Adopting the analysis of Zimmermann (1993), according to which transitive intensional verbs take properties (in intenso) as arguments, the meaning of *suchen* (‘seek’) is the following:

\[(70) \quad [\text{suchen}] = \lambda w. \lambda P_{(\langle t, t, t \rangle)} \cdot \lambda x. \forall w' [\text{Acc}_{x, w}(w') \to \exists y [P(w')(y) \& x \text{ finds } y \text{ in } w']]\]

In order for the NI *kein Einhorn* (‘no unicorn’) to serve as the argument of *suchen* (‘seek’), it must denote a property. This can be achieved by assuming the determiner to be semantically vacuous in this case, and the denotation of the whole DP to be the same as that of the common noun.

\[(71) \quad [\langle (k)\text{ein } \text{Einhorn} \rangle_{\langle e, i \rangle}] = \lambda w. \lambda x. x \text{ is a unicorn in } w\]

Assuming that *kein Einhorn* (‘no unicorn’) has the denotation in (71), we get LF (72). (For simplicity, I assume that in this case also the subject is reconstructed into its base position.)

\[(72) \quad \text{VP}'\]

\[
\text{t}
\]

\[
\text{Op}\neg
\]

\[
\text{VP}\]

\[
\text{t}
\]

\[
\langle e, i \rangle
\]

\[
P\]

\[
\text{Peter}
\]

\[
\langle t, i \rangle
\]

\[
\text{DP}
\]

\[
\langle s, \langle<e, i>,<e, i>\rangle, <e, i>\rangle
\]

\[
\text{sucht}
\]

\[
\text{kein Einhorn}
\]

The truth conditions expressed by (72) correspond to the split reading, according to which Peter does not seek any unicorn:

\[(73) \quad \lambda w. \neg \forall w' [\text{Acc}_{\text{Peter}, w}(w') \to \exists x [x \text{ is a unicorn in } w' \& \text{Peter finds } x \text{ in } w']]\]

The only other reading of (68) is the *de re* reading, according to which there is no particular unicorn Peter is trying to find. The derivation of this reading is also exactly parallel to the derivation of the *de re* reading for plain indefinites serving as the argument of a transitive intensional verb. In order to derive the *de re* reading, the indefinite has to denote a quantifier, which raises at LF to a position above the intensional verb. In the case of an NI, which cannot outscope the licensing negation at LF, the landing site of QR has to be a VP-joined position below Op\neg, as in (74).
As the verb *suchen* (‘seek’) requires a property as its first argument, the trace of the NI, which is of type $e$, has to be type-lifted to a property. For this purpose, Partee’s (1987) type-shifting operator $\text{ident}$ is employed.

\begin{equation}
\text{ident} = \lambda w. \lambda x_e. \lambda y_e. x = y
\end{equation}

The truth conditions expressed by LF (74), in which the NI takes scope above the intensional verb, are given in (76a), which can be reduced to (76b).

\begin{equation}
\begin{aligned}
\text{a. } & \lambda w. \neg \exists x \left[ x \text{ is a unicorn in } w \land \forall w' \left[ \text{Acc}_{\text{Peter}, w'(w')} \rightarrow \exists y \left[ y = x \land \text{Peter finds } y \text{ in } w' \right] \right] \right] \\
\text{b. } & \lambda w. \neg \exists x \left[ x \text{ is a unicorn in } w \land \forall w' \left[ \text{Acc}_{\text{Peter}, w'(w')} \rightarrow \text{Peter finds } x \text{ in } w' \right] \right]
\end{aligned}
\end{equation}

As we see, it is not a problem to derive the *de re* reading under the assumption that NIs in German are not negative quantifiers. But the strength of this analysis lies in its easily deriving the split reading, and moreover the impossibility of deriving an unattested reading, in which negation takes narrow scope with respect to the verb. As the negation licensing the NI is sentential negation, it cannot possibly occupy a position below the verb. Thus, it fares much better than the negative quantifier analysis, and derives all and only attested readings.

The fact that NIs in German are not analysed as negative quantifiers has another welcome consequence. No commitment is made regarding the quantificational status of NIs. This is an advantage because NIs can occur
in contexts in which a quantifier cannot (easily) be interpreted. Further environments besides transitive intensional verbs, for which it has been argued that indefinites denote properties rather than quantifiers, are predicative nominals and existential constructions. The fact that NIs can occur in these contexts, as demonstrated in subsection 3.1.3, does not pose a challenge for such analyses. The negation associated with the NI always refers to the verb, and the NI itself is just an indefinite, interpreted as any other indefinite in this position, e.g. as a property. The negation associated with the NI is sentential negation in the form of an abstract negative operator taking scope above the verb. This also explains why *kein* can occur in idioms normally involving a positive indefinite (see subsection 3.1.5): the meaning of the *kein*-indefinite is the same as that of the corresponding positive indefinite. The negation, whose presence *kein* marks, does not interfere in the interpretation of the idiom as it occupies a position external to the idiom. In some cases, for example when combining with measure phrases, *kein* is semantically vacuous and serves only the purpose of marking the presence of an abstract negation.

The proposed analysis of NIs in German, which builds on the analysis of NIs in NC-languages presented in the previous chapter, straightforwardly explains the existence of split readings with respect to intensional verbs. It also predicts that the negation associated with NIs always refers to the verb.

3.2.2 Scope splitting under topic-focus accent

The cases of scope splitting with respect to other quantifiers under topic-focus accent are a little more complex to analyse—not in terms of the analysis of NIs but because the contribution of the intonation pattern to the interpretation has to be taken into account.

It is characterized by a rising pitch accent on an element in the prefield, i.e. in Spec,CP, and a falling tone on an expression in the middle field.

There are a number of names for this intonation pattern: bridge accent, rise-fall contour, hat contour, I-Topicalization (Jacobs, 1982). It is also called topic-focus accent because it is generally assumed that a rising accent on a constituent identifies it as topic, whereas falling accent is used for focus.17

Büring (1997) calls the constituent bearing topic accent the S-Topic. He proposes that interpretation of S-Topics parallels interpretation of focus in introducing alternatives (cf. Roeth, 1985). Büring postulates a third semantic object for a sentence A besides its ordinary semantic value, [[A]₀], and its focus value, [[A]ᶠ], namely the topic value of A, written as [[A]ᶠ]. The topic value of a sentence is a set of sets of propositions where the sets of propositions differ with respect to the alternative replacing the S-Topic. A topic value can more

---

17 The constituent serving as topic or focus can be bigger than the constituent accented.
transparency be conceived as a set of questions (where the denotation of a question corresponds to a set of propositions). While this is rather abstract at this point, it will hopefully become clear in the course of discussing a number of examples below.

Büring (1997) further assumes that the following correlation between scope and surface position holds:

\[(\text{77})\quad \text{A constituent } A \text{ can take scope over another constituent } B \text{ iff either a. or b. holds:} \]

\[\text{a. } A \text{ c-commands } B \text{ at S-structure;}\]
\[\text{b. } A \text{ c-commands a trace of } B \text{ at S-structure.}\]

Let us assume that only traces left behind in base positions count for (77b). Then (77) is tantamount to: each constituent is interpreted either with surface scope or in its base position. In German, the reading with surface scope is normally strongly preferred, and scrambling is employed to make scope relations transparent at S-structure. Under bridge accent, however, the reading with inverse scope is in some cases the only one available. A case in point is the following example discussed by Büring:

\[(\text{78})\quad /\text{ALLE Politiker sind NICHT} / \text{korr upt.}\]
\[
\text{all politicians are not corrupt} \\
\text{a. } \forall \text{ 'For all politicians: it is not the case that they are corrupt.' } \quad \forall > \neg \\
\text{ ( = 'No politician is corrupt.' )} \\
\text{b. 'It is not the case that all politicians are corrupt.' } \quad \neg > \forall
\]

Büring (1997) offers a pragmatic explanation for the fact that this intonation pattern has a disambiguating effect in certain cases. It is based on the assumption that the use of topic accent carries with it the implicature that there is still a residual topic after the sentence has been uttered. By residual topic it is meant that the issue under discussion is not completely settled and that there are propositions that are still disputable. This condition can be stated in the following way:

\[(\text{79})\quad \text{Condition on S-Topics:} \]
\[\text{Given an LF } A, \text{ containing an S-Topic, there is an element } Q \text{ in } [A]^1 \text{ such that } Q \text{ is still disputable after } [A]^o \text{ has been accepted.}\]

Let us see how the principle in (79) accounts for the fact that the inverse scope reading (78b) is the only reading of example (78). Consider first LF (80a), in which the universal quantifier and negation take surface scope. The constituents serving as topic and focus are marked by [ ]_T and [ ]_F, respectively.
(80)  a. \([\text{alle}]_{T} \text{Politiker \(\lambda_{l}\)} [\text{[nicht]}_{F} \text{1 korrump sind}] \]
b. \(\lambda w.\forall x| x \text{ is a politician in } w \rightarrow \neg [x \text{ is corrupt in } w]\)]\]

Besides the ordinary semantic value \(\llbracket (80a) \rrbracket^o\), given in (80b), this LF also has a focus and a topic value. The focus value of (80a), \(\llbracket (80b) \rrbracket^f\), contains the propositions derived by replacing the constituent marked as focus, namely not, by its alternatives. Assuming that the sole alternative to negation is the identity function, \(\llbracket (80a) \rrbracket^f\) corresponds to (81).

(81)  \{all politicians are corrupt, all politicians are not corrupt\}

The topic value of (80a), \(\llbracket (80a) \rrbracket^t\), contains sets of propositions that are derived from the focus value \(\llbracket (80a) \rrbracket^f\) by replacing the S-topic all by its alternatives. The alternatives to the quantifier all are other quantifiers such as most and some. Hence, \(\llbracket (80a) \rrbracket^t\) corresponds to the set in (82).

(82)  \{\{all politicians are corrupt, all politicians are not corrupt\},
\{most politicians are corrupt, most politicians are not corrupt\},
\{some politicians are corrupt, some politicians are not corrupt\}\}

Now that we know the topic value of LF (80a), let us check whether it obeys the principle in (79), according to which there has to be a residual topic after the ordinary semantic value has been accepted as true. The question is whether there are sets of propositions in (82) that are still under debate, i.e. whose members can be true or false, once (80b) has been accepted as true. We find that (80b), being equivalent to ‘no politician is corrupt’, entails all of the negative propositions (i.e. all the ones involving negation) in (82). At the same time, all of the positive propositions are incompatible with ‘no politician is corrupt’. There is thus no residual topic. The fact that LF (80a) is associated with a topic value violating the principle in (79) explains that the reading expressed by this LF is not available.

There is still a second LF available for sentence (78), derived by reconstructing the topicalized DP into its base position inside VP and below negation, as shown in (83).

(83)  \([_{VP} \text{[nicht]}_{F} [_{VP} \text{[alle]}_{T} \text{Politiker korrump sind}]]\]

From this LF, the following ordinary semantic, focus, and topic values are derived as above:

(84)  a. \(\llbracket (83) \rrbracket^o = \lambda w.\forall x| x \text{ is a politician in } w \rightarrow x \text{ is corrupt in } w\] \]
b. \(\llbracket (83) \rrbracket^f = \{\text{all politicians are corrupt, not [all politicians are corrupt]}\}\]
c. \(\llbracket (83) \rrbracket^t = \{\{\text{all politicians are corrupt, not [all politicians are corrupt]\}},
\{\text{most politicians are corrupt, not [most politicians are corrupt]\}},
\{\text{some politicians are corrupt, not [some politicians are corrupt]\}}\}\)
We now have to check whether there are any sets of propositions in the topic value (84c) that are still disputable after (84a) has been accepted as true. As it turns out, only the first set of propositions, corresponding to the question ‘Are all politicians corrupt?’ is non-disputable. The other two, corresponding to the questions ‘Are most politicians corrupt?’ and ‘Are some politicians corrupt?’ are not settled by (84a). As there is a residual topic, LF (83) obeys the principle in (79) and the reading expressed by it is available.

With this analysis of the interpretation of S-topics from Büring (1997) in place, let us now return to our cases of interest, where a universal quantifier in the prefocal serves as S-topic and an NI in the middle field as focus. In this constellation, a split reading results. Büring’s analysis explains why the split reading is the only reading available in cases like (85), but we still have to explain how the split reading arises in the first place.

(85) /Jede Schwester bewundert KElnen\ Arzt.
   every.nom nurse.nom admires n-det.acc doctor.acc
   a. *‘For every nurse: it is not the case that she admires a doctor.’
      \*\forall > \neg > \exists
   b. ‘It is not the case that every nurse admires a doctor.’
      \neg > \forall > \exists

The surface structure of this sentence is shown in (86).

(86)
Entirely parallel to the example discussed above, reading (85a), in which the operators are interpreted with surface scope, is excluded, because there is no residual topic. But there is a second LF, (87), derived by reconstructing the topicalized subject into its base position inside VP.

\[(87)\]

\[
\begin{array}{c}
\text{Op}\rightarrow \\
\text{VP}' \\
\text{VP} \\
\text{DP} \\
\text{jede Schwester} \\
\text{DP} \\
\text{keinen Arzt} \\
\text{V} \\
\text{bewundert}
\end{array}
\]

After reconstruction of the subject into its base position, the universal quantifier takes scope in between \(\text{Op}\rightarrow\) and the NI, as is evident in the structure (87). Note that there is nothing in the licensing conditions for NIs that rules out this constellation. While an NI has to be immediately adjacent to \(\text{Op}\rightarrow\) in the surface syntax, it is sufficient that it is in the scope of \(\text{Op}\rightarrow\) at LF. It does not have to be in its immediate scope. This explains how the split reading arises: because the LF in which the topicalized universal quantifier takes surface scope is excluded for pragmatic reasons, the quantifier is forced to reconstruct into its base position, which happens to be in between the NI and the abstract negation. This LF expresses the split reading, as shown in (88).

\[(88)\]

\[
\begin{align*}
\text{[(87)]}^\circ &= \lambda w. \neg \forall x [x \text{ is a nurse in } w \rightarrow \\
&\exists y [y \text{ is a doctor in } w \& x \text{ admires } y \text{ in } w]]
\end{align*}
\]

There is still an issue we need to clarify: what constitutes the focus in this example? In order to find out, we have to consider what sentence (85) conveys. According to intuitions, a speaker uttering (85) implicates that a certain number of nurses do admire a doctor. Hence, the questions still under debate after uttering sentence (85) are ‘Do most nurses admire a doctor?’ and ‘Do some nurses admire a doctor?’ In other words, the topic value of LF (87) is the following:

\[(89)\]

\[
\text{[(87)]}^! = \{\{\text{every nurse admires a doctor, not [every nurse admires a doctor]}\}, \\
\{\text{most nurses admire a doctor, not [most nurses admire a doctor]}\}, \\
\{\text{some nurses admire a doctor, not [some nurses admire a doctor]}\}\}
\]
From this topic value it is clear what the focus value of (87) must be, namely (90), and it is also clear what the focus must be: the negation. As the semantic operator expressing negation is $\text{Op}^{\neg}$, focus must be on $\text{Op}^{\neg}$. Thus, the complete LF for the available reading of (85), including the S-Topic and the focus, is (91).

\[(87)]^f = \{\text{every nurse admires a doctor, not}\{\text{every nurse admires a doctor}\}\}

\[(88)]^f = \{\text{Schwester einen Arzt bewundert}\}

Note that this LF runs counter to the well-established assumption that the accent must be placed on a part of the constituent serving as focus or S-Topic. While negation is the semantic focus, it is the NI that receives the accent rather than negation. But how could the negation operator that serves as focus possibly receive stress, given that it is not realized phonologically? I propose that the NI, marking the presence of $\text{Op}^{\neg}$, receives the accent as proxy for negation.

The assumption that it is really negation, rather than a negative quantifier, that serves as focus, if \textit{kein} bears focus accent, is confirmed by the following German example from Büring (1997: 56) and its English counterpart (93):

\[(92)] a. A: \text{Hat deine Frau fremde Männer geküsst?}
   b. B: [\text{MEIne}]^T \text{Frau hat [KEIne]}^F \text{fremden Männer geküsst.}

\[(93)] a. A: \text{Did your wife kiss other men?}
   b. B: [\text{MY}]^T \text{wife [DIDN'T]}^F \text{kiss other men.}

As the preceding question as well as the English counterpart makes clear, what is under debate here is whether other men were kissed by someone’s wife or not. It is not the number of other men kissed by someone’s wife that is under debate, as one would expect if a quantifier constituted the focus. Thus, (92b) should more aptly be represented as (94).

\[(94)] [\text{MEIne}]^T \text{Frau hat [Op}^{\neg}]^F \text{KEIne fremden Männer geküsst.}

The structure (94) is now parallel to the English version (93b), and its topic value could look like (95), as suggested by Büring (1997: 71).

\[(95)] \{\text{my wife kissed other men, my wife didn’t kiss other men \},
   \{your wife kissed other men, your wife didn’t kiss other men \},
   \{Bolle’s wife kissed other men, Bolle’s wife didn’t kiss other men \},
   \{Fritz’s wife kissed other men, Fritz’s wife didn’t kiss other men\}, \ldots\}

If, on the other hand, it were assumed that a negative quantifier serves as focus as suggested by Büring’s structure (92b), the focus and topic values would be
different. As alternatives have to be of the same monotonicity, i.e. either all upward or downward monotonic (cf. Horn 2001: 235), the alternatives to the alleged negative quantifier would be other DE-quantifiers like few and less than ten. The topic value of (92b) would thus look like (96).

(96)  {{my wife kissed no other men, my wife kissed few other men, my wife kissed less than ten other men},
{your wife kissed no other men, your wife kissed few other men, your wife kissed less than ten other men}, …}

But under this assumption, (92b) would not constitute a felicitous answer to question (92a) according to the following condition (97) on question–answer pairs proposed by Büring (1997):

(97)  Question–Answer Condition
(Büring, 1997: 67)
The meaning of the question must match one element in the Topic value of the answer.

The meaning of question (92a) (understood as the set of possible answers of the addressee) is the set of propositions (98).

(98)  { my wife kissed other men, my wife didn’t kiss other men }

As (98) does not match any element of the topic value in (96), (92b) should not be a possible answer to the question, if (96) were indeed the topic value of (92b). If, on the other hand, it is assumed that focus is constituted by the abstract negation operator rather than a negative quantifier, (95) is a possible topic value of (92b), and the condition on question–answer pairs is met. The fact that (92b) is a felicitous answer to question (92a) thus provides further evidence for assuming that the focus is on Op¬ rather than on a negative quantifier.

Let us return to split readings arising under topic–focus accent. In example (85), a rising accent on a topicalized universal quantifier and a falling accent on an NI in the middle field led to the split reading. This constellation, however, is in fact not sufficient for the split reading to arise. For sentence (99), the split reading is not available.

(99) /ALLE Fragen hat KEIN\ Kandidat
all.acci questions.acci has n-det.nom candidate.nom
beantwortet.
answered
  a. ‘For every question: no candidate answered it.’  *∀ > ¬ > ∃
  b. ‘No candidate answered all questions.’  ¬ > ∃ > ∀
  c. ‘Not every question was answered by some candidate.’  *¬ > ∀ > ∃
The only available reading is (99b), where the universal quantifier takes scope below both the negation and the existential quantifier. While reading (99a) with wide scope of the universal quantifier is pragmatically excluded as before, the split reading (99c) is not available for syntactic reasons. The only position the topicalized DP can reconstruct to is its base position. Being the object, its base position is below the subject. Therefore, the only possible LF in which the universally quantified object takes scope below negation is (100), where it also takes scope below the indefinite.

\[
(100) \\
\text{[Op}^\neg]\_F \\
\text{DP} \\
\begin{array}{c}
\text{kein Kandidat} \\
\end{array} \\
\text{VP} \\
\text{VP'} \\
\end{array}
\]

Similarly for cases with ditransitive verbs. The split reading arises if a universally quantified indirect object is topicalized, cf. (101), but not if the topicalized DP is the direct object, as in (102).

\[
(101) \quad \text{/JEdem Studenten habe ich KEIN Buch empfohlen.} \\
a. \text{``For every student: I didn't recommend any book to him.''} \\
\quad \forall > \neg > \exists \\
b. \text{``It isn't true that for every student there is a book such that I recom-} \\
\quad \neg > \forall > \exists \\
\text{mended it to him.''} \\
\]

\[
(102) \quad \text{/JEdes Buch habe ich KEInem Studenten empfohlen.} \\
a. \text{``For every book: I didn't recommend it to any student.''} \\
\quad \forall > \neg > \exists \\
\]

\[
\text{[alle]}_T \\
\text{Fragen} \\
\text{beantwortet} \\
\text{hat} \\
\text{VP} \\
\text{VP'} \\
\text{DP} \\
\text{kein Kandidat} \\
\text{[Op}^\neg]\_F \\
\text{DP} \\
\text{VP} \\
\text{VP'} \\
\text{[alle]}_T \\
\text{Fragen} \\
\text{beantwortet} \\
\text{hat} \\
\]

b. *‘It isn’t true that for every book there is a student such that I recommended it to him.’
   \[ \neg \rightarrow \forall \rightarrow \exists \]

c. ‘There is no student who I recommended every book to.’ \[ \rightarrow \exists \rightarrow \forall \]

This contrast in the availability of the split reading is also easily explained. Assuming the unmarked word order of nominal arguments in the middle field (subject > indirect object > direct object, cf. Lenerz 1977) to correspond to the base-generated order, the base position of the direct object is closest to the verb. Consequently, a direct object cannot be reconstructed in between Op− and an NI. In the case of (102), with the underlying structure (103), the direct object *jedes Buch* (*every book*) takes scope below the NI if it is reconstructed into its base position. Such an LF expresses reading (102c), which is the only available reading.
If, on the other hand, the topicalized DP is the indirect object, as in (101), its base position is in between the direct object and the position of Op→, as shown in (104).

(104)

Reconstructing the topicalized indirect object into its base position results in an LF expressing the split reading (101b).

We have answered the question why the split reading under topic–focus accent arises in the first place: by reconstruction of a topicalized universal quantifier into its base position, which is in between Op→ and the NI. This predicts the split reading to be possible only if the base position of the universal DP is in between the NI and the position Op→ occupies. The fact that the split reading under topic–focus accent only arises in certain constellations is thus explained. Furthermore, we see why scope splitting with respect to universal quantifiers requires the special constellation of topic–focus accent. In this constellation, the reading with surface word order, which is normally the only one available, is ruled out by pragmatic constraints, rendering possible the reading involving reconstruction of the topicalized material into a position in between Op→ and the NI.
3.2.3 Negative indefinites in sentence-initial position

The analysis of NIs advocated here requires NIs in German to be adjacent to an abstract sentential negation at the level of surface structure. This raises the question why NIs are possible in sentence-initial position in main clauses, as in (105).

(105) Kein Student hat die Prüfung bestanden.
       n-det student has the exam passed
       ‘No student passed the exam.’

Under the standard V2-analysis of German, the preverbal position in main clauses corresponds to Spec,CP. Another standard assumption is that CP is the highest layer in the clause, and that adjunction to CP is not possible, as this would render the finite verb in C° in third rather than in second position. So how can preverbal NIs in German main clauses possibly be licensed if there is no position a licensing Op→ could occupy?

Faced with this problem, Jacobs (1982, 1983) argues that adjunction to CP is possible after all. Evidence comes from negation as well as focus particles. Jacobs argues that negation is an ‘adsentential’, i.e. an adverb that can adjoin to any verbal projection. This also includes the availability of adjunction to CP. One of his arguments concerns cases like (106), with a main-clause-initial negative marker followed by a quantificational DP.

(106) Nicht jede Schwester bewundert einen Arzt.
       neg every nurse admires a doctor
       ‘Not every nurse admires a doctor.’

According to standard assumptions (106) involves constituent negation, i.e. the negative marker is adjoined to the topicalized DP. Jacobs (1982) argues that this falls short of explaining that such a constituent cannot occur in other positions. In particular, Jacobs observes that the alleged constituent [DP nicht DP] cannot serve as the complement of a preposition:18

(107) *Ich habe mit nicht jeder Schwester gesprochen.
       I have with neg every nurse talked
       ‘I didn’t talk to every nurse.’

18 Although nicht inside a propositional phrase is strongly dispreferred, there are however occurrences of this. The following example is not perfect but not entirely ungrammatical either.

(i) Dies ist eine auf nicht jeden Benutzer übertragbare Karte.
       this is a on neg every user transferable card
       ‘This is a card not transferable to every user.’

The issue regarding the distribution of negation inside PPs is thus not as straightforward as Jacobs proposes.
Jacobs' syntactic argument is supported by a semantic argument showing that negation and the topialized DP can take scope independently of each other (see Sternefeld, 2006: 333). The following example has a reading in which negation takes scope above the modal verb, while the topialized DP is interpreted in the scope of the modal.

(108) **Nicht jeder kann der Erste sein.**
   neg everyone can the first be
   'It is not possible that everyone is first.'

This scope-splitting effect is hard to account for if negation and the universally quantified DP are assumed to form one constituent. If it is assumed that negation is adjoined to CP, the paraphrased reading follows straightforwardly from the possibility of the universally quantified subject to reconstruct into the scope of the modal.

There is thus evidence in favour of Jacob's proposal that sentential negation can adjoin to CP. Though running counter to the traditional analysis of German as V2, rather than V3, it seems that certain elements such as negation can adjoin to CP.\(^{19}\)

\(^{19}\) Jacobs (1983) argues that the same syntactic analysis as for sentential negation also applies to focus particles like *nur* ('only') or *sogar* ('even') in German: they adjoin exclusively to verbal projections, including CP. This analysis of focus particles in German has been bolstered by Büring and Hartmann (2001), who provided new arguments for the assumption that sentence-initial focus particles in German are indeed adjoined to CP. (Büring and Hartmann's paper has however not gone unchallenged, both regarding their analysis and their arguments; see Reis, 2005 and Bouma et al., 2017.)

Unfortunately, Büring and Hartmann's (2001) argument for the assumption that sentence-initial focus particles are adjoined to CP rather than to a topialized DP cannot be replicated for sentential negation. Büring and Hartmann observe that in examples like (i), the focus particle outscopes the universal subject, although the topialized DP has to be reconstructed below the subject because it contains a pronoun bound by the subject.

(i) **Nur ein Bild von seiner FRAU besitzt jeder Mann.**
   only a picture of his wife possesses every man
   a. 'Every man possesses only a picture of his wife.'
   b. 'The only person every man possesses a picture of is his wife.'

Only the reading (i-b) is available. Reading (i-a), in which the focus particle plus the DP is reconstructed below the subject, is impossible. This fact follows if it is assumed that the focus particle in (i) is adjoined to CP rather than the topIALIZED DP.

Corresponding sentences with sentence initial negation are rather odd, and it is not clear what they mean. (Note that it is crucial that there is no heavy stress on the determiner *alle* ('all'), or on the common noun, as this would involve an instance of contrasting negation rather than sentential negation).

(ii) a. **Nicht alle Bilder von seiner Frau sammelt jeder Mann.**
   neg all pictures of his wife collects every man
   'Not every man collects all pictures of his wife.'
I adopt Jacobs' analysis of the syntax of the negative marker and assume that sentential negation in German is expressed by an adverb that can adjoin to any verbal projection, including CP. Accordingly, the following structure is assumed to underlie sentence (105):

\[(109) \quad [_{\text{CP}} \, \text{Op} \rightarrow [_{\text{CP}} \, \text{kein Student}]_{i} \, \text{hat}, \, [_{\text{IP}} \, t_{j} \, [_{\text{VP}} \, t_{j} \, \text{die Prüfung bestanden} \, t_{j}]})]\]

NIs occurring in the prefield are generally subjects or adverbial NIs. This is due to this position being associated with a certain function in terms of information structure. While adverbs and subjects can generally occupy Spec,CP, other nominal arguments of the verb can occur in this position only if they serve as S-topic. But S-topics cannot be embedded under negation. As NIs have to be in the scope of negation, it follows that an NI in Spec,CP cannot serve as S-topic. If an indefinite interpreted in the scope of negation is to serve as S-topic, a plain indefinite has to be topicalized, as in (110).

\[(110) \quad \text{Eine Einladung/ habe ich nicht bekommen.} \quad \text{an invitation have I NEG gotten} \quad \text{As for an invitation, I didn't get one.}\]

Another option, called topic split and illustrated in (111), is that only the common noun occurs in Spec,CP and the determiner remains in the middle field.

\[(111) \quad \text{Einladung/ habe ich keine bekommen.} \quad \text{invitation have I n-DET gotten} \quad \text{As for an invitation, I didn't get one.}\]

If an object NI is topicalized, the NI has to bear topic accent, as in (112), and negation serves as S-topic.

\[(112) \quad \text{KEln/ Einladung hat Peter bekommen.} \quad \text{n-DET invitation has Peter gotten} \quad \text{As for not getting an invitation, Peter didn't get an invitation.}\]

b. \text{?Keinen ihrer Brüder liebt jede Frau.} \quad \text{n-DET,ACC her brothers loves every.NOM woman.NOM} \quad \text{"Not every woman loves one of her brothers."} \]

In any case, examples like (ii) are not interpreted parallel to Bürging and Hartmann's examples with a sentence-initial focus particle. There is no reading where negation takes scope above the universal subject while the DP is reconstructed. The fact that such sentences are odd is probably related to the information-structural requirements topicalized object NIs bring with them (see below).
Topicalized object NIs are thus generally used as contrastive topics. Sentence (112), for example, would be used in a discourse in which the previous topic was 'getting an invitation'. This parallels cases where negation in the prefield bears topic accent, cf. (113).

(113) NICHT/ eingeladen wurde Peter.
    neg invited was Peter
    'As for not being invited, Peter wasn’t invited.'

The parallel between (112) and (113) confirms the claim that, when an NI bears topic or focus accent, it is really negation that serves as S-topic or focus.

Before closing this section, I would like to mention one remaining issue concerning NIs in the prefield. In certain cases, a topicalized NI, including negation, can be reconstructed below an operator in the middle field. These cases involve topic-focus accent, where this time the topic accent is on an NI. An example is (114).

(114) /KEine Aufgabe hat KEIN\ Student gelöst.
    n-det.acc task.acc has n-det.nom student.nom solved
    a. 'No problem was solved by no student.'
    b. 'No student solved no problem.'

Sentence (114) is ambiguous between a reading with surface-scope, cf. (114a), and reading (114b), in which the topicalized NI, including negation, scopes below the subject. Both readings conform to Büring's condition on topic accent, as both leave a residual topic. The question is how negation can get in the scope of the subject at all, if it is assumed to be adjoined to CP.\(^{20}\) I tentatively suggest that cases like (114) involve remnant topicalization of VP. I assume that they parallel cases like (115), where a VP is topicalized:

\(^{20}\) The same problem arises for Büring and Hartmann's (2001) analysis of focus particles, as pointed out by Reis (2005). A clause-initial focus particle bearing topic accent can be interpreted in the scope of an operator in the middle field (provided the resulting reading meets the topic condition):

(i) /NUR Bier hat Niemand\ getrunken.
    only beer has n-person drunk
    'Nobody drank only beer.'

In contrast, stressing Bier ('beer') (with focus accent), and giving the NI in the middle field no intonational prominence, yields a reading where nur ('only') has scope over negation.

(ii) Nur BIER hat niemand getrunken.
    only beer has n-person drunk
    'Beer was the only beverage nobody drank.'
(115) a. /NICHT gekommen ist nur FRITZ\).  
NEG come is only Fritz  
‘As for not having come, only Fritz didn’t come.’

b. /NICHTS getrunken hat nur MARIA\).  
n-thing has only Maria  
‘As for not drinking anything, only Maria didn’t drink anything.’

In these cases, negation, in the form of the negative marker or Op¬, is not adjoined to CP but rather to the VP in Spec,CP, as shown in (116). This complex VP' can be reconstructed, bringing negation in the scope of nur (‘only’) and yielding the reading observed.

(116) a. [CP [VP nicht [VP gekommen ti ]] j i si ti [IP nur Fritz ti ]]  
b. [CP [VP Op¬ [VP nichts getrunken ti ]] j j i ha ti [IP nur MARIA ti ]]  

In the case of (114), it would have to be assumed that not only does the finite verb move out of VP (to C0) but that the participle also moves out of VP. Then the remnant VP, with Op¬ adjoined, is moved to Spec,CP. This is shown in (117).

(117) [CP [VP Op¬ [VP keine Aufgabe ti ti j j i h a ti [IP Op¬ [IP kein Student [VP gelöst ti ti ]]]]]  

Assuming the structure (117), it is possible for VP' including negation to reconstruct below the subject. The corresponding LF expresses reading (114b).

3.2.4 Negative indefinites inside prepositional phrases

The requirement that NIs in German be adjacent to a covert sentential negation appears to be problematic for NIs in another kind of syntactic environment too. In German, NIs can occur inside prepositional phrases, as the following examples illustrate.21

(118) a. ER hat [PP auf kei ne Frage] geantwortet.  
he has on n-det question answered  
‘He didn’t answer any question.’

I have to n-person talked  
‘I didn’t talk to anyone.’

In these cases, the NI cannot be immediately adjacent to a position the negative marker could occupy because the preposition intervenes. This raises

21 A cross-linguistic discussion about the possibility of NIs of occurring inside PPs can be found in section 5.4.
the question how PP-internal occurrences of NIs can be reconciled with the present analysis of NIs.

One might try to circumvent this problem by assuming that there are really two kinds of NIs in German (as has been proposed by Kratzer, 1995).22 One kind of NI corresponds to the analysis advocated here, i.e. these NIs are semantically non-negative indefinites that have to be adjacent to a covert negation. The second kind of NIs are assumed to be inherently negative, i.e. negative quantifiers. This way out, however, does not work because NIs inside PPs can also give rise to split readings, as (119) illustrates and can therefore not be assumed to correspond to negative quantifiers.

you may with n-DET stranger talk
‘You are not allowed to talk to any stranger.’

The fact that NIs are licensed inside PPs although they are required to be adjacent to a covert negation begins to look less puzzling once it is related to other observations revealing a special status of PPs. Prepositions and PPs show a number of properties distinguishing them from other syntactic categories like A(P) and V(P) (for an overview see Bayer and Bader, 2007). One of them is

22 Kratzer’s (1995) assuming two different types of NIs is motivated by the diverging behaviour of singular vs. plural kein-phrases in German. While singular kein-phrases can serve as subjects of individual level predicates, cf. (i-a), plural kein-phrases are excluded in this position, cf. (1-b).

(i) a. ...weil kein Arzt barmherzig ist ...because n-DET physician altruistic is
   ‘...because no physician is altruistic’

b. ...weil keine Ärzte barmherzig sind ...because n-DET physicians altruistic are
   ‘...because no physicians are altruistic’

To explain these data, Kratzer argues that plural kein-phrases are formed by obligatory amalgamation of sentential negation with an adjacent indefinite article (in the style of Jacobs (1986), see next section). She moreover assumes a fixed position, NegP, for sentential negation immediately above VP. Under her proposal that subjects of individual-level predicates are base-generated VP-externally, it follows that plural kein-phrases cannot occur in this position. Singular kein-phrases, in contrast, are either derived by amalgamation or, alternatively, are genuine negative quantifiers.

This analysis is problematic in light of the fact that NIs can occur in the prefield, as discussed in the previous section. The contrast in (i) moreover seems to be related to the fact that bare plurals as subjects of individual-level predicates always receive a generic interpretation, which is not possible for NIs.
the fact that wh-movement pied-pipes prepositions (Ross, 1967). Pied-piping of prepositions is obligatory in German, as illustrated in (120).

(120)  [PP mit wem ] sprichst du?
with who.DAT talk you
‘Who are you talking to?’

Moreover, movement of a PP with a wh-complement to Spec,CP is sufficient to mark the CP as +wh, so that it can serve as the complement of a predicate like inquire requiring a +wh-marked complement, cf. (121a), even though the wh-phrase is embedded inside the PP. In contrast, fronting of a wh-phrase embedded in a VP is not sufficient to mark the embedded CP as +wh, as illustrated in (121b).

(121) a. Peter fragt [CP [PP aus welchem Land ]
        Peter inquires from which country
        Maria stammt ]
        Maria originate
‘Peter inquires from which country Maria is.’

b. ‘Peter fragt [CP [VP welchen Prominenten treffen]]
        Peter inquires which celebrity meet
        Maria möchte ]
        Maria wants
‘Peter inquires meeting which celebrity Maria wants.’

In view of data like (120) and (121), Grimshaw (1991) proposes that PPs are extended projections of DP and NP. The idea is that lexical heads share their categorial feature with the functional heads in their extended projections. PP being an extended projection of DP (and NP), features of the DP (and NP) can percolate up to the level of PP (see Bayer and Bader, 2007, for an implementation in terms of Agreement as feature transmission). This explains why the PP in (120) and (121a) is +wh-marked.

Under the assumption that PP is an extended projection of DP, negative features of NIs serving as complement of P percolate up to the PP-level in the same way as wh-features do. Consequently, in a case like (122), the [uneqð]-feature is replicated on PP, as shown in (123), and thus in a position where it can be checked by a negation operator under adjacency.

(122) …er mit niemandem spricht
...he with no.person.DAT talk
‘He talks to no one.’
The independently motivated analysis of PPs as extended projections of DPs explains why a preposition does not disrupt adjacency between a licensing negation and an NI.

There is a remaining issue regarding the occurrence of German NIs in PPs that is worth pointing out. While pronominal NIs are generally unobjectionable as complements of prepositions, NIs based on the determiner *kein* are often marked in this position.

(124) a. ?Er kommt aus *keinem europäischen* Land.
   He comes from *n-DET European* country
   'He doesn’t come from a European country.'

   b. ?Das Gerät ist in *keiner Schachtel* verpackt.
      the appliance is in *n-DET box* packed
      'The appliance isn’t packed in a box.'

*Kein*-phrases in PPs are fully acceptable when they can receive a partitive reading. Sentence (125a) involving an explicit partitive is fine, as is (125b), for which some relevant advice, namely the advice he got, can be inferred. Similarly, the *kein*-phrase *kein Fahrzeug* ('no vehicle') in (125c) is interpreted as referring to the vehicles available to Peter.
(125) a. Sie kommt mit keinem ihrer Nachbarn aus.  
'she comes with n-det her neighbours out'  
'She doesn’t get along with any of her neighbours.'

b. Er hat auf keinen Rat gehört.  
'he has on n-det advice listened'  
'He didn't listen to any advice (he got).'

c. Peter kann auf kein Fahrzeug verzichten.  
'Peter can on n-det vehicle dispense'  
'Peter cannot dispense with any of his vehicles'

*Kein*-phrases inside PPs are acceptable when the domain of quantification is a set established in the discourse or can be inferred from the context. This seems to be related to the effect called D-linking, which has been observed in connection with wh-phrases (Pesetsky, 1987). Interestingly, minimizer NPIs involving an indefinite term can be realized as *kein*-phrases even when embedded under a preposition. This is illustrated in (126) for the minimizer *eine Menschenseele* ('a human soul').

(126) Er spricht mit keiner Menschenseele darüber.  
'he talks with n-det human-soul this-about'  
'He doesn’t talk about it with anyone.'

I now move on from these observations about the distribution of *kein*-phrases inside PPs and the conditions under which they seem to be possible. I do not have an explanation for this puzzling behaviour of *kein*-phrases and the contrast with pronominal NIs. More work is needed to understand what is going on here.

### 3.3 Comparison with other accounts

#### 3.3.1 Amalgamation and incorporation

A number of alternative accounts have been given for the scope-splitting effect exhibited by NIs in German. I will start with those sharing with my analysis

---

23 Similar facts also hold for Dutch. The negative determiner *geen* ('no') normally cannot occur inside PP, although this is possible in some Southern Dutch dialects (cf. Hoeksema, 1999: 414).

(i) *ik houd* [PP van *geen* koffie]  
'I don’t like coffee.'  
(Dutch)  
(from Hoeksema, 1999: 414)

Hoeksema (2005) observes that *geen* ('no') is fine inside PPs if it is accompanied by *enkel* ('single'). I suspect that this is related to the partitive or D-linking effect discussed above, and the presence of *enkel* ('single') facilitates a partitive interpretation.
the assumption that NIs are separated into two distinct elements, a negation and an indefinite, at some level of the representation.

The first to thoroughly discuss the phenomenon of scope splitting of NIs in German and to propose an analysis was Jacobs (1980, 1982, 1991). The present account, in fact, shares many characteristics with Jacobs' original proposal, and might be considered simply a reformulation of Jacobs' analysis in modern terms. In fact, I have adopted assumptions from Jacobs' work regarding the distribution of the covert negation. The difference lies in the kind of elements NIs are assumed to be. While I take NIs to be lexical units licensed by negation, Jacobs assumes that NIs are made up of two elements, a covert negation NEG and an indefinite, which are unified in the process of the derivation.

Jacobs (1986: 134) proposes 'an (obligatory) amalgamation rule which says that NEG \textit{ein} is realized as \textit{kein}'. This rule of obligatory amalgamation of a negation and an adjacent indefinite can also be used to explain that \textit{nicht}, used as marker of sentential negation, cannot occur adjacent to indefinites, cf. (127a).\footnote{This holds only for \textit{nicht} conveying sentential negation. In its use as contrastive negation or what Schwarz and Bhatt (2006) call 'light' negation, \textit{nicht} can occur adjacent to indefinites. A thorough discussion of this phenomenon can be found in section 6.4.} In such cases the corresponding NI has to be used, cf. (127b).

\begin{equation}
\begin{align*}
&\text{(127) a. } \text{*Peter hat } \text{nicht } \{ \text{jemanden/etwas/einen Hund } \} \text{ gesehen.} \\
&\quad \text{Peter has NEG someone/something/a dog seen} \\
&\text{b. } \text{Peter hat } \{ \text{niemanden/nichts/keinen Hund } \} \text{ gesehen.} \\
&\quad \text{Peter has n-person/n-thing/n-DET dog seen} \\
&\quad \text{‘Peter didn’t see anyone/anything/a dog.’}
\end{align*}
\end{equation}

The question is how this amalgamation rule can be spelled out precisely. Before I turn to this issue, I first want to mention an analysis that is similar to Jacobs'. For the purpose of the following discussion, I will subsume both analyses under a common label.

Rullmann (1995a), following Klima (1964), proposes that NIs are formed by incorporation of sentential negation into an indefinite. According to Klima (1964), unincorporated NEG is realized as the negative marker, whereas incorporated NEG gives rise to phonological reflexes on the indefinite.\footnote{Klima (1964) does not only assume that NEG incorporates into indefinites but also into other DE quantifiers and adverbs, such as \textit{seldom} and \textit{rarely}. In the latter cases incorporation of NEG does not have phonological reflexes.} Assuming that incorporation of negation into indefinites is obligatory, it also follows that indefinites cannot occur adjacent to the negative marker.
Rullmann's analysis shares with Jacobs' the assumption that NIs consist of distinct elements at some level of the representation, which are unified into a single element at a later level of representation. The analyses might differ with respect to the representational level at which this unification occurs. Jacobs seems to envisage amalgamation as a kind of morphological or phonological process, while Klima's incorporation might be understood more as a syntactic process. I will discuss both possibilities, rephrasing them using a modern grammar model. For this purpose, I subsume both the Klima/Rullmann and the Jacobs style analysis under the common label 'incorporation'.

Let us start by exploring the assumption that incorporation takes place in the syntax. Using a concrete example, incorporation of negation in the indefinite *ein Arzt* ('a doctor') yields the structure in (128), where the abstract negation is part of the DP.

(128)

\[
\begin{array}{c}
\text{DP} \\
\text{NEG} \\
\text{DP} \\
\text{D} \\
ein \\
\text{NP} \\
\text{Arzt}
\end{array}
\]

The interesting question is how this incorporated structure is interpreted. Note that (128) does not correspond to an interpretable LF under standard assumptions about the meaning of negation. Adjoining sentential negation of type \(t, t\) to a quantifier of type \(\langle e, t \rangle, t\) results in a type clash, as shown in (129).

(129)

\[
\begin{array}{c}
\text{DP} \\
\text{NEG} \\
\langle t, t \rangle \\
\text{DP} \\
\langle e, t \rangle, t \\
\text{D} \\
\langle e, t \rangle, \langle e, t \rangle, t \\
ein \\
\text{NP} \\
\langle e, t \rangle \\
\text{Arzt}
\end{array}
\]

Footnote:

26 Both Klima (1964) and Jacobs (1980, 1982) stated their proposals at a time when D-structure was assumed to be the level serving as input to semantic interpretation. Under this assumption, NEG and the indefinite being base-generated in different positions is sufficient for the split reading.

27 Of course, instead of incorporating NEG into the whole DP, it could also be incorporated into the indefinite determiner only. This does not make a difference.
One way this type clash could be resolved is assuming negation to be subject to type shifting in the style of Partee and Rooth (1983). Type shifting derives from a basic propositional operator a family of operators applying to elements of various types ending in $t$. Type shifting derives the following meaning of $\text{NEG}_{DP}$ when it combines with a quantifier:

\[
(130) \quad \llbracket \text{NEG}_{DP} \rrbracket = \lambda w. Q(r, t, t) \cdot \lambda P(r, t) \cdot \llbracket \text{NEG} \rrbracket (Q(P))
\]

Employing this variant of negation, we get the DP structure (131), which is perfectly interpretable.

\[
(131)
\]

```
        DP
        <<e,t,t>>
          NEGD P
          <<e,t,t,<<e,t,t,t>>>  DP
          <<e,t,t>>
            D
            <<e,t,<<e,t,t,t>>> ein
            NP
            <<e,t,t>> Arzt
```

But in assuming the structure (131) we have in fact not gained anything. The complex DP with the incorporated negation is now equivalent to a negative quantifier. This is obvious when the meaning of the DP (131) is calculated.

\[
(132) \quad \llbracket \text{NEG}_{DP} \rrbracket (\llbracket \text{ein Arzt} \rrbracket) = \lambda w. \lambda P. \neg \exists x [x \text{ is a doctor in } w \& P(x)]
\]

We are back to square one. Even though we made the internal composition of the NI more complex, we are still not able to derive the split reading for sentences like (133).

\[
(133) \quad \text{Bei der Veranstaltung muss kein Arzt anwesend sein.}
\]

at the event must n-det doctor present be

'\text{It is not necessary that a doctor is present at the event.}'

So let us return to the structure (129) with the non-type-shifted version of NEG. Since NEG cannot be interpreted in the position where it is, we could try raising it to a position where it can be interpreted. As we have to move it anyway, we might as well raise it to a position above the modal, as this should give us the split reading for (133). This results in the LF (134).
In (134), movement of NEG has left behind a trace of type \( \langle t, t \rangle \). As a consequence, the problem with the type clash resurfaces. This time it is the trace that causes trouble, and there are two options to deal with it. The first is to simply eliminate the trace or assume that movement of NEG does not leave a trace in the first place. Another option to get rid of the type clash is assuming, as before, the type-shifted version \( \text{NEG}_{DP} \). Then \( \text{NEG}_{DP} \) is of type \( \langle \langle (e, t), t \rangle, \langle (e, t), t \rangle \rangle \) and so is its trace:

[(135)]
This LF will have the result—as the reader may verify for himself—that NEG is semantically reconstructed to the position of its trace, due to lambda-conversion. Again, the truth conditions derived correspond to a negative quantifier in the scope of a modal.

This reconstruction effect is not a result of using the type-shifted version of NEG but holds for propositional operators in general. This can be seen from the fact that it also arises for negation applying as usual to a proposition. Consider the following example, where negation is in the scope of the adverb *absichtlich* (‘intentionally’).

(136) ... weil er absichtlich nicht gekommen ist
    ... because he intentionally not come is
    ‘It was on purpose that he didn’t come.’

If we try to inverse scope relations by moving the negation across *intentionally*, we get the LF (137b), where the trace left by movement of the negation is of the same type, i.e. \( t, t \).

(137)  a. absichtlich [ nicht [ er gekommen ist]]
       b. nicht\(_t(t,t)\) \( A_t(t,t)\) absichtlich \(_t(t,t)\) [ er gekommen ist ]

The LF (137b) expresses exactly the same truth conditions as the LF (137a) without movement of the negation, as the reader may verify for himself. Lambda-conversion has the effect of making movement void, if the trace and the moved constituent have the same type. In the case of adverbials, the trace cannot have a different type. This is in fact a welcome result, as the scope of adverbials seems to be completely determined by surface order. Sentence (136) for instance does not have a reading with inverse scope, i.e. ‘it was not on purpose that he came’. It is thus generally assumed that adverbials do not move at LF.

The upshot of the discussion is the following. Assuming incorporation to take place in the syntax, its effects have to be undone at LF. However, movement of the negation only has an effect in the semantics if this movement does not leave an interpreted trace. This should make one suspicious about assuming that negation moves at LF, all the more so given that adverbials do not normally alter their scope at LF. Deriving the split reading by assuming that negation moves out of a DP to take higher scope is thus neither straightforward nor does it seem to be in line with general assumptions about the scope of adverbials. It is therefore not a good idea to assume incorporation to take place in the syntax.

This leaves the option that incorporation of negation applies after the point at which the derivation branches into LF and PF. Assuming that incorporation
applies in the PF component of grammar, negation and the indefinite are in independent positions at the level of LF. A framework that has been developed to accommodate such post-syntactic operations is Distributed Morphology (Halle and Marantz, 1993, 1994; Harley and Noyer, 1999). One of the core assumptions is that phonological expressions (Vocabulary Items) are inserted late in the derivation. The terminal nodes of the syntactic structure are complexes of syntactic and semantic features without phonological content. Morphological operations apply to them before Vocabulary Items are inserted into the terminal nodes. Insertion of a Vocabulary Item is possible if its features are a subset of the features at the terminal node. If there are several matching Vocabulary Items, usually the one with the most overlapping features is inserted. Within the framework of Distributed Morphology, incorporation of negation into an indefinite could be formulated as in the following rough sketch.

Neg-incorporation could be implemented as an instance of Morphological Merger (Marantz, 1984, 1988). As NIs constitute lexical units (rather than being formed by a process of affixation or cliticization), neg-incorporation has to take place before Vocabulary Items are inserted. The operation thus corresponds to lowering of the feature [neg] from the terminal node of sentential negation to the terminal node of a right-adjacent indefinite.\textsuperscript{28} This is schematically illustrated in (138).

(138) \[ \begin{array}{c}
\text{Neg} \\
\text{[neg]}
\end{array} \quad \xrightarrow{\text{incorporation}} \quad \begin{array}{c}
\text{XP} \\
\text{[indef]}
\end{array} \quad \begin{array}{c}
\text{XP} \\
\text{[neg][indef]}
\end{array} \]

At terminal nodes with the features [neg] and [indef], NIs are inserted, as they are specified both for [neg]- and [indef]-features. This is shown in (139) for the lexical entries of some German NIs.

(139) a. /niemand/: [neg] [indef] person
b. /kein/: [neg] [indef] DET

The fact that general indefinites cannot occur adjacent to a marker of sentential negation follows from the assumptions that neg-incorporation is

\textsuperscript{28} Assuming that neg-incorporation works the other way round, i.e. the feature [indef] is raised to the terminal node of an adjacent sentential negation, is ruled out by the fact that NIs are spelled out linearly after a preposition rather than before.
obligatory and the most highly specified matching Vocabulary Items have to be inserted.\textsuperscript{29}

An appealing feature of this analysis of NIs in the framework of Distributed Morphology is that the observed adjacency requirement finds a natural explanation. Linear adjacency is a core notion of the morpho-phonological component, and adjacency is a crucial prerequisite for Morphological Merger to apply (Marantz, 1988; Bobaljik, 1994). It also follows that phonologically unrealized elements like traces do not disrupt adjacency.

This strict adjacency requirement, however, turns out to be problematic. Recall that there are certain cases where NIs do not occur in a position immediately right-adjacent to a position a negative marker could occupy, namely inside PPs. The following example from (Jacobs, 1991: 595) illustrates this. (Note that (140) has a split reading and thus has to be accounted for by whatever mechanism is proposed to underlie scope splitting.)

\begin{itemize}
\item (140) Er wartet \text{[PP auf \textit{keinen Polizisten}].}
\item \text{He waits on n-DET policeman}
\item \text{‘He is not waiting for a policeman.’}
\end{itemize}

The syntactic structure of such cases is schematically shown in (141).

\begin{itemize}
\item (141)
\item \text{Neg [neg]}
\item \text{XP}
\item \text{PP}
\item \text{X}
\item \text{P}
\item \text{DP [indef]}
\end{itemize}

In this constellation, lowering of the [neg]-feature cannot apply, as the intervening preposition disrupts adjacency. As any phonologically realized material disrupts adjacency, Morphological Merger cannot apply across a preposition.

\textsuperscript{29} However, the phenomenon that general indefinites are excluded from positions where an NI could be used instead does not only occur in DN-languages like German but also in NC-languages (see section 6.4). As NIs in NC-languages do not stand in a one-to-one relation to semantic negation, NIs could not be derived via neg-incorporation. Thus, the exclusion of general indefinites in the context of sentential negation requires an independent explanation. The account I propose in section 6.4 builds on one aspect of Distributed Morphology, namely insertion of the Vocabulary Item matching in the greatest number of features, which blocks less specified matching Vocabulary Items from this position. Crucially, it does so without assuming a rule of neg-incorporation. The feature [neg] in the feature specification for NIs in (139) is not understood as contributing semantic negation but rather as requiring a context of sentential negation.
Defining neg-incorporation as an instance of Morphological Merger falsely predicts that NIs are unable to occur inside PPs.

The fact that NIs can occur PP-internally is a strong argument against analyses attributing the formation of NIs to processes in the morphophonological component (see also Jacobs, 1991). If, in contrast, the relation between sentential negation and NIs is defined in terms of the core syntax (Merge, Move, Agree), the possibility of NIs occurring inside PPs can be accommodated (see section 3.2.4). It is known that PPs exhibit certain peculiarities affecting syntactic operations, in particular Agree (see Bayer and Bader, 2007). If the licensing requirements of NIs are phrased in terms of Agree, the fact that NIs can occur inside PPs follows from the special syntactic status of PPs.

This section was concerned with accounts of split reading based on the assumption that NIs originate as two distinct elements that are united in the course of derivation. It was shown that such accounts face severe problems once they are spelled out in more detail. The conclusion is thus that NIs have to be analysed as lexical units at all levels of representation. Next I will discuss two accounts of split readings that make this assumption.

3.3.2 Quantification over abstract individuals

The accounts of scope splitting by Jacobs (1980, 1982, 1991) and Rullmann (1995a) assume that NIs are underlyingly complex and decompose them into a negation and an indefinite. Other accounts aim at deriving split readings while treating the NI as a semantic unit. There are two analyses, found in Geurts (1996) and de Swart (2000), that maintain the assumption that NIs are negative quantifiers and attribute the scope-splitting effect to special kinds of quantification.

Geurts (1996) proposes that the split reading with NIs arises when a negative quantifier ranges over kinds in the sense of Carlson (1977). Usually, quantification over kinds is triggered by certain predicates imposing the selectional restriction on an argument that it must denote a kind. Prime examples are predicates like be extinct and invent, as in the following examples from Carlson (1977, 438):

\begin{quote}
(142) a. Every featherless bird is now extinct.
   b. Many mechanical devices were invented by mistake.
\end{quote}

Geurts argues that quantification over kinds applies more often. While in most cases quantification over kinds goes unnoticed, it does have a semantic effect for negative quantifiers, yielding the split reading. To see how quantification over kinds results in the split reading, let us go through Geurts' analysis of Jacobs' example (143).
(143) /Alle Ärzte haben KEIN Auto.
all doctors have n-DAT car
'It is not the case that all doctors have a car.'

Starting from LF (144a), in which the negative quantifier takes wide scope with respect to the universal quantifier, the truth conditions are (144b).

(144) a. kein Auto λ1 [ alle Ärzte haben 1 ]
    b. λw. ¬∃y ∈ DQ y is a car in w & ∀x[ x is a doctor in w →
       x owns y in w ]]

Geurts argues that what (144b) expresses precisely crucially depends on what
the domain of quantification (DQ) corresponds to. If the negative quantifier
ranges over concrete individuals, i.e. DQ ⊆ Dc, the resulting reading is pragmatically implausible because cars are usually not owned by several persons.
But Geurts (1996) argues that the split reading results if the negative quantifier
ranges over kinds. More concretely, Geurts (1996) assumes that the domain of
the negative quantifier in (144b) corresponds to the singleton set containing
the kind-level individual car, i.e. DQ = {car}.

Two further assumptions are required in order for (144b) to express the split
reading: first, the abstract individual has to exist and be in the extension of the
the corresponding predicate. For our example, it has to be assumed that car is in
the extension of the predicate car. Second, the predicate of which the NI is in
an argument must be a projecting property, as defined in (145), where x is a
variable over concrete individuals, u is a variable over kinds, and x ≤ u means
that the individual x is a realization of the kind u (see Carlson, 1977).

(145) P is a projecting property iff: ∀u[∃x | x ≤ u & P(x)] → P(u)

If a property P is projecting, it follows from the existence of a concrete
individual which realizes a kind-level individual a and has the property P that
P also holds of a. For instance, assuming that own is a projecting property, the
fact that Peter owns a concrete car implies that Peter owns the kind car. I will
not go into the question whether these prerequisite assumptions are plausible
under the notion of kinds as proposed by Carlson (1977). Let us instead con-
tinue with Geurts’ derivation of the split reading. Under the assumption that
the negative quantifier ranges over the singleton set containing the abstract
individual car, (146a) is equivalent to (146b):

(146) a. λw. ¬∃y[ y is a car in w & ∀x[ x is a doctor in w →
       x owns y in w ]]
    b. λw. ¬∀x[ x is a doctor in w → x owns car in w ]

The assumption that the negative quantifier ranges over a singleton set renders
the existential quantifier contained in it inert, such that it only contributes
negation. Existential quantification over individuals comes in via the definition of a projecting property: in order for a property \( P \) to hold of an abstract individual \( a \), there must exist a concrete individual \( x \) such that \( x \) is a realization of \( a \) and \( P(x) \) holds. Put differently, if (147a) were true, then (146b) would be false. Thus, (146b) entails the negation of (147a), (147b), which corresponds to the split reading.

\[
(147) \quad \text{a. } \lambda w. \forall x [ x \text{ is a doctor in } w \rightarrow \exists y[ y \text{ is a car in } w \& y \leq \text{ car } \& x \text{ owns } y \text{ in } w ]] \\
\text{b. } \lambda w. \neg \forall x [ x \text{ is a doctor in } w \rightarrow \exists y[ y \text{ is a car in } w \& y \leq \text{ car } \& x \text{ owns } y \text{ in } w ]]
\]

Geurts’ analysis is able to derive truth conditions which correspond to the split reading. There are, however, a number of problematic aspects. First, the split reading arising with universal quantifiers is a rather restricted phenomenon. As discussed earlier, this reading is available only in the context of topic-focus accent. There is nothing in Geurts’ analysis restricting quantification over kinds to certain syntactic or information structural configurations. One would thus expect this option to be generally available. But in the vast majority of cases where an NI and a universal quantifier co-occur, the split reading does not arise. For example, Geurts’ reasoning regarding (143) should apply in the very same way to the variant without topic-focus accent in (148). Both sentences are associated with the truth conditions (144b), from which the split reading can be derived via quantification over kinds. This is, however, not a possible reading of sentence (148). The only available reading is the pragmatically implausible reading (148a).

\[
(148) \quad \ldots \text{dass kei} \text{n Auto alle Ärzte besitzen} \\
\ldots \text{that n-det car all doctors own}
\]

\[
\begin{align*}
\text{a. } & \text{‘There is no car which all doctors own.’} \quad \neg > \exists > \forall \\
\text{b. } & \text{‘It is not the case that all doctors own a car.’} \quad \neg > \forall > \exists
\end{align*}
\]

Therefore, Geurts’ analysis of the split reading overgenerates. It is based on a mechanism that is generally available and does not account for the fact that certain configurations are required in order for the split reading to arise with respect to universal quantifiers.

Other problematic cases concern split readings caused by NIs that are part of an idiomatic expression, as in (149).

\[
(149) \quad \text{Mir kannst du keinen Bären aufbinden.} \\
\quad \text{me can you n-det bear on-tie} \\
\quad \text{‘You cannot fool me.’}
\]

In order to derive the split reading under Geurts’ analysis, \textit{kein} would have to quantify over the kind \textit{bear}. This is incompatible with the idiomatic meaning
of jemandem einen Bären aufbinden (literally: ‘tie a bear onto someone’), which roughly corresponds to ‘fool someone’.

A similar problem arises in cases like (150), where the negative determiner combines with a measure phrase. In such cases, kein does not quantify over individuals at all and, consequently, it cannot be assumed that the split reading is due to quantification over abstract individuals.

(150) Der Koffer darf keine zwanzig Kilo wiegen.
the suitcase may not twenty kilograms weigh
‘The suitcase is not allowed to weigh twenty kilograms.’

In sum, the analysis of Geurts (1996) faces a number of empirical problems, which make it doubtful that it provides the solution to the scope-splitting puzzle of NIs.

3.3.3 Quantification over higher types

Another proposal to deal with split readings of NIs is offered by de Swart (2000). Rather than assuming quantification over abstract individuals, as Geurts (1996) does, de Swart (2000) uses quantification over higher semantic types to derive the split reading. She argues that split readings arise when NIs are interpreted as negative quantifiers over properties. Quantifiers are assumed to be generally ambiguous between the normal interpretation in terms of quantification over individuals and a higher-order interpretation in terms of quantification over properties. For upward monotone quantifiers, the result of higher-order quantification usually reduces to a reading that is also derived via quantification over lower types. But for downward monotone quantifiers, in particular NIs, quantification over properties yields the split reading.

De Swart (2000: 122) gives the following higher-order translation for the DP kein Buch (‘no book’):

\[ (151) \quad \text{[kein}_2 \text{ Buch]} = \lambda w. \lambda Q_{\langle s, \langle e, t \rangle \rangle, e}. \neg \exists P_{\langle s, \langle e, t \rangle \rangle} [(P = \lambda w'. \lambda x. x \text{ is a book in } w') \land Q(P)] \]

Given this, the following lexical entry for the higher-type determiner kein can be inferred:

\[ (152) \quad \text{[kein}_2 \text{]} = \lambda w. \lambda P_{\langle s, \langle e, t \rangle \rangle, e}. \lambda Q_{\langle s, \langle e, t \rangle \rangle, e}. \neg \exists P'_{\langle s, \langle e, t \rangle \rangle} [P' = P \land Q(P')] \]

Note that the existential quantifier in (152) actually does not do anything, and (152) can be rewritten more transparently as (153). Presumably, the lexical entry in (152) is supposed to resemble the meaning standardly assigned to NIs, namely negated existential quantification. But the higher-order translation of NIs boils down to just negation, as is evident in (153).
\[(\text{153}) \quad \llbracket \text{kein}_2 \rrbracket = \lambda w. \lambda P_{(s,(e,t))}. \lambda Q_{(s,(e,t))}. t. \neg Q(P)\]

It is also obvious from (153) that the option of other material taking scope in between the negation and the restrictor predicate is explicitly built into the lexical entry. With this meaning for \textit{kein}, it is thus possible to derive the split reading for cases such as (154), where an NI is embedded under an intensional verb like \textit{suchen}.

\[(\text{154}) \quad \text{Peter sucht kein Einhorn.}\]
\quad \text{Peter seeks n-det unicorn}

\[\begin{align*}
\text{a. } & \text{‘Peter doesn’t try to find a unicorn.’} \\
\text{b. } & \text{‘There is no unicorn Peter is trying to find.’}
\end{align*}\]

The lexical entry for \textit{suchen} (‘seek’) under the analysis of Zimmermann (1993), according to which its first argument corresponds to an intensional property, is repeated in (155):

\[(\text{155}) \quad \llbracket \text{suchen} \rrbracket = \lambda w. \lambda P_{(s,(e,t))}. \lambda y. \forall w'[\text{Acc}_{y,w}(w') \rightarrow \exists x[ P(w')(x) \& x \text{ finds } x \text{ in } w']\]

With this, truth conditions corresponding to the split reading are derived from the LF (156), in which the higher-type quantifier takes wide scope, as shown in (157).

\[(\text{156}) \quad [\text{kein}_2 \text{ Einhorn } [\lambda 1_{(s,(e,t))}. \text{Peter 1 sucht }]]\]

\[(\text{157}) \quad [\text{(156)}] = [\text{kein}_2 \text{ Einhorn } ] ( [\lambda 1 \text{ Peter 1 sucht }])\]
\[= \lambda w. \lambda Q_{(s,(e,t))}. t. \neg Q(\lambda w'. \lambda x. x \text{ is a unicorn in } w')( [\lambda 1 \text{ Peter 1 sucht }])\]
\[= \lambda w. \neg [\lambda 1 \text{ Peter 1 sucht } ](\lambda w'. \lambda x. x \text{ is a unicorn in } w')\]
\[= \lambda w. \neg \forall w'[\text{Acc}_{\text{Peter},w}(w') \rightarrow \exists x[ x \text{ is a unicorn in } w' \& \text{ Peter finds } x \text{ in } w']\]

The higher-order translation for \textit{kein} results in the split reading for \textit{kein}-phrases embedded under intensional transitive verbs, if Zimmermann’s analysis is adopted and these verbs are assumed to take properties as arguments. But it is not straightforwardly applicable to other cases in which a \textit{kein}-phrase occurs in a position where an individual is required rather than a property. Following ideas by van Geenhoven (1998), de Swart (2000) assumes that in cases where a property denoting DP is the object of a predicate over individuals, existential closure applies in the scope of the predicate. The details of this need not concern us here, so let us simply assume that, for each predicate over individuals, there is a second lexical entry as relation between individuals and properties in which existential quantification is built in. This is exemplified in (158) for the verb \textit{entlassen} (‘dismiss’).
Negation Indefinites

(158) \[ \text{entlassen}_2 = \lambda w. \lambda P \langle(s, (r,t)) \rangle . \lambda x. \exists y [ P(w)(y) \land x \text{ dismisses } y \text{ in } w ] \]

Assuming the translation in (158) for the verb \textit{entlassen} ('dismiss') and the higher-order translation for \textit{kein}, it is possible to derive the split reading for (159). From the LF (160), where \textit{keine Angestellten} ('no employees') takes wide scope, the truth conditions (161) are derived.

(159) Die Firma muss \textbf{keine Angestellten} entlassen.
the company must \textbf{n-det} employees dismiss
'The company doesn't have to dismiss (any) employees.'

(160) \[ \text{keine}_2 \text{ Angestellten} [\lambda i_{(s, (r,t))} \text{ muss } (\text{die Firma } 1 \text{ entlassen}_2)] \]

(161) \[
\begin{align*}
\lambda w. \lambda Q. \neg Q(\lambda w'. \lambda x. x \text{ are employees in } w') \\
(\lambda i_1 [\text{muss } (\text{die Firma } 1 \text{ entlassen}_2)]) \\
\lambda w. \neg (\lambda i_1 [\text{muss } (\text{die Firma } 1 \text{ entlassen}_2)]) \\
(\lambda w'. \lambda x. x \text{ are employees in } w') \\
\lambda w. \neg \forall w' \in \text{Acc} \langle w \rangle : \exists x [x \text{ are employees in } w' \land \text{the company disorses } x \text{ in } w']
\end{align*}
\]

Cases where a universal quantifier takes scope in between the negative and the indefinite part of a \textit{kein}-phrase are derived in a similar way, as shown for (162).

(162) \text{\textsc{Alle} Studenten haben \textbf{KEIN Auto}.
all students have \textbf{n-det} car
'It is not the case that all students have a car.'

(163) a. \textbf{keine}_2 \textbf{ Auto } \lambda i_{(s, (r,t))} [\text{alle Studenten } 1 \text{ haben}_2]
\[ \lambda w. \lambda Q. \neg Q(\lambda w'. \lambda x. x \text{ is a car in } w') \\
(\lambda i_1 [\text{alle Studenten } 1 \text{ haben}_2]) \\
\lambda w. \neg (\lambda i_1 [\text{alle Studenten } 1 \text{ haben}_2]) (\lambda w'. \lambda x. x \text{ is a car in } w') \\
\lambda w. \neg \forall x [x \text{ is a student in } w \rightarrow \exists y [y \text{ is a car in } w \land x \text{ has } y \text{ in } w]]
\]

De Swart (2000) observes that split readings do not only arise with NIs but also with other downward-entailing quantifiers, such as \textit{at most two}. Possible readings of example (164) (from Zimmermann, 1993) are the split reading (164a) and the wide scope de re reading (164b). A reading where \textit{at most two blankets} has narrow scope with respect to the transitive intensional verb \textit{need}, cf. (164c), is not available.\(^{30}\)

\(^{30}\) The reading paraphrased as (164c) is the reading derived by Montague's analysis of \textit{seek}, where its first argument is a quantifier intension. Under the analysis of Zimmermann (1993)—which de Swart
(164) Tom needs at most two blankets.
   a. 'Tom doesn't need more than two blankets.'
   b. 'There are at most two blankets Tom needs to have.'
   c. "Tom needs to have at most two blankets.'

The analysis of split readings in terms of quantification over properties can
be extended to other DE-quantifiers, such as ones involving at most. De Swart
proposes that, along with the usual semantics of at most two yielding a
generalized quantifier, cf. (165a), the translation (165b) involving higher types is also
available.

\[
\begin{align*}
\text{a. } & \llbracket \text{at most two} \rrbracket = \lambda w. \lambda P_{(e,t), \lambda R_{(e,t)}} \neg \exists x \mid |x| > 2 \& P(x) \& R(x) \\
\text{b. } & \llbracket \text{at most two} \rrbracket = \lambda w. \lambda P_{(s,(e,t)), \lambda Q_{(s,(e,t))}} \neg \exists x P'_{(s,(e,t))} [P' = \\
& (\lambda w' \lambda x. |x| > 2 \& P(x)(w')) \& Q(P')] \\
\end{align*}
\]

Again, (165b) can be rewritten more transparently as (166):

\[
\begin{align*}
\text{a. } & \llbracket \text{at most two} \rrbracket = \\
& \lambda w. \lambda P_{(s,(e,t))} \lambda Q_{(s,(e,t)), t)} \neg Q(\lambda w' \lambda x. |x| > 2 \& P(x)(w')) \\
\end{align*}
\]

Using the higher-order translation of at most two, the split reading (164a) is
derived in the by now familiar way from the wide-scope LF:

\[
\begin{align*}
\text{a. } & \llbracket \text{at most two blankets} \lambda_{(s,(e,t))} \mid \text{Tom needs} \rrbracket \\
& \lambda w. \neg \forall w' [\text{Acc}_{Tom,w}(w') \rightarrow \exists x \mid |x| > 2 \& x \text{ are blankets in } w' \\
& \& \text{Tom has } x \text{ in } w'] \\
\end{align*}
\]

De Swart argues that it is precisely the class of downward monotonic quanti-
tifiers that yields split readings because these quantifiers express a claim about
the maximal cardinality of a set. As this maximality condition is expressed in
the form of a negative claim about the existence of sets with greater cardinality,
their lexical entry involves negation. According to de Swart's proposal, DE-
quantifiers are parameterized negative quantifiers. While ordinary negative
quantifiers negate the existence of a set of any cardinality, DE-quantifiers are
parameterized for the cardinality.

However, de Swart's analysis turns out to be both too weak and too strong.
On the one hand it cannot generate attested readings, and on the other hand
it generates readings that are not possible.

(2000) adopts---the quantifier at most two blankets has to be type-shifted by Partee's (1987) BE if it takes
narrow scope. This yields truth conditions that can be paraphrased as 'in all worlds in which Tom has
what he needs in the actual world, he has something which does not have the property of being a set
of two blankets.' The difference to (164c) is that Tom's needs are met even if he has more than two
blankets, as long he has something else.
De Swart points out that her analysis does not generate intermediate scope readings. This means that in cases involving more than one scope-bearing element besides the negative quantifier, the restrictor predicate has to take narrowest scope if the reading is split. This is because the property serving as restrictor for the negative quantifier in the higher-order translation can only be interpreted as the argument of a lexical predicate, e.g. seek or dismiss. Predicates derived by QR cannot be applied to properties. De Swart (2000) considers this a welcome consequence of her analysis and claims that the split reading goes with the de dicto interpretation of the restrictor predicate. De Swart (2000: 177) discusses the following Dutch example and claims that it does not have the reading paraphrased as (170).

(169) Iedereen zoekt geen boek van Chomsky. (Dutch)
everyone seeks n-det book by Chomsky

(170) It is not the case that everyone is seeking a particular book by Chomsky.

However, the German equivalent of (169)—with the intonation pattern of topic-focus accent—does have the reading (170). That kein-DPs can be interpreted de re even if the negation takes scope above another operator is further confirmed by the following examples.

(171) Maria kann keinen Norweger heiraten wollen. Sie
Maria can n-det Norwegian marry want. She
kennt überhaupt keinen Norweger.
knows at-all n-det Norwegian
'It is not possible that Maria wants to marry a Norwegian. She doesn’t know any Norwegian at all.'

(172) /Ede von uns will KEinen\ Norweger
every.nom of us wants n-det.acc Norwegian
heiraten. Marias Verlobter ist Schwede.
marry. Maria’s fiancee is Swede.
'Not each of us wants to marry a Norwegian. Maria’s fiancee is a Swede.'

31 Take for instance example (169) discussed below. To derive the split de re reading, the DP geen boek van Chomsky ('no book by Chomsky') would have to be QR-ed across the intensional verb zoekt ('seek'), as shown in (i).

(i) iedereen λ₁ [ geen boek van Chomsky [a λ₂ [ 1 zoekt a₀ ]]]

Since the node labelled as a is derived by QR and thus of type (e, t), the negative quantifier has to be a quantifier over individuals (of type (i(e, t), t)), in order to combine with a. The negative quantifier can therefore not receive the higher-order translation (which requires a sister node of type ((e, t), t)), from which the split reading could be derived by raising it across the universal subject.
If the split _de re_ interpretation were not available, the sentences should be odd with the given continuations, as they only make sense if the property of being a Norwegian is interpreted _de re_ with respect to the intensional verb _wollen_ (‘want’). But the discourses in (171) and (172) are unobjectionable, which goes to show that the _de re_ reading is available.

Another problem for de Swart’s analysis are split readings arising with _kein_-phrases that are part of idiomatic expressions, as in (173).

\[(173)\] Du darfst ihm **kein** Haar krümmen.
‘You may him **n-def** hair bend
‘You are not allowed to inflict any harm upon him.’

Recall that de Swart derives the split reading from an LF in which the _kein_-phrase takes wide scope with respect to the modal. If it is assumed that idioms have to be interpreted en bloc, the idiomatic meaning cannot be derived if the NI is given wide scope and separated from the rest of the idiom. Consequently, de Swart’s analysis cannot generate readings which are empirically attested.

Regarding the generation of unattested readings, the first problem is that a narrow-scope reading of NIs under intensional transitive verbs (and other property-taking verbs) is predicted. For the unicorn example (154), this reading is paraphrased as ‘Peter is trying to find something which is not a unicorn’. De Swart (2000: 113) remarks that in such cases ‘it may be a bit hard to get the _de dicto_ reading’, but this reading is in fact not possible at all.\(^3\) If it is assumed that the type shifter BE applies to quantifiers to derive properties, there is no way to prevent the narrow-scope reading of NIs, in which a negative quantifier is embedded under a property-taking verb. In contrast, assuming (with Zimmermann, 1993) that indefinites denote properties rather than quantifiers, or maybe that indefinites are ambiguous between properties and quantifiers, the narrow-scope reading of an NI is not generated in the first place. For ‘strong’ quantifiers like _every_ and _most_, assuming BE does not derive unattested readings because applying BE does not yield non-empty denotations. But for negative quantifiers it does make a difference whether type-shifting by BE is an option or not. To be sure, it is not crucial for de Swart’s account that BE is available. If shifting quantifiers to properties is not an option, the absence of the narrow-scope reading follows. Then the type mismatch arising from a negative quantifier serving as the argument of a property-taking verb can be resolved in two ways: either the NI is interpreted as a quantifier over individuals and given wide scope, which results in the _de_

\(^3\) Neither is the reading available which is actually derived under the analysis of Zimmermann (1993), cf. footnote 30.
re reading, or the NI is interpreted as a quantifier over properties, which also has to take wide scope and yields the split reading.

A second problem arises from the assumption that the higher-type translation is generally available. In principle, this derives split readings in all kinds of environments and leads to overgeneration, as split readings arise only in a limited set of contexts. In order to avoid this, application of the higher-type translation has to be restricted heavily. De Swart (2000) argues that the availability of split readings is linked to the availability of QR. Under her analysis, it is crucial for the derivation of the split reading that the higher-order quantifier is raised across the operator in the scope of negation. If a higher-order quantifier is prohibited to QR across a certain operator, the split reading will not be derived. To this end, de Swart assumes that movement of DE-quantifiers different from NIs is restricted to intensional verbs and cannot cross other nominal quantifiers. But, even for NIs, scope splitting with respect to universal quantifiers arises only in certain circumstances, i.e. under topic-focus accent (end even then not always).

This leaves us with de Swart's observation that scope splitting does not only arise with NIs but also with other DE-quantifiers. This issue deserves in-depth discussion and will be taken up in the next chapter, which is exclusively dedicated to split readings arising with other DE-quantifiers.

3.4 Summary

The topic of this chapter was scope splitting with NIs where another semantic operator takes scope in between the negative and the indefinite meaning component of NIs. Rather than assuming that this phenomenon calls for a special analysis, as other accounts do, scope splitting has been related to the phenomenon of negative concord and argued to be due to one and the same underlying fact: NIs are semantically non-negative indefinites that have to be licensed by a semantic negation. Accordingly, the analysis that was proposed for NIs in NC-languages in the previous chapter was extended to German. To explain the diverging behaviour NIs show with respect to negation, it was proposed that NIs in DN-languages can only be licensed by a covert negation under surface adjacency. This analysis explains why scope-splitting arises precisely in the contexts in which it does. The negation associated with NIs always c-commands the verb, giving rise to the scope splitting phenomenon if the verb is intensional. Split scope with respect to nominal and adverbial quantifiers arises if the quantifier is reconstructed at LF into its base position in between an NI and the licensing negation.
Scope Splitting with Other Downward-Entailing Quantifiers

4.1 Background

De Swart (2000) observes that the phenomenon of scope splitting in intensional contexts is not restricted to NIs but rather arises with monotone-decreasing quantifiers in general. She gives the following examples, which have a split reading as paraphrased:

(1) Tom needs at most two blankets.
   'Tom doesn't need more than two blankets.'

(2) A Muslim can marry at most four women.
   'A Muslim cannot marry more than four women.'

(3) Ze hoeven weinig verpleegkundigen te ontslaan. (Dutch)
    they need few nurses to fire
   'It is not necessary for them to fire more than a small number of nurses.'

To at most and few two more expressions can be added which give rise to split readings. First, quantifiers made up of fewer than lead to a split reading as paraphrased in the following example (Hackl, 2000: 208a)

(4) At MIT one needs to publish fewer than three books in order to get tenure.
   'At MIT one doesn't need to publish more than two books in order to get tenure.'

Second, DPs modified by only also lead to split readings.\(^1\) In fact, it was already argued by Bech (1955/57, §80), who first observed that NIs in German give

\(^1\) Not only do DPs involving only allow a split reading but only modifying any category yields a split reading in combination with an intensional verb.

(5) This year, we can only dream of a white Christmas.
   'This year, we can't do anything other about a white Christmas than dream of it.'
re reading, or the NI is interpreted as a quantifier over properties, which also has to take wide scope and yields the split reading.

A second problem arises from the assumption that the higher-type translation is generally available. In principle, this derives split readings in all kinds of environments and leads to overgeneration, as split readings arise only in a limited set of contexts. In order to avoid this, application of the higher-type translation has to be restricted heavily. De Swart (2000) argues that the availability of split readings is linked to the availability of QR. Under her analysis, it is crucial for the derivation of the split reading that the higher-order quantifier is raised across the operator in the scope of negation. If a higher-order quantifier is prohibited to QR across a certain operator, the split reading will not be derived. To this end, de Swart assumes that movement of DE-quantifiers different from NIs is restricted to intensional verbs and cannot cross other nominal quantifiers. But, even for NIs, scope splitting with respect to universal quantifiers arises only in certain circumstances, i.e. under topic-focus accent (end even then not always).

This leaves us with de Swart’s observation that scope splitting does not only arise with NIs but also with other DE-quantifiers. This issue deserves in-depth discussion and will be taken up in the next chapter, which is exclusively dedicated to split readings arising with other DE-quantifiers.

### 3.4 Summary

The topic of this chapter was scope splitting with NIs where another semantic operator takes scope in between the negative and the indefinite meaning component of NIs. Rather than assuming that this phenomenon calls for a special analysis, as other accounts do, scope splitting has been related to the phenomenon of negative concord and argued to be due to one and the same underlying fact: NIs are semantically non-negative indefinites that have to be licensed by a semantic negation. Accordingly, the analysis that was proposed for NIs in NC-languages in the previous chapter was extended to German. To explain the diverging behaviour NIs show with respect to negation, it was proposed that NIs in DN-languages can only be licensed by a covert negation under surface adjacency. This analysis explains why scope-splitting arises precisely in the contexts in which it does. The negation associated with NIs always c-commands the verb, giving rise to the scope splitting phenomenon if the verb is intensional. Split scope with respect to nominal and adverbal quantifiers arises if the quantifier is reconstructed at LF into its base position in between an NI and the licensing negation.
Scope Splitting with Other Downward-Entailing Quantifiers

4.1 Background

De Swart (2000) observes that the phenomenon of scope splitting in intensional contexts is not restricted to NIs but rather arises with monotone-decreasing quantifiers in general. She gives the following examples, which have a split reading as paraphrased:

(1) Tom needs **at most two blankets**.
    ‘Tom doesn’t need more than two blankets.’

(2) A Muslim can marry **at most four women**.
    ‘A Muslim cannot marry more than four women.’

(3) Ze hoeven **weinig verpleegkundigen** te ontslaan. (Dutch)
    ‘It is not necessary for them to fire more than a small number of nurses.’

To **at most** and **few** two more expressions can be added which give rise to split readings. First, quantifiers made up of **fewer than** lead to a split reading as paraphrased in the following example (Hackl, 2000: 208a)

(4) At MIT one needs to publish **fewer than three books** in order to get tenure.
    ‘At MIT one doesn’t need to publish more than two books in order to get tenure.’

Second, DPs modified by **only** also lead to split readings.¹ In fact, it was already argued by Bech (1955/57, §80), who first observed that NIs in German give

¹ Not only do DPs involving **only** allow a split reading but **only** modifying any category yields a split reading in combination with an intensional verb.

(i) This year, we can **only** dream of a white Christmas.
    ‘This year, we can’t do anything other than dream of it.’
rise to split readings, that German nur (‘only’) has to be decomposed into not and more than. Bech (1955/57: 78) gives the following example that has a split reading as paraphrased.

(5) Er konnte nur die Hälfte verstehen.
   he could only the half understand
   ‘He couldn’t understand more than half of it.’

Surely, one would not want to decompose all these expressions into a negation and some other component along the following lines:

(6)   a. at most \( n = not + more \ than \ n \)
   b. few = not + many
   c. fewer/less than \( n = not + as\ many \ as \ n \)
   d. only \( n = not + more \ than \ n \)

For one thing, the decompositions involved would not be morphologically transparent. Furthermore, as de Swart (2000) points out, split readings with monotone-increasing DPs, e.g. involving at least, are not available:

(7)  A Muslim can marry at least three women.
     ≠ A Muslim cannot marry less than three women.

Assuming that split readings are due to lexical decomposition, one would not expect this option to be available for monotone-decreasing quantifiers but not for monotone-increasing ones. De Swart (2000) thus takes the fact that it is precisely the class of monotone-decreasing quantifiers that allows split readings as a crucial argument for a semantic analysis of scope splitting.

It is, however, important to note a difference between scope splitting with NIs and scope splitting with the quantifiers discussed here. The latter is more restricted as split readings for DE-quantifiers only arise under intensional verbs. Scope splitting with respect to universal quantifiers is not possible, even in a construction with topic–focus accent in German, where NIs yield a split reading:

(8)  ?? /JEDER Student hat \( \left\{ \begin{array}{l}
                HÖCH\stens \\
                WENIGER\ als \\
                NUR\ 
                \end{array} \right. \) drei Bücher.

I focus on DPs involving only because they have been assumed to be generalized quantifiers and thus fit into the discussion of DE-quantifiers. The scope of only-DPs is a downward-entailing environment if the notion of Strawson entailment is employed, i.e. entailment that holds provided the presuppositions of the conclusion are fulfilled (see von Fintel, 1999). The analysis of scope splitting with only presented in the next section builds on the more general analysis of Rooth (1985, 1992) and carries over to only modifying any category.
every student has \( \frac{\text{at most}}{\text{less than}} \) three books

'Not every student has more than/as many as three books.'

This difference might be taken as indication that scope splitting with DE-quantifiers is a phenomenon different from scope splitting with NIs.

In the following, I will discuss each of the expressions above in turn and show that their giving rise to split readings actually follows from their semantics, once a more sophisticated analysis is employed than generalized quantifier theory offers. No additional machinery is needed to account for split readings.

### 4.2 Only

Let us start with split readings arising with \emph{only}. While \emph{only} combining with DP has sometimes been classified as a generalized quantifier, DP is not the only category \emph{only} can modify. To account for the full range of uses, \emph{only} is analysed as a focus-sensitive operator, i.e. as a propositional operator that takes as an additional argument an alternative set \( C \) consisting of propositions in which the focused constituent is replaced by entities of the same semantic type (cf. Roos, 1985). Under these assumptions, the meaning of \emph{only} is the following (see among others von Fintel, 1997):\(^2\)

\[
\llbracket \text{only}_C \rrbracket = \lambda w. \lambda p_{(s,t)} : p(w). \forall q \in C [ p \not\subseteq q \rightarrow q(w) = 0 ]
\]

This means that \emph{only} applies to a proposition \( p \) and states that every proposition in the alternative set not entailed by \( p \) is false. In addition, it is presupposed that \( p \) is true.\(^3\)

So let us see what meaning we get under this semantics of \emph{only} for the example from Bech (1955/57), repeated below.

(10) Er konnte nur die Hälfte verstehen. \[\neg\]

he could only the half understand

'He could understand only half (of it).'

In this case, the focus of \emph{nur} ('\emph{only}') is \emph{die Hälfte} ('\emph{half}'). The alternatives to the focused constituent are given by expressions like the following:

\(^2\) I use the notation of Heim and Kratzer (1998), where presuppositions associated with a lexical item are enclosed between ': ' and ':' in the meaning rule.

\(^3\) The precise content of the presupposition triggered by \emph{only} is under debate. In fact, it is not even agreed on it having the status of a presupposition. For discussion, see Horn (1996) and the references cited there.
one quarter, one third, half, two thirds, three quarters, the entire

Let us assume that only takes scope above the modal, as in the LF (12). The alternative set $C$ on which only operates corresponds to the set in (13).

(12) \[ \text{only}_C \left[ \text{he could} \left[ \text{PRO understand} \left( \text{half} \right) \right] \right] \]

(13) \{that he could understand one quarter, that he could understand one third, that he could understand half, that he could understand two thirds, that he could understand three quarters, that he could understand the entire\}

The semantics of only given in (9) requires every proposition in the alternative set not entailed by ‘that he could understand half’ to be false. Now, the propositions in the alternative set (13) that are not entailed by ‘that he could understand half’ are the ones involving a value higher than ‘half’, e.g. two thirds or three quarters. Thus, the truth conditions expressed by the LF (12) require that every proposition of the form ‘that he could understand $X$’ be false, if $X$ corresponds to a value higher than ‘half’. This is tantamount to saying that he could not understand more than half, which is the paraphrase of the split reading. The split reading arising with only thus corresponds to the truth conditions derived under the standard semantics of only, if only is assumed to take wide scope with respect to the modal while its focus takes narrow scope.\footnote{The wish to analyse Béch's original sentence is, as a matter of fact, not the only reason for me choosing a German example. For German, Büning and Hartmann (2001) argue that nur ('only') is an adsentential that adjoins exclusively to verbal projections. Because of the OV word order of German, nur in the middle field can always be assumed to be in a position in which it c-commands the position where the finite verb is interpreted. Thus, for the variant of Béch's sentence (i) with embedded word order, both of the surface structures in (ii) are possible:}

(i) \ldots er nur die Hälfte verstehen konnte

\ldots he only the half understand could

(ii) a. \ldots [VP er [[VP nur [VP PRO die Hälfte verstehen ]] konnte ]]\n
b. \ldots [VP er [[VP nur [[VP PRO die Hälfte verstehen ] konnte ]] ]]

The truth conditions expressed by (ii b) correspond to the split reading and were derived above. The truth conditions expressed by (ii-a) can be paraphrased as 'it was possible for him that he only understood half'. This reading is only marginally available for (i), which suggests that the scope preferences for modals with respect to only are similar to the ones observed for modals and negation.

For English, however, it has been argued by Von Stechow (1991) that only can form a constituent with a DP, which is interpreted as a complex quantifier. This is suggested by examples such as the following sentences from Taglicht (1984):

(iii) a. They were only advised to learn Spanish.

b. They were advised to learn only Spanish.

Sentence (iii-a) has one reading according to which they got only one piece of advice, namely ‘Learn Spanish!’; (iii-b) on the other hand is ambiguous between that reading and one that can be paraphrased as ‘they were advised that they learn no other language than Spanish’. Von Stechow (1991: 809f.) argues
The fact that Bech (1955/57) argued for the necessity of a decompositional analysis of German *nur* ('only'), while the availability of split readings in fact follows from an independently motivated semantics of *only*,\(^5\) shows that one should be suspicious about employing special mechanisms to derive split readings before the semantics of the expressions involved has been looked into carefully. I will pursue the same line of reasoning for the other expressions exhibiting split-scope effects.

### 4.3 Fewer/less than

The fact that DPs made up of *fewer than n* or *less than n* give rise to split readings, as in examples like (14), is puzzling for an analysis treating these expressions as generalized quantifiers.

---

that, in order to derive the first reading of (iii-b), it has to be assumed that *only* and the DP *Spanish* form a complex quantifier which can undergo QR to a position above the verb *advised*, as shown in (iv).

(iv) \[\text{[only Spanish]} \lambda_i \text{[they were advised to learn 1]}\]

If English indeed requires an analysis in which *only* takes scope above intensional verbs by virtue of QR of a complex quantifier *only DP*, it is not possible to derive the split reading for a sentence such as the following:

(v) Students are required to answer only two questions (from the ten or more presented).

'Students are not required to answer more than two questions.'

If *only two questions* has to raise above the finite verb for *only* to outscope *required*, only the de re reading can be derived, but not the split reading as paraphrased in (v).

The problem of deriving split readings with *only* in English seems to be related to the challenge English poses to the analysis of NIs (see the discussion in section 5.4). Hopefully, both will be accounted for under a more adequate syntactic analysis of English, which is, however, well beyond the scope of the present study.

\(^5\) Von Fintel and Iatridou (2007) argue that a decompositional analysis of *only* is required, after all, to deal with so-called modal sufficiency constructions. They discuss the following sentence:

(i) You only have to go to the North End to get good cheese.

What (i) means is that it is sufficient to go to the North End if you want to get good cheese (in a context set in Boston, where the North End is the Italian quarter). Other actions, e.g. going to the Italian quarter in New York or travelling to Italy, are not necessary, but they are also not excluded as a means of getting good cheese. In such cases a problem arises from the presupposition associated with *only*. For the sentence (i), the presupposition is that it is necessary to go to the North End to get good cheese. This excludes the possibility of there being other ways of getting good cheese, which is in conflict with what the sentence means intuitively. The solution von Fintel and Iatridou (2007) propose for this problem decomposes *only* into a negation and an exceptional phrase ('other than') and allows the two components to take scope independently. This way, negation can outscope the modal, while the exceptional phrase is interpreted in its scope. The resulting truth conditions are 'It is not necessary that you do anything other than going to the North End', which corresponds to the meaning intuitively assigned to (i). There is, however, another way out of this problem, proposed by Kraskova and Zhechev (2006), which results in a rather complex semantics for *only*, but I think this is nevertheless to be preferred to a decompositional analysis.
(14)  You are required to read fewer than five books for this class.
       'You are not required to read more than five books for this class.'

In generalized quantifier theory, fewer than five books is assigned the following denotation (Keenan, 1996, among others):

\[(15) \quad \left[ \text{fewer than five books} \right] = \lambda w. \lambda P_{1..t}. \left| P \cap \{x : x \text{ are books in } w\} \right| < 5\]

Given the semantics in (15), two LF’s are available for sentence (14) with the quantifier taking scope below or above the modal, respectively. If the quantifier is interpreted below the modal, as in (16a),6 the truth conditions (17a) are derived saying that you are required to read less than five books, i.e. your reading five books or more would constitute a violation of the rules. If the quantifier outscopes the modal, cf. (16b), the restrictive predicate books is interpreted de re, i.e. there is a specific set of books consisting of no more than four books which you have to read. The split reading as paraphrased in (14) cannot be derived.

(16)  a. [required [ you read [ fewer than five books ]]]
       b. [fewer than five books | λi [ required [ you read 1 ]]]

(17)  a. \(\lambda w. \forall w' \in \text{Acc}_w : |\{x : x \text{ are books in } w'\} \cap \{x : \text{you read } x\}
       \text{in } w'\}| < 5\)
       b. \(\lambda w. |\{x : x \text{ are books in } w\} \cap \{x : \forall w' \in \text{Acc}_w : \text{you read } x\}
       \text{in } w'\}| < 5\)

Scope splitting is accounted for by an analysis of comparative quantifiers that takes the comparative syntax and semantics seriously. Such an account is proposed by Hackl (2000), who employs the standard analysis of comparative constructions to derive the meaning of comparative quantifiers compositionally from the parts they are made up of.

The degrees involved in amount comparatives are degrees of quantity, which are given numerical names.

(18)  \(\left[ \text{five} \right] = \lambda w. 5\) \hspace{1cm} \text{(type d)}

Hackl proposes that amount comparatives involve a ‘parameterized’ or gradable determiner MANY, whose degree argument corresponds to a cardinality parameter:

\[(19) \quad \left[ \text{MANY} \right] = \lambda w. \lambda d \in \text{D}_d. \lambda P_{1..t}. \lambda Q_{1..t}. \exists x[ |x| = d \& P(x) \& Q(x)]\]

Accordingly, MANY quantifies over plural individuals, whose number of atomic parts is specified by the degree argument.

6 I am again neglecting QR of quantifiers for type reasons.
The rest of the analysis is simply the standard analysis of comparatives. For the present purpose, we can assume the following semantics for the comparative morpheme -er:7

\[
\lambda w. \lambda d. \lambda D_{(d,t)} \cdot \max(D) > d
\]

Accordingly, a degree phrase (DegP) like -er than five receives the following meaning:

\[
\lambda w. \lambda D_{(d,t)} \cdot \max(D) > 5
\]

Because -er than five denotes a degree quantifier (of type \(\langle d, t \rangle\)) it has to raise from its base position as degree argument of MANY to a clausal node where it can be interpreted. For illustration, the LF for sentence (22a) is given in (22b).8

\[
\begin{align*}
\text{(22a)} & \quad \text{John owns more than five books.} \\
\text{(22b)} & \quad \begin{array}{l}
\text{John owns}\ |D_{\text{DegP}\-er\ \text{than}\ \text{five}} | \lambda d_1 |\text{John owns} | \text{DP} d_1\-\text{MANY books}| \\
\text{\lambda w. max}\{d : \exists x | x = d \& x \text{ are books in } w \ & \text{John owns } x \text{ in } w\} > 5 \\
\text{\lambda w. } |\{x : x \text{ are books in } w\} \cap \{x : \text{John owns } x \text{ in } w\}| > 5
\end{array}
\end{align*}
\]

LF (22b) expresses the truth conditions given in (22c). They are equivalent to the truth conditions (22d), which are obtained if more than five books is analysed as a generalized quantifier.

But, crucially, Hackl's analysis is more complex than the one provided by generalized quantifier theory, in the sense that two quantifiers are involved, one degree quantifier and one quantifier over individuals. The presence of the degree quantifier results in more structures being available. In particular, in sentences containing other scope-bearing operators different possible landing sites are available for the degree quantifier, and one would expect scope ambiguities to arise (this issue is addressed in Heim, 2001). For instance, two possible LF representations for sentence (23) are possible, cf. (24), differing in the scope of DegP with respect to the necessity modal.

\[
\text{(23)} \quad \text{You are required to read more than five books for this class.}
\]

7 I use the meaning rule in (20) for the comparative morpheme because it allows the most perspicuous analysis of the kind of data discussed here. It presupposes that measure phrases such as two metres or five denote degrees. A more integrated analysis would employ the more general semantics of the comparative morpheme in (i) as relation between two sets of degrees.

\[
\begin{align*}
\text{(i)} & \quad \begin{array}{l}
\lambda w. \lambda D_{(d,t)} \cdot \lambda D'_{(d,t)} \cdot D \subset D'
\end{array}
\end{align*}
\]

Under this semantics, measure phrases are analysed as denoting an interval, e.g. two metres denotes an interval of two metres length.

8 Hackl's (2000) analysis is actually more complex, but this simplified version will do for the present purpose.
Negative Indefinites

(24) a. [ required [[ -er than five ] \( \lambda d \_ (d\text{-MANY books}) ]] ]
b. [ -er than five ] \( \lambda d \_ (d\text{-MANY books}) ]

(25) 2. \( \lambda w. \forall w' \in \text{Acc}_w : \max\{ d : \exists x [ x \vdash d \& x \text{ are books in } w' \}
& \text{you read } x \text{ in } w' \} > 5 \)
b. \( \lambda w. \max\{ d : \forall w' \in \text{Acc}_w : \exists x [ x \vdash d \& x \text{ are books in } w' \}
& \text{you read } x \text{ in } w' \} > 5 \)

The LFs (24a) and (24b) express the truth conditions (25a) and (25b), respectively. (25a) says that, in every world conforming to the rules, the number of books you read is greater than five. In order to see what is expressed by (25b), we first need to know what the maximal number \( n \) is, such that you read \( n \) books in every world in which the requirements are met. This is in fact the number of books you read in the rule-complying world in which you read the smallest number of books. So (25b) says that the number of books you read in the world where you read the fewest books is greater than five. But this holds just in case the number of books you read in every world conforming to the rules is greater than five, as required by (25a). Thus, the truth conditions (25a) and (25b) are in fact indistinguishable from each other.

Due to the fact that the truth conditions expressed by the two available LFs for (22) are equivalent, a different scope of the degree quantifier does not result in different readings. This truth-functional equivalence carries over to other modals (see Heim, 2001). The case is different however for comparatives based on less or fewer. Let us assume the following semantics for less or fewer:

(26) \( \llbracket \text{less} \rrbracket = \llbracket \text{fewer} \rrbracket = \lambda w. \lambda d. \lambda D_{(d, r)}. \max(D) < d \)

Again, for a sentence like (27), there are two LFs available, one in which the DegP less than five scopes below the modal (28a) and one where it scopes above (28b).

(27) You are required to read less than five books.

(28) a. [ required [ [ less than five ] \( \lambda d \_ (d\text{-MANY books}) ] ] ]
b. [ less than five ] \( \lambda d \_ (d\text{-MANY books}) ]

(29) a. \( \lambda w. \forall w' \in \text{Acc}_w : \max\{ d : \exists x [ x \vdash d \& x \text{ are books in } w' \}
& \text{you read } x \text{ in } w' \} < 5 \)
b. \( \lambda w. \max\{ d : \forall w' \in \text{Acc}_w : \exists x [ x \vdash d \& x \text{ are books in } w' \}
& \text{you read } x \text{ in } w' \} < 5 \)

A more integrated account would analyse fewer as few + -er, with few being the antonym or polar opposite of many.
This time the truth conditions expressed by the two LFs are not equivalent. From the narrow-scope LF (28a) the truth conditions (29a) are derived, which say that in all worlds conforming to the rules, the number of books you read is smaller than five. In other words, you are not allowed to read five books or more. In contrast, (29b), derived from the wide-scope LF (28b), says that the number of books you read in all rule-complying worlds—i.e. the number of books you read in the world where you read the fewest books—is smaller than five. This means that you are not required to read five (or more) books. This corresponds exactly to the split reading observed to arise with fewer.

It is not a problem either to derive the de re reading of (27), according to which there is a set of specific books consisting of no more than four books which you have to read. In order to derive this reading, the quantifier over individuals has to take scope above the modal, but below the degree quantifier, as shown in (30a).

\[(30) \quad \begin{align*}
\text{a. } \lambda d, \lambda_1 [\text{less than five}] & \lambda d, \lambda_1 [\text{one -many books}] \lambda_2 [\text{required [you read 2]]} \\
\text{b. } \lambda w. \max [d: \exists x (x = d \& x \text{ are books in } w \& \forall w' \in \text{Acc}_w: \text{you read } x \text{ in } w')] < 5
\end{align*}\]

An advantage of this analysis is that for intensional transitive verbs like seek or need, the unattested narrow-scope reading cannot be derived. As the degree quantifier has to raise to a clausal node in order to be interpretable, it cannot take scope below the verb. Thus, the unattested reading (31c) is not generated in the first place, and no additional assumptions are needed to exclude it. Only the split reading (31a) and the de re reading (31b) are derived, which are in fact the readings the sentence has intuitively.

\[(31) \quad \text{Tom needs less than three blankets.} \]

\[\begin{align*}
\text{a. 'Tom doesn't need as many as three blankets.'} \\
\text{b. 'There are less than three blankets Tom needs to have.'} \\
\text{c. 'Tom needs to have less than three blankets.'}
\end{align*}\]

We can conclude that the split reading arising with DPs involving less than $n$ or fewer than $n$ is due to the presence of two quantifiers, one degree and one individual quantifier. If the degree quantifier takes scope above the modal, while the individual quantifier scopes below, the split reading results. There is a principled explanation for the fact that downward-monotone DPs involving fewer/less than $n$ lead to split readings, but monotone-increasing quantifiers with more than $n$ do not: in the case of fewer/less different scope of the degree quantifier corresponds to a difference in truth conditions, whereas the truth conditions are equivalent for more.
There are further cases of split readings arising with *fewer* that are straightforward to account for under an analysis which is based on comparative semantics and involves a degree quantifier. A case in point is the following example.

(32) John needs to read fewer books than Mary.
   'John doesn’t need to read as many books as Mary.'

Since *fewer books than Mary* cannot be analysed as a generalized quantifier, an analysis of scope splitting in the style of de Swart (2000) is not applicable to (32), and a different account for the split reading of such examples would be needed anyway. But Hackl’s analysis of comparative quantifiers applies to sentences like (32) in the same way as to the examples discussed so far.\(^\text{10}\) (In fact, it treats the latter as a special instance of the former where the standard of comparison is given by a measure phrase.)

The assumption that scope splitting arising with DPs containing *fewer/less than n* is due to comparative morphology is further confirmed by the fact that *less*-comparatives in general give rise to split readings, as observed in Heim (2001). For instance, sentence (33) with an adjectival comparative is ambiguous between the readings paraphrased as (33a) and (33b), the latter being the split reading.

(33) The paper is required to be less long than ten pages.
   a. ‘The paper is required to be shorter than ten pages.’
   b. ‘The paper is not required to be as long as ten pages.’

\(^\text{10}\) In order to analyse sentence (32), a more principled treatment of the comparative complement under *than* is required than I have been assuming for the cases discussed so far, which all involved measure phrases. Adopting an analysis in the style of von Stechow (1984a) and Heim (2001), the complement under *than* is analysed as a clause reduced by ellipsis and denoting a set of degrees. In order for the comparative operator to be applicable, the maximum of this set is chosen.

If DegP scopes above the modal, the split reading results:

(i) a. John needs to read fewer books than Mary needs to read
    b. [ less $\lambda d \downarrow$ [ need $\lambda d_1 \downarrow$ Mary read $d_2 \downarrow$ MANY books $\downarrow$ ] $\downarrow$ d_1 [ John read $d_1$ MANY books $\downarrow$ ] ]
    c. $\lambda u \lambda w' \max [ d : \forall w' \in Acc_w : \exists x [ x = d \& x \text{ are books in } w' \& \text{ John reads } x \text{ in } w' ] ] < \max [ d : \forall w' \in Acc_w : \exists x [ x = d \& x \text{ are books in } w' \& \text{ Mary reads } x \text{ in } w' ] ]$

Sentence (32) has a second reading according to which the number of books John reads has to be smaller than the number of books Mary reads. This reading results from DegP scoping below the modal:

(ii) a. John needs to read fewer books than Mary reads
    b. [ [ need $\lambda d \downarrow$ [ less $\lambda d_2 \downarrow$ Mary read $d_3 \downarrow$ MANY books $\downarrow$ ] $\downarrow$ d_1 [ John read $d_1$ MANY books $\downarrow$ ] ] ]
    c. $\lambda u \lambda w' \in Acc_w : \max [ d : \exists x [ x = d \& x \text{ are books in } w' \& \text{ John reads } x \text{ in } w' ] ] < \max [ d : \exists x [ x = d \& x \text{ are books in } w' \& \text{ Mary reads } x \text{ in } w' ] ]$
Heim derives these two readings from LFs differing with respect to the scope of DegP, as shown in (34).

(34)  a. [ required ] [ less than ten ] λd, [ the paper is d₁-long ] ]
      b. [ less than ten ] λd₁ [ required | the paper is d₁-long ] ]

(35)  a. λw.∀w' ∈ Acc_w : max{d : the paper is d-long in w'} < 10 pages
      b. λw. max{d : ∀w' ∈ Acc_w : the paper is d-long in w'} < 10 pages

According to the truth conditions in (35a), derived from LF (34a) with narrow scope of DegP, the paper has to be shorter than ten pages. In contrast, the truth conditions (35b), which are expressed by LF (34b) with wide scope of the DegP, say that the paper is not required to be ten pages long, and thus correspond to the split reading. Comparative quantifiers made up of fewer/less than n represent just a special instance of less-comparatives, and thus the former are expected to give rise to split readings in the same way as the latter.

As discussed by Heim (2001), LF-movement of DegP is restricted in terms of the material that can be crossed. In particular, DegP cannot move across quantificational DPs. This is witnessed by the fact that less-comparatives do not lead to a scope ambiguity in connection with quantificational DPs. Sentence (36), for instance, does not have a reading according to which the shortest girl is shorter than 1.70m. Corresponding truth conditions would be expressed by an LF in which DegP outscopes the universal DP, cf. (37b). Only reading (38a) ('The tallest girl is shorter than 1.70m'), expressed by LF (37a) with narrow scope of DegP, is possible.

(36)  Every girl is less tall than 1.70m.

(37)  a. [ every girl ] λ₁ [ [ less than 1.70m ] λd₂ [ 1 is d₂-tall ] ]
      b. [ less than 1.70m ] λd₂ [ [ every girl ] λ₁ [ 1 is d₂-tall ] ]

(38)  a. λw.∀x[x is a girl in w → max{d : x is d-tall in w} < 1.70m ]
      b. λw. max{d : ∀x[x is a girl in w → x is d-tall in w]} < 1.70m

Heim refers to this restriction on DegP scope as Kennedy’s Generalization.

(39)  Kennedy’s Generalization: (Heim, 2001: 223)

If the scope of a quantificational DP contains the trace of a DegP, it also contains that DegP itself.

Kennedy’s Generalization, being explicitly restricted to DP quantifiers, predicts that scope splitting with comparative quantifiers is restricted to intensional verbs and does not arise in connection with quantificational DPs.¹

¹ The fact that quantifiers over possible worlds do not constitute interveners for certain operations while quantifiers over individuals do has been observed on several occasions in the literature (see e.g. Linebarger, 1987; Beck, 1996).
This is what we find indeed. Parallel to (36), (40) only has the reading (42a) corresponding to narrow scope of DegP, which says that no girl read five books or more. The reading (42b) with DegP outscoping the universal DP ('the girl who read the fewest books read less than five books') is not available.

(40) Every girl read less than five books.

(41) a. [ every girl ] $\lambda_1 [ [ [ \text{less than five} ] \lambda d_2 [ 1 \text{read } d_2 \text{-many books} ] ] ]$

   b. [ less than five ] $\lambda d_2 [ [ [ \text{every girl} ] \lambda_1 [ 1 \text{read } d_2 \text{-many books} ] ] ]$

(42) a. $\lambda w. \forall x [ x \text{ is a girl in } w \rightarrow \max \{ d : d : \exists y [ y = d \& y \text{ are books in } w' \& x \text{ reads } y \text{ in } w'] \} < 5 ]$

   b. $\lambda w. \max \{ d : \forall x [ x \text{ is a girl in } w \rightarrow \exists y [ y = d \& y \text{ are books in } w' \& x \text{ reads } y \text{ in } w'] \} < 5 ]$

Even under topic-focus accent in German, LF-movement of DegP across a quantificational DP would be necessary to derive the split reading, which is excluded according to Kennedy's Generalization.

The upshot of this discussion is that scope splitting arising with fewer/less-comparatives should be considered distinct from scope splitting with NIs. As proposed by Heim (2001) and Hackl (2000), the scope splitting effect of fewer/less-comparatives can be analysed as resulting from a degree quantifier taking wide scope. NIs, in contrast, do not exhibit morphology related to degree semantics. It does thus not seem justified to extend the analysis of scope splitting based on DegP movement to NIs (although it would technically be feasible). There are also empirical differences indicating that the two phenomena are not the same: scope splitting with comparative quantifiers is restricted to intensional verbs, whereas split readings with NIs arise also with respect to DP quantifiers (albeit in very restricted circumstances). Under the DegP movement account, the fact that split readings of comparative quantifiers with respect to DP quantifiers are not attested is predicted by Kennedy's Generalization. In contrast, split readings of NIs do not involve LF movement, as argued in the previous chapter, and are thus not restricted by constraints on LF-movement.

### 4.4 Few/little

In a later paper, Heim (2006) revises her analysis of less-comparatives.\footnote{This section presents ideas that are due to Irene Heim (p.c.), including the extension to few, which is not part of Heim (2006).} Motivation for this move comes from the fact that less-comparatives do not only give rise to an ambiguity when there is a modal in the matrix clause, as
discussed in the previous section, but also when there is a modal in the than-clause. Consider the following sentence, discussed by Rullmann (1995b):

(43) Lucinda is driving less fast than is allowed on this highway.

This sentence can be interpreted in two ways. In one reading, Lucinda’s speed is within the speed limit. If the maximum speed allowed on the highway is, for example, 50 mph, Lucinda’s speed is below 50 mph. In the second reading, Lucinda is violating the traffic rules by driving below the required minimum speed.

The same ambiguity arises with comparatives involving fewer and a modal in the than-clause, as illustrated by the following example from Rullmann (1995b: 84)

(44) Harry took fewer classes than was allowed.

In a context in which the students of Harry’s year have to take at least three and at most six classes, (44) can mean either that Harry took less than six classes, or that he took less than three classes.

Heim’s (2006) analysis of these readings of less-comparatives starts out from the observation that there is also an ambiguity when little, the positive form of less, occurs under modal operators.13 She discusses the following examples.

(45) a. We can grow very little.
    b. I didn’t realize how little I can pay.
    c. It’s a shame that they let the students write so little.

In the first reading, (45a) says that it is possible that we grow no more than a very small extent. But the sentence can also mean that it is not possible that we grow more than to a very small extent. This is the split reading. Similarly for (45b), which can mean either that I had expected that I had to pay more, or that I thought that I would be able to pay more. The second reading can be paraphrased as ‘I didn’t realize that I cannot pay more than a small amount’ and constitutes again the split reading. Finally, (45c) can either be used to express that one considers the amount of writing the students have to do as too small (i.e. the students should be required to write more), or that the amount of writing the students are allowed to do is considered too small (i.e. the students should be allowed to write more).

To derive the ambiguity of the sentences in (45), Heim proposes that little denotes a kind of negation and can take wide or narrow scope with respect to

13 Heim (2006) analyses less as little+er. The ambiguity of sentences like (43) is then derived as little scoping below or above the modal in the than-clause. For the details of the analysis, the reader is referred to Heim (2006).
the modal. While Heim (2006) only discusses cases involving little, the facts and the analysis carry over to few. The difference is just that few goes with count nouns, while little goes with mass nouns and gradable verbs. I will focus on cases involving few, and on constructions less complex than the ones Heim discusses. For the full analysis of the examples in (45), the reader is referred to Heim (2006).

As an example of the ambiguity arising with few consider the following sentence:

(46) They are allowed to write few letters.

The two readings of (46) can be brought out by considering the sentence in different contexts. If they refers to people being trained as office staff who have to practise writing letters as part of their training, (46) means that the trainees get away with writing a small number of letters for practise. If they refers to inhabitants of a prison where correspondence is restricted, (46) says that the prisoners are not allowed to write more than a small number of letters.

Heim gives the following semantics for little, which extends to few:

(47) \[ \ll \text{little} \rr = \ll \text{few} \rr = \lambda w. \lambda d. \lambda D_{(d,i)} . \neg D(d) \]

According to (47), d-little or d-few means 'not to degree d'.

In cases where few is used in the positive form, its degree argument is not explicitly given. It is standardly assumed that when a gradable adjective is used without an explicit degree argument, a contextually given standard is filled in. Take, for instance, (48a) below, which means that the number of students who passed exceeds a contextually given standard which constitutes the limit for counting as 'many'. This standard might be considerably lower in one context, for example if we are talking about a very hard exam, than in another. The case is parallel for few in (48b), but here the number of students who passed must be smaller than the standard in the context. The fact that a certain number may count as neither 'few' nor 'many', as in (48c), indicates that there is a neutral segment in between the standard for the negative pole few, s−c, and the standard for the positive pole many, s+c. This is depicted in (49), where the segment that counts as neutral in a given context c is referred to as Nc.

(48) a. Many students passed the exam.
   b. Few students passed the exam.
   c. Neither few nor many students passed the exam.

(49) \[ s_{-c} \quad s_{+c} \]

\[ \text{few} \quad \text{N}_c \quad \text{many} \]
The dependence of positive forms of adjectives on contextually determined standards can be implemented via a positive operator $\text{pos}$, which serves as the degree argument. Von Stechow (2007b) proposes the following semantics of the positive operator $\text{pos}$:

\[(50) \quad [\text{pos}] = \lambda w. \lambda D(d, t). \forall d \in N_c : D(d)\]

In order to see how this analysis of few works, let us work through a simple example.

\[(51) \quad \text{a. Few students passed the exam.}\]

\[\quad \text{b. pos } \lambda d_1 [d_1 \text{ few } | \lambda d_2 [ [d_2 \text{-many students } | \text{ passed the exam } ]]]\]

\[\quad \text{c. } \lambda w. \forall d \in N_c : \neg \exists x[|x| = d \land x \text{ are students in } w \land x \text{ passed the exam in } w]\]

As few plus its degree argument denotes a degree quantifier, it cannot be interpreted in its base-generated position inside the DP, where it serves as the degree argument of many,\(^{14}\) and has to raise at LF. The same holds for the degree argument of few, which is constituted by the positive operator. Movement of the degree quantifiers results in LF (51b), which expresses the truth conditions (51c) saying that the number of students who passed falls into the part of the scale in (49) which is located below the neutral segment $N_c$, i.e. into the part counting as 'few'.

\(^{14}\) I continue using Hackl's gradable quantifier many, although the name is misleading. Many does not correspond to the function expressed in English as many but is rather an implicit operator relating properties with degrees of amount.

The semantics of many (and much) should be the polar opposite of the one assumed for few. As the meaning of few is negation, many is presumably semantically empty, corresponding merely to functional application.

\[(i) \quad [\text{many}] = \lambda w. \lambda d. \lambda D(d, t). D(d)\]

It is worth pointing out that few should not be assumed to correspond to little+many, as this decomposition is not generally available for the marked form of a pair of gradable adjectives (like short as opposed to long). For instance, it should not be possible to decompose slow into little+fast, as this would give rise to unattested readings. With negative polar adjectives, the split reading under modal verbs does not arise. Sentence (ii) for example cannot be used to express that one is not allowed to drive fast on this highway. According to the only reading of (ii), the prescribed minimum speed is very low.

\[(ii) \quad \text{You can drive very slowly on this highway.}\]

However, as observed by Rullmann (1995b), the ambiguity discussed for less-comparatives involving a modal in the than-clause also arises for more-comparatives based on marked antonyms. Rullmann reports the same readings for (iii) as for (43).

\[(iii) \quad \text{Lucinda is driving more slowly than is allowed on this highway.}\]

But, as discussed by Heim (2006), the analysis explaining the ambiguity for less-comparatives (and deriving split readings for the positive form little) should not be extended to marked antonyms in general.
If there is a modal present, the landing site of the degree phrase formed by \textit{few} can be either below or above the modal. There are thus two LFs available for a sentence like (52).\footnote{The positive operator \textit{pos} also has the option of scoping on its own above \textit{allowed}, but this does not have an effect on the truth conditions.}

(52) They are allowed to write \textit{few} letters.

(53) a. [allowed [\textit{pos} \lambda d_1 [ [d_1 \textit{few}] \lambda d_2 [they write [d_2-MANY letters ]]]]]

b. [\textit{pos} \lambda d_1 [ [d_1 \textit{few}] \lambda d_2 [allowed [they write [d_2-MANY letters ]]]]]

The truth conditions that go with LF (53a) are given in (54a). The degree phrase formed by \textit{few} takes narrow scope with respect to the modal, and it is said that writing a small number of letters complies with the rules. This is the reading described above for the office staff trainees who have to practise writing letters.

(54) a. \lambda w.\exists w' \in \text{Acc}_w : \forall d \in N_c : \neg \exists x [ |x| = d \& x \text{ are letters in } w \\
& \text{they write } x \text{ in } w]

b. \lambda w.\forall d \in N_c : \exists w' \in \text{Acc}_w : \exists x [ |x| = d \& x \text{ are letters in } w \\
& \text{they write } x \text{ in } w]

The truth conditions in (54b), generated from the wide scope LF (53b), correspond to the prison scenario, where there is an upper bound on the number of letters. Now it is said that the number of letters written is not allowed to exceed a certain small number. This is the split reading discussed by de Swart (2006).

Under the analysis of Heim (2006), the split reading arises because \textit{few} denotes a negation, which can take wide scope above the modal. It is not necessary to decompose a lexical unit. Rather, the meaning components \textit{few} intuitively involves are spread over distinct elements, a degree quantifier and an individual quantifier which can take scope independently. \textit{Few} itself just denotes negation, and assigning wide scope to it results in the so-called split reading, although there is no real 'splitting' involved. As pointed out by Heim (2006), LF-movement of the degree phrase formed by \textit{little/few} is subject to Kennedy's Generalization, parallel to the comparative discussed in the previous section. This means that \textit{little/few} can only outscope intensional verbs but not nominal quantifiers. As a consequence of this restriction, the split reading arises only with verbal quantifiers.
4.5 At most

Hackl (2000) proposes that his account of comparative quantifiers can be extended to degree modifiers such as at least and at most. Without providing a serious analysis, he suggests that expressions like at least n are degree quantifiers parallel to -er than n and the following meaning rules:

(55)  
   a. \[\text{at least } 5 \] = \lambda w. \lambda D_{(d,t)} . D(5) \\
   b. \[\text{at most } 5 \] = \lambda w. \lambda D_{(d,t)} . \neg \exists d [d > 5 \land D(d)]

Adopting this analysis, scope splitting with at most under intensional verbs can be analysed in the same way as for less/fewer than, namely as DegP scoping above the modal, as shown in (56).

(56)  
   ‘You need to read at most five books for this class.
   ‘You are not required to read more than five books for this class.’

(57)  
   a. \[\text{at most five } \lambda d, \text{ need } \lambda d, \text{ you read } d, \text{ MANY books}]\]
   b. \lambda w. \exists d [d > 5 \land \max(d : \forall w' \in \text{ Acc}_w : \text{ you read } d, \text{ MANY books in } w') = d]

According to the truth conditions (57b), you do not read more than five books in the world conforming to the rules in which you read the smallest number of books. In other words, you are not required to read more than five books.

Again, for upward monotone at least the truth conditions expressed by an LF with wide scope of the degree quantifier are equivalent to the truth conditions expressed by an LF where DegP takes narrow scope. Therefore, scope splitting with at most could be attributed to movement of DegP parallel to scope splitting with comparative quantifiers.

However, there are facts suggesting that at least and at most should not be treated on a par with comparative quantifiers. For one, the constructions differ with respect to the availability of the split reading under epistemic modals. While less/fewer than does not yield a split reading under epistemic modals, cf. (58), the split reading is salient for at most, cf. (59):\footnote{I resort to German examples for which I have clear intuitions. I expect the facts to carry over to English. There is another reading for sentences with höchsten ‘at most’ under an epistemic possibility modal in German, which can be paraphrased with ‘the only possibility that is compatible with the speaker’s knowledge’.

(i) Der Dieb könnte höchstens durchs Fenster hereingekommen sein. The thief might at-most through-the window into-come be
   ‘The only possibility that is compatible with what I know is that the thief might have come in through the window.’

Interesting though this reading is for a general semantics of at most, it is irrelevant for the present discussion.}
(58) Der Dieb könnte weniger als drei Bücher gestohlen haben.
the thief might fewer than three books stolen have
‘The thief might have stolen less than three books.’

a. ‘It is compatible with what I know that the thief stole less than three books.’
b. ‘It is not compatible with what I know that the thief stole more than two books.’

(59) Der Dieb könnte höchstens drei Bücher gestohlen haben.
the thief might at-most three books stolen have
‘The thief might have stolen at most three books.’

a. ‘It is compatible with what I know that the maximum number of books the thief stole is three.’
b. ‘It is not compatible with what I know that the thief stole more than three books.’

As observed in Heim (2001), less-comparatives in general do not give rise to the split reading under epistemic modals:

(60) The paper might be less long than that.  (Heim, 2001: 226)
‘It’s not possible for it to be as long as that.’

Heim suggests that the unavailability of scope splitting with respect to epistemic modals can be reduced to the fact that epistemic modals do not like to be outscoped by other operators in general, and that this aversion also includes degree quantifiers. In any case, the contrast in the availability of the split reading between less-comparatives and at most under epistemic verbs provides an argument against a unified analysis of scope splitting for fewer/less than and at most.

There are further arguments against a parallel analysis of at most/at least and comparative quantifiers (see Geurts and Nouwen, 2007; Nouwen, 2009). Consider the following sentences, which are predicted to have the same meaning if at least is assigned the meaning given in (55):

(61) a. I have more than two children.
b. I have at least three children.

While (61a) is a perfectly fine thing to say in a context where the exact number of one’s children is irrelevant as long as it is greater than two, (61b) is odd because it implies that the speaker does not know how many children he has.
This suggests that the semantics of *at least* includes an epistemic component which *more than* lacks. Such a modal analysis of *at least* and *at most* is proposed by Geurts and Nouwen (2007), who argue that (61b) means that the speaker is certain that he has three children and regards it as possible that he has more than three children.

Following Krifka (1999), *at least* and *at most* are analysed as propositional operators associated with focus. In contrast to run-of-the-mill focus-sensitive particles like *only* (Rooth, 1985), scalar modifiers operate on alternatives ordered on a scale. In the cases discussed here where focus is on the numeral, the scale is given by the sequence of natural numbers. Krifka (1999) defines a mechanism ensuring that the ordering of the alternatives of the same type as the focus carries over to the alternatives at the propositional level. For sentence (61b), for instance, the ordered alternatives correspond to the following ordered set (where \( s_c \) refers to the speaker at the context \( c \)):

\[
(62) \{ \ldots \triangleleft \text{that } s_c \text{ has 3 children} \triangleleft \text{that } s_c \text{ has 4 children} \triangleleft \text{that } s_c \text{ has 5 children} \triangleleft \ldots \}
\]

The meaning of *at least* and *at most* is defined as follows (where \( H_{s_c,w} \) represents the knowledge of the speaker at the context \( c \) in the world \( w \)):

\[
(63) \begin{align*}
\text{a. } & \left[ \text{at least} \right] = \lambda w. \lambda p_{<s,t>} \cdot H_{s_c,w} \subseteq p \land \exists q \left[ p \triangleleft q \land H_{s_c,w} \cap q \neq \emptyset \right] \\
\text{b. } & \left[ \text{at most} \right] = \lambda w. \lambda p_{<s,t>} \cdot H_{s_c,w} \cap p \neq \emptyset \land \neg \exists q \left[ p \triangleleft q \land H_{s_c,w} \cap q \neq \emptyset \right]
\end{align*}
\]

According to (63a), the meaning contribution of *at least* is twofold: first, it expresses that the speaker is certain that the prejacent (the sentence minus *at least*) is true, and second, that for all he knows, there might be alternatives ranked higher that are true as well.

To illustrate this, example (61b), repeated for convenience as (64a), is analysed in the following way. Let us assume LF (64b), where Hackl’s (2000) parameterized quantifier MANY is present and its degree argument is focused. Applying the meaning of *at least* then results in the truth conditions (64c).

\[
(64) \begin{align*}
\text{a. } & \text{I have at least three children.} \\
\text{b. } & \text{at least } \left[ \text{I have [three]_F-MANY children} \right] \\
\end{align*}
\]

\[17\] The lexical entries in (63) are simplifications in so far as the relevant modal background is fixed to the epistemic alternatives of the speaker, \( H_{s_c,w} \). This only covers unembedded uses of *at least* and *at most*. In embedded uses, the relevant background is determined by the matrix clause. In the following example, for instance, the relevant background corresponds to the worlds making up Quine’s beliefs.

(i) Quine believes that at most one theory is correct.
170  Negative Indefinites

c. $\lambda w. H_{x,w} \subseteq (\lambda w'. \exists x [x \text{ are children in } w' & s_c \text{ has } x \text{ in } w' & \langle x' = 3 \rangle) \& H_{s_c,w} \cap (\lambda w'. \exists x [x \text{ are children in } w' & s_c \text{ has } x \text{ in } w' & \langle x \rangle > 3]) \neq \emptyset$

According to the first conjunct of (64c), it follows from the knowledge of
the speaker that he has three children. Because one can only know things
that are true, it follows that the speaker has in fact three children. The second
conjunct says that his having more than three children is compatible with his
knowledge, which gives rise to the impression that the speaker is uncertain
about the number of children he has.

Replacing at least by at most, (65) expresses that his having three children
is compatible with what the speaker knows, but it is not compatible with his
knowledge that he has more than three children.

(65)  a. I have at most three children.
  b. $\lambda w. H_{s_c,w} \cap (\lambda w'. \exists x [x \text{ are children in } w' & s_c \text{ has } x \text{ in } w' & \langle x \rangle = 3]) \neq \emptyset \& H_{s_c,w} \cap (\lambda w'. \exists x [x \text{ are children in } w' & s_c \text{ has } x \text{ in } w' & \langle x \rangle > 3]) = \emptyset$

Note that saying that having more than three children is not compatible with
the speaker’s knowledge is tantamount to saying that the speaker is certain that
he does not have more than three children. In general, the equivalence in (66)
holds. Consequently, the truth conditions (65b) can be rewritten as (67).

(66)  For all $x$ and $w$: if $p$ is defined at $H_{x,w}$ then:

$H_{x,w} \cap p = \emptyset \iff H_{x,w} \subseteq \neg p$

(67)  $\lambda w. H_{s_c,w} \cap (\lambda w'. \exists x [x \text{ are children in } w' & s_c \text{ has } x \text{ in } w' & \langle x \rangle = 3]) \neq \emptyset$

$\& H_{s_c,w} \subseteq (\lambda w'. \neg \exists x [x \text{ are children in } w' & s_c \text{ has } x \text{ in } w' & \langle x \rangle > 3])$

Coming back to the split reading arising when at most is embedded under
an intensional verb, consider (68a). If at most takes scope above the modal, as
shown in (68b), the truth conditions (69) result.

(68)  a. You may borrow at most five books.
  b. at most [ may [ you borrow [five|f-many books ]]]

(69)  $\lambda w. H_{x,w} \cap (\lambda w'. \exists w'' \in \text{Acc}_{w''}:

\exists x [x \text{ are books in } w'' & you borrow } x \text{ in } w'' & \langle x \rangle = 5]) \neq \emptyset$

$\& H_{s_c,w} \cap (\lambda w'. \exists w'' \in \text{Acc}_{w''}:

\exists x [x \text{ are books in } w'' & you borrow } x \text{ in } w'' & \langle x \rangle > 5]) = \emptyset$

According to the second conjunct, it is not compatible with what the speaker
knows that one may borrow more than five books. Because of the equivalence
(66), this means that the speaker is certain that one may not borrow more than five books, and consequently (69) can be rewritten as (70):

\[
(70) \quad \forall w. H_{s,w} \cap (\forall w'. \exists w'' \in Acc_w : \exists x [ x \text{ are books in } w'' \& \text{you borrow } x \text{ in } w'' \& |x| = 5]) \neq \emptyset \& H_{s,w} \subseteq (\forall w'. \neg \exists w'' \in Acc_w : \exists x [ x \text{ are books in } w'' \& \text{you borrow } x \text{ in } w'' \& |x| > 5])
\]

As one can only know things that are true, (70) implies that one may not borrow more than five books. Thus, the truth conditions assigned to sentence (68a) under the analysis of Geurts and Nouwen (2007) imply the split reading the sentence intuitively expresses. Consequently, the fact that at most expresses negation over epistemic possibility can be held responsible for the scope-splitting effect arising with at most. At least, on the other hand, expresses epistemic possibility of alternatives ranked higher, and thus there is nothing in the resulting truth conditions that corresponds to the split reading.

Geurts and Nouwen (2007) argue that, if at most is embedded under a modal, the reading with wide scope of at most is in fact the only one available and at most cannot take scope below the modal. They attribute this to the presence of epistemic modality in the meaning of these expressions: as epistemic modals dislike being in the scope of other operators, they strongly prefer to take wide scope. While epistemic modals do not like to be outscoped by other operators, however, stacking of epistemic operators seems to be fine. This is what happens in example (59), repeated as (71a). If at most takes scope above the epistemic modal may, as shown in LF (71b), the truth conditions (72) result.

\[\text{In certain contexts, the truth conditions in (70) could be reduced even further. In cases where the speaker is well informed about the subject matter, the fact that the proposition } p \text{ is compatible with the speaker's knowledge is sufficient to conclude that the speaker in fact knows } p \text{ (and consequently that } p \text{ is true). This is stated by Zimmermann (2000) as the Authority Principle:}
\]

(i) Authority Principle \quad \parbox{\textwidth}{(Zimmermann, 2000: 286)}

- If the speaker is an authority on } P \text{ in } c, \text{ then for any } x:
  - \parbox{\textwidth}{H_{s,w} \cap P(x) \neq \emptyset \text{ implies } H_{s,w} \subseteq P(x) }

A speaker is an authority on a property } P \text{ in } c \text{ iff the speaker has exhaustive knowledge about what is } P. \text{ According to Groenendijk and Stokhof (1984) this means the speaker in context } c \text{ knows } P's \text{ extension in } c, \text{ i.e.}

(ii) For any } w \in H_{s,w(c)} : w \in P(x) \text{ iff } W(c) \in P(x), \text{ for all objects } x

Thus, if (68a) is uttered for instance by the person at the checkout desk who can be assumed to be an authority on the library rules, epistemic possibility is cancelled out and the meaning assigned to the sentence is the following:

(iii) \parbox{
\text{\forall w'. \exists w'' \in Acc_w : \exists x [ x \text{ are books in } w'' \& \text{you borrow } x \text{ in } w'' \& |x| = 5] \&}

\parbox{\text{\neg \exists w'' \in Acc_w : \exists x [ x \text{ are books in } w'' \& \text{you borrow } x \text{ in } w'' \& |x| > 5]}

\]
(71) a. Der Dieb könnte höchstens drei Bücher gestohlen haben.  

'‘The thief might have stolen at most three books."

b. at most [ might [ the thief stole [ three ] many books ] ]

(72) \( \lambda w. H_{s_1, w} \cap (\lambda w'. H_{s_1, w'} \cap (\lambda w''. \exists x [x \text{ are books in } w'' \& \text{ the thief stole } x \text{ in } w'' \& |x| = 3]) \neq \emptyset) \neq \emptyset \& H_{s_1, w} \cap (H_{s_2, w'} \cap (\lambda w''. \exists x [x \text{ are books in } w'' \& \text{ the thief stole } x \text{ in } w'' \& |x| > 3]) \neq \emptyset) = \emptyset \)

The truth conditions in (72) are rather unintelligible, but fortunately can be reduced by applying Zimmermann’s (2000) Self-Reflection Principle. It postulates that, in any world compatible with the speaker’s knowledge in the actual world, the speaker knows what he knows in the actual world, i.e. the speaker is neither ignorant nor uncertain about what he knows.

(73) Self-Reflection Principle  
\hspace{1cm} (Zimmermann, 2000: 284)

Any context \( c \) and worlds \( w \) and \( w' \) satisfy:

If \( w' \in H_{s_1, w} \), then \( H_{s_1, w} = H_{s_1, w'} \)

Applying the Self-Reflection Principle to (72) eliminates one layer of epistemic modality, resulting in the truth conditions (74), which can again be rewritten as (75):

(74) \( \lambda w. H_{s_1, w} \cap (\lambda w'. \exists x [x \text{ are books in } w' \& \text{ the thief stole } x \text{ in } w' \& |x| = 3]) \neq \emptyset \& H_{s_1, w} \cap (\lambda w'. \exists x [x \text{ are books in } w' \& \text{ the thief stole } x \text{ in } w' \& |x| > 3]) = \emptyset \)

(75) \( \lambda w. H_{s_1, w} \cap (\lambda w'. \exists x [x \text{ are books in } w' \& \text{ the thief stole } x \text{ in } w' \& |x| = 3]) \neq \emptyset \& H_{s_1, w} \subseteq (\lambda w'. \neg \exists x [x \text{ are books in } w' \& \text{ the thief stole } x \text{ in } w' \& |x| > 3]) \)

The second conjunct now implies the split reading paraphrased as: ‘It is not compatible with what the speaker knows that the thief stole more than three books.’

In sum, the split-scope effect arising with at most can be attributed to the fact that at most expresses negated epistemic possibility of alternatives ranked higher. Note also that at most is generally not able to take scope above quantified DPs. Sentence (76) only has a reading according to which every girl
is 1.70 m tall or less, which obtains when \textit{at most} is interpreted in the scope of \textit{every girl}. A reading corresponding to the scope order \textit{at most} above \textit{every girl} would be compatible with there being girls who are taller than 1.70 m, as long as there is some girl who is no taller than 1.70 m.

(76) Every girl is at most 1.70 m tall.
    ‘For every girl $x$: $x$ is not taller than 1.70m.’
    ‘Not for every girl $x$: $x$ is taller than 1.70m.’

4.6 Summary

By way of a detailed investigation of the respective expressions, it was shown that the availability of split readings arising with DE-quantifiers other than NIs can be attributed to independently motivated assumptions about the semantics of these expressions. Following recent accounts, the DE-quantifiers exhibiting a split reading in intensional contexts either involve a degree quantifier (less/fewer, little/few) or a focus-sensitive particle (only, at most). It is this additional semantic operator that can be made responsible for split readings, by assuming that it can take wide scope above intensional operators. Moreover, the fact that scope splitting with DE-quantifiers other than NIs is restricted to intensional contexts follows from restrictions on the scope of these operators that have been observed independently.

The analyses discussed, which take the morpho-syntactic make-up of the respective DP seriously, readily explain the availability of split readings. This constitutes a further argument in favour of these decompositional analyses and against an oversimplifying treatment in the style of generalized quantifier theory. Once sophisticated semantic analyses are adopted, neither lexical decomposition nor other mechanisms are needed to account for scope splitting.

As a result of the discussion in this section, the account of scope splitting with NIs should be tailored to them rather than being applicable to DE-quantifiers in general.
5

Distributional Restrictions in Scandinavian

5.1 The distribution of negative indefinites in Scandinavian

In the Scandinavian languages, NIs are subject to certain restrictions exclusive to NIs. This was first observed by Christensen (1986). Further discussion about the distribution of NIs in the Scandinavian languages can be found in Rögnvaldsson (1987) and Jonsson (1996) for Icelandic, Sells (2000) for Swedish, Svenonius (2002) for Norwegian, as well as Kayne (1998) and Christensen (2005).

NIs in Scandinavian can be used as subjects, both in matrix and in embedded clauses, as illustrated in (1).

(1) a. Ingen studenter leser romaner. (Norwegian)
   n-Det students reads novels
   'No students read any novels.'

   b. Dette er en roman som ingen studenter leser.
      this is a novel which n-Det students reads
      'This is a novel which no students read.' (Christensen, 1986: 22)

But NIs in the function of objects are restricted. Consider the following contrast NIs in Norwegian give rise to (examples taken from Christensen, 1986):

(2) a. Jon leser ingen romaner. (Norwegian)
    Jon reads n-Det novels
    'Jon doesn't read (any) novels.'

   b. *Dette er en student som leser ingen romaner.
      this is a student who reads n-Det novels
      'This is a student who doesn't read (any) novels.'

   c. *Jon har lest ingen romaner.
      Jon has read n-Det novels
      'Jon hasn't read (any) novels.'
While NIs can in principle be used as direct objects, as shown in (2a), an NI cannot occur in object position in embedded clauses, as illustrated by the relative clause in (2b). An NI cannot occur in object position either if the verb morphology involves a participle, cf. (2c).

The distributional restrictions found in Norwegian carry over to the other Scandinavian languages, as illustrated in (3).¹

(3) a. *Jag har sett ingenting. (Swedish)
    I have seen n-thing
    'I haven’t seen anything.’

b. *Jeg har læst ingen bøger. (Danish)
    I have read n-DET books
    'I haven’t read any books.’

c. *Jón hefur leisið engar bækur. (Icelandic)
    Jon has read n-DET books
    'Jon hasn’t read any books.' (Rögnvaldsson, 1987: 31)

d. *Eg havi sæð ongan. (Faroese)
    I have seen n-person
    'I haven’t seen anyone.’

    (Lockwood, 2002: 125; cited in Christensen, 2005: 125)

The ungrammatical sentences in (3) can be rescued by ‘shifting’ the NI across the perfect participle.

(4) a. %Jag har ingenting sett. (Swedish)
    I have n-thing seen
    'I haven’t seen anything.’

b. %Jeg har ingen bøger læst. (Danish)
    I have n-DET books read
    'I haven’t read any books.’

c. Jón hefur engar bækur leisið. (Icelandic)
    Jon has n-DET books read
    'Jon hasn’t read any books.’ (Rögnvaldsson, 1987: 31)

¹ In Icelandic, however, NIs can occur in object position in embedded clauses.

(i) Þetta er student sem les engar skáldsögur. (Icelandic)
    this is student who reads n-DET novels
    'This is a student who doesn’t read (any) novels.’ (Christensen, 1986: 33)

This follows from the fact that Icelandic, in contrast to the other Scandinavian languages, has movement of the finite verb from V0 to P in embedded clauses (cf. Vikner, 2001).
d. Eg havi ongan sæð.
   I have n-person seen
   'I haven't seen anyone.'
   (Lockwood, 2002: 125; cited in Christensen, 2005: 125)

Not all speakers of Swedish and Danish find shifting of an NI equally acceptable. This variation between speakers is indicated in (4) by the symbol %. The possibility of shifting an NI also depends on the 'heaviness' of the NI. In Swedish, shifting of pronominal NIs is much better than shifting of NIs that are full DPs (cf. Teleman et al., 1999 vol. 2: 432).

(5) a. Men mänskligheten har ingenting lärt sig. (Swedish)
   but mankind-the has n-thing taught refl
   'But mankind hasn't learned anything.'
   (Teleman et al., 1999, vol. 2: 432)

   b. ?Vi hade inga grottor undersökt.
   we had n-det caves examined
   'We hadn't explored any caves.'
   (Teleman et al., 1999, vol. 2: 432)

Similarly in Danish, shifting an NI becomes less acceptable the heavier the NI is (cf. Christensen, 2005: 65). Speakers who accept (6a) still do not accept (6b).

(6) a. Jeg har intet nyt hørt.
   I have n-thing new heard
   'I haven't heard anything new.'

   b. *Jeg har intet nyt i sagen hørt.
   I have n-thing new in case-the heard
   'I haven't heard anything new in the case.' (Christensen, 2005: 65)

In Norwegian, on the other hand, shifting of NIs in general is stylistically marked and not possible in colloquial Norwegian. It is judged to be archaic or of literary style (indicated by *†).

(7) *†Jon har ingen romaner lest.
    Jon has n-det novels read
    'Jon hasn't read (any) novels.'

The only grammatical way to express the intended meaning in Norwegian uses the negative marker ikke in combination with a (general) indefinite.
Distributional Restrictions in Scandinavian

(8) Jon har **ikke** lest noen romancer. (Norwegian)
Jon has NEG read some novels
‘Jon hasn’t read (any) novels.’

The combination of a negative marker and an indefinite is also used by speakers of Swedish and Danish who do not like the version with shifted NIs as in (4).

(9) a. jag har **inte** sett något ingenting.
Jag har NEG seen something
‘I haven’t seen anything.’

b. Jeg har **ikke** læst nogen bog.
I have NEG read some books
‘I haven’t read any books.’

Comparing cases where a negative marker and an indefinite are used with those where NIs are, respectively, grammatical or ungrammatical leads to a generalization about the distribution of NIs. Consider the following examples (taken from Christensen, 1986):

(10) a. Jon lesers **ikke** noen romancer. (Norwegian)
Jon reads NEG some novels

b. Jon lesers ingen romancer.
Jon reads n-Det novels
‘Jon doesn’t read any novels.’

(11) a. Jon har **ikke** lest noen romancer.
Jon has NEG read some novels

b. *Jon har lest ingen romancer.
Jon has read n-Det novels
‘Jon hasn’t read any novels.’

(12) a. Dette er en student som **ikke** leser noen romancer.
this is a student who NEG reads some novels

b. *Dette er en student som lesers ingen romancer.
this is a student who reads n-Det novels
‘This is a student who doesn’t read any novels.’

In (10), where the negative marker and the indefinite are adjacent, an NI is grammatical. In (11) and (12) on the other hand, the negative marker and the indefinite are not adjacent, and NIs cannot be used. The following
generalization about the distribution of NIs in Scandinavian emerges (see Christensen, 1986):

(13) **Distribution of NIs in Scandinavian:**

NIs are only grammatical if they are right-adjacent to a position which the negative marker can occupy.

As the lowest position the negative marker can occupy is one adjoining VP, NIs can only occur VP-internally if there is no other material inside VP which blocks adjacency between NIs and the VP-adjoined position. ²

5.2 **Analysis of negative indefinites in Scandinavian**

The distributional restrictions NIs exhibit in Scandinavian are unexpected under the standard assumption that NIs in these languages are negative quantifiers. ³

But the observed distribution of NIs follows immediately from the analysis I proposed for NIs in German in Chapter 3. I argued there that NIs have to be immediately adjacent to an abstract negation in order to be licensed. This abstract negation is assumed to have the same distribution as the negative marker, i.e. it can adjoin to verbal projections. In contrast to Scandinavian, NIs in German do not exhibit a restricted distribution. This can be attributed to two differences in the syntax of German and Scandinavian: German is an OV-language and has rather free word order due to the availability of scrambling. The Scandinavian languages, in contrast, have VO word order and do not allow scrambling. From these syntactic differences the differences in the occurrence possibilities of NIs follow.

The central assumptions about the syntax of the Scandinavian languages can be summarized as follows (cf. Vikner, 2001). ⁴ In embedded clauses, the finite verb is in its base position V₀, which precedes the position of the object. The subject, base-generated in a VP-internal position above V₀, moves to

² Christensen (1986) and Dahi (1993) analyse NIs in Scandinavian as post-syntactic amigams of the negative marker and indefinites, similarly to what has been proposed by Jacobs (1982) for NIs in German.

³ Unless one adopts the neg-criterion by Haegeman and Zurutiu, according to which negative quantifiers have to move to the specifier of NegP. Analyses trying to explain the distribution of NIs in Scandinavian along these lines will be discussed in the next section.

⁴ The analysis only applies to the Mainland Scandinavian languages (Swedish, Danish, and Norwegian) and Faroese, but not to Icelandic. Icelandic differs from the other languages as the finite verb moves from V₀ to I₀; see footnote 1. I focus on the Mainland Scandinavian languages.
Spec,IP. Accordingly, the subject obligatorily precedes medial adverbs, such as negation, which are adjoined to VP, and the verb always follows medial adverbs. As an illustration, the structure of the Swedish clause (14) is given in (15).

(14) ...att jag inte läste boken. (Swedish)
    ...that I NEG read.PAST book-the
    ‘...that I didn’t read the book.’

(15) CP
     /  \                      
    /    \        
C'    \        
     /  \        
C₀   IP
     /  \      
att DPᵢₗ o  l'
     /  \      
jag l₀  VP'
     /  \      
Adv VP
     / \    
inte tᵢ  V'
     /  \     \ 
V₀   DP  boken

With this background on the syntax of Scandinavian let us consider the distribution of NIs in these languages. Because the verb in embedded clauses occupies V₀ and is thus in between an adverb and an object, it blocks adjacency between an NI in object position and Op⁻. Hence, in embedded clauses, NIs in object position are not licensed.

(16) *...att jag läste inga böker. (Swedish)
    ...that I read.PAST n-DET.PL books
    ‘...that I didn’t read (any) books.’

(17) *[CP att [IP jag [VP Op⁻ [VP tᵢ läste inga böker ]]]]
In main clauses, the finite verb moves to $C^o$. It is thus out of the way and does not intervene between $\text{Op}$ and an NI in object position. The NI in (18) is licensed by virtue of being adjacent to $\text{Op}$, as shown in (19).

(18) Jag läste inga böcker. (Swedish)
I read.PAST n-Det.PL books
"I didn’t read (any) books."

(19)

\[
\begin{align*}
\text{CP} & \quad \\
\text{DP}_j & \quad \text{C'} \\
\text{jag} & \quad \text{C} \\
\text{läste}_j & \quad \text{t}_i \\
\text{I'} & \quad \text{I}^0 \\
\text{VP'} & \quad \text{VP} \\
\text{\text{Op} \rightarrow} & \quad \text{VP} \\
\text{\text{t}_i} & \quad \text{V'} \\
\text{\text{V}} & \quad \text{DP} \\
\text{\text{t}_j} & \quad \text{inga} \\
& \quad \text{böker}
\end{align*}
\]

In main clauses, however, there can still be material inside VP intervening between the licensing negation and an NI. In (20), the perfect participle remains inside VP and blocks adjacency between $\text{Op}$ and the object NI.

(20) a. *Jon har lest ingen romaner. (Norwegian)
Jon has read n-Det novels
b. [CP Jon, har$_j$ [IP $t_i$ [VP' Op' [VP $t_i$ [V $t_j$ lest ] ingen romaner ]]]]
Other elements inside VP intervening in the licensing of NIs in object position are verb particles\(^5\) and prepositions\(^6\) (examples from Christensen, 1986):

(21) a. *Jon leser ut **ingen romaner.\]** verb particle  
   Jon reads out **n-det** novels  
   ‘Jon doesn’t finish reading any novels.’  

   \[CP\ Jon; leser\ [IP\ t; [VP\ Op\[VP\ t; t; ut\ ingen\ romaner\ \]]]]\]

(22) a. *Jon fortalte om **ingen romaner.\]** preposition  
   Jon told about **n-det** novels  
   ‘Jon didn’t tell about any novels.’  

   \[CP\ Jon,\ fortalte; [IP\ t; [VP\ Op\[VP\ t; t; [PP\ om\ ingen\ romaner\ \]]]]\]

The presence of an indirect object also renders an NI ungrammatical as direct object. This, however, holds only if the indirect object is a full DP but not if it is a weak pronoun.

(23) a. *Jag gav Elsa **ingenting.\]** (Swedish)  
   I gave Elsa **n-thing**  
   ‘I didn’t give Elsa anything.’  

   \[Jag\ gav\ [IP\ t; [VP\ Op\[VP\ t; t; [PP\ om\ ingen\ romaner\ \]]]]\]

   \[Jag\ gav\ honom\ **ingenting.\]**  
   I gave him **n-thing**  
   ‘I didn’t give him anything.’  

   \[Sells, 2000\]

\(^5\) In Norwegian, an object can precede or follow a verb particle. There is thus a grammatical equivalent of (i) where the particle follows the NI.

(i) a. Jon leser **ingen romaner ut.\]** (Norwegian)  
   Jon reads **n-det** novels out  
   ‘Jon doesn’t finish reading any novels.’  

   \[Christensen, 1986: 25\]

This contrasts with Swedish where verb particles obligatorily precede the object. Both versions in (ii) are ungrammatical, (ii-a) because the NI is not licensed and (ii-b) because the object and the verb particle occur in the wrong order.

(22) a. *Jon läste ut **inga romaner.\]** (Swedish)  
   Jon read **n-det** novels  
   ‘Jon didn’t finish reading any novels.’  

   \[Christensen, 1986: 32\]

\(^6\) This contrasts with German where prepositions do not constitute interveners for the licensing of NIs. This issue is taken up in section 5.4.
The contrast in (23) follows from the different positions full DP-objects and object pronouns occupy in Scandinavian. While full DPs cannot move out of VP, weak pronouns undergo movement out of VP into the middle field, known as Object Shift (Holmberg, 1986, 1999). The indirect object in (24a), being VP-internal, intervenes in the licensing of the NI but not the pronoun in (24b) as it has moved out of VP to a position above Op→.

(24)  a. *[CP jag, gavj [IP t; [VP' Op→ [VP t; t, Elsa ingenting ]]]]
      b. [CP jag, gavj [IP t; honomk [VP' Op→ [VP t; t, t, t, ingenting ]]]]

In cases where an NI cannot be used as object because it is not adjacent to Op→, there are two ways to express the intended meaning. The first (and sometimes the only) option is to use the combination of the negative marker and a (general) indefinite, as illustrated in (25b).

(25)  a. *Jag har sett ingenting.  (Swedish)
      I    have    seen    n-thing
      b. Jag har inte sett någotning.
      I    have    NEG    seen    something
      ‘I haven’t seen anything.’

The second option is moving the NI across the intervening material to a VP-adjoined position immediately c-commanded by Op→.

(26)  a. %Jag har ingenting sett.
      I    have    n-thing    seen
      ‘I haven’t seen anything.’
      b. [CP jag, har, j [IP t; [VP' Op→ [VP' ingenting]k [VP t; t, t, sett t, k ]]]]

As mentioned above, not all speakers accept movement of an NI out of VP, depending also on the heaviness of the NI.

Shift of NIs is somewhat exceptional as generally in Scandinavian full DPs serving as object cannot move out of VP to a position in the middle field. This kind of movement, called Object Shift, is usually limited to weak pronouns.” There are a number of differences between Object Shift and shifting of NIs. First, the target position of Object Shift is above medial adverbs, in particular above negation, cf. (27a), while NIs are assumed to be shifted to a position immediately below an abstract negation.

(27)  a. Jag kysste, henne; inte [VP t; t, i]
      I    kissed    her    NEG
      ‘I didn’t kiss her.’

7 Again, Icelandic is exceptional as it also allows Object Shift with full DPs.
b. *Jag har henne; inte [VP kysst t₁]
   I have her NEG kissed
   'I haven't kissed her.' (Holmberg, 1999: 1)

The second difference is that Object Shift is subject to Holmberg's Generalization (Holmberg, 1986, 1999), i.e. movement cannot cross any material inside VP. For instance, movement of a pronoun across a perfect participle in VP is excluded, as shown in (27b). This contrasts strongly with shifting of NIs in (26a). In fact, it is exactly the presence of intervening material in VP which triggers shifting of an NI in the first place.

5.3 **Comparison with other accounts**

The fact that (in some varieties) NI objects can shift to a position in between IP and VP has been the starting point for a number of proposals explaining the distributional restrictions NIs in Scandinavian exhibit in terms of the neg-criterion (cf. Haegeman and Zanuttini, 1991; Zanuttini, 1991; Haegeman and Zanuttini, 1996). The neg-criterion (which I discussed in section 2.2.2.1) postulates that negative expressions, in particular NIs, have to enter a configuration of Spec-Head agreement with a negative head and hence have to move to Spec,NegP. Proposals applying this to Scandinavian include Jonsson (1996), Kayne (1998), Svenonius (2002), and Christensen (2005). They take the position to which object NIs move to be Spec,NegP, assuming that NegP is located between VP and IP. They argue that NIs have to move out of VP overtly because the neg-criterion has to be met at the level of S-structure in Scandinavian. Accordingly, the position of the shifted NI in (28a) is argued to be Spec,NegP, as shown in (28b).

(28) a. %Jag har **ingenting** sett. (Swedish)
   I have n-thing seen
   'I haven't seen anything.'

b. [CP jag, har j [IP t₁ [NegP [ ingenting]ₖ [VP t₁ tₐ sett tₚ ]]]]

Object NIs are also assumed to occupy Spec,NegP in cases where there is no material left inside VP, cf. (29), although movement does not have a visible effect in this case.

(29) a. Jag *ser **ingenting**. (Swedish)
   I see n-thing
   'I don't see anything.'

b. [CP jag, ser j [IP t₁ [NegP [ ingenting]ₖ [VP t₁ tₐ tₚ ]]]]
Negative Indefinites

NIs in subject position (Spec,IP) or in topic position (Spec,CP) are argued to be licensed by virtue of having moved through Spec,NegP.

(30) a. ... att ingen student läser böcker av Chomsky
    ... that n-DEN student reads books by Chomsky

   (Swedish)
   ‘... that no student reads books by Chomsky’

   b. [CP att [IP [ ingen student]; [NegP t_i [VP t_i läser böcker av Chomsky ]]]]]

As shifting of NIs is not possible in (modern) Norwegian, Svenonius (2002) proposes that movement of NIs is subject to Holmberg’s Generalization just like Object Shift, i.e. it cannot cross any VP-internal material. This is suggested by the parallel between movement of NIs and Object Shift, illustrated in (31) and (32).

(31) a. Vi vant ingen konkurranse. (Norwegian)
    we won n-DEN competition

   b. *†Vi kunne [ ingen konkurranse]; [VP vinne t_i ]
    we could n-DEN competition win

   c. *Vi vant [ ingen konkurranse]; [VP i t_i ]
    we won n-DEN competition in

   d. *†...at vi [ ingen konkurranse]; [VP vant t_i ]
    ...that we n-DEN competition won

   (Svenonius, 2002: 125)

(32) a. Vi vant den ikke.
    we won it NEG

   b. *Vi kunne den; ikke [VP vinne t_i ]
    we could it NEG win

8 Pursuing this line, one could argue that in (the varieties of) Swedish and Danish, which allow NI shift, movement of NIs is not subject to Holmberg’s Generalization. However, as pointed out by Sells (2000), the fact that even in these varieties NI shift cannot cross a particle indicates that NI shift is regulated by more factors than Holmberg’s Generalization. In Swedish, shifting an NI across a particle and another part of the verb, as in (i-b), is much more acceptable than merely shifting it across a particle as in (i-a).

   (i) a. *Jon läste inga romaner ut.
      Jon read n-DEN novels out

      ‘Jon didn’t finish reading any novels.

   b. ?Jon har inga romaner läst ut.
      Jon har n-DEN novels read out

      ‘Jon hasn’t finish reading any novels.’

   (Sells, 2000: 252)
c. *Vi vant **den,** ikke [VP i ti ]
  we won it NEG in

d. *...at vi **den,** ikke [VP vant ti ]
  ...that we it NEG won (Svenonius, 2002: 124)

Svenonius (2002) further argues that the movement of NIs is triggered by
their carrying uninterpretable negative features which have to be checked by
interpretable negative features in NegP. He further assumes that checking
of [NEG] features is only possible under Spec-Head agreement, i.e. in the
configuration (33).

(33)

\[
\text{Spec} \quad \text{NegP} \\
\quad \text{[UNE]} \quad \text{Neg'} \quad \text{[INE]} \\
\quad \text{[UNE]} \quad \text{Neg} \quad \text{...}
\]

Note that in this analysis the notion of an (un)interpretable negative feature
does not have any semantic content. Recall that, in the analysis of Zeijlstra
(2004), which I adopt, interpretable negative features are assigned to elements
interpreted as negation, while uninterpretable negative features are assigned
to elements that are semantically non-negative but need to be licensed by
a negation. Svenonius (2002), in contrast, assumes NIs in Scandinavian to
be inherently negative but nevertheless to bear [UNE]-features which trigger
movement to Spec,NegP.

In order to evaluate this proposals, let us start with the question whether
NIs in Scandinavian are inherently negative, an assumption common to
all proposals. On closer inspection, it turns out that NIs in Scandinavian
cannot be negative quantifiers for the same reasons discussed for German
NIs in Chapter 3: they give rise to split readings, which cannot be derived
under the assumption that they are negative quantifiers. In Scandinavian, split
readings with object NIs are less pervasive than in German because NIs are
often blocked in object position, as a result of VO-word order.\(^9\) However,

\(^9\) In the minimalist framework, this means that negation has an EPP-feature (Chomsky, 1995)
requiring that the specifier of NegP be filled.

\(^{10}\) It seems that split readings with respect to universal quantifiers never arise in Scandinavian.
But this phenomenon is rather restricted in German too as not all speakers get split readings with
universal quantifiers. This might be explained by assuming that in these varieties NIs have to be in the
in constellations in which NIs can occur in object position, split readings do arise. This is evidenced by the following examples involving intensional transitive verbs.

(34) a. Vi skylder han ingen nye sjanser. (Norwegian)
we owe him n-DET new chances
‘We don’t owe him any new chances.’ (Svenonius, 2002: 125)

b. Nej tack, jag behöver ingen påse. (Swedish)
no thanks, I need n-DET bag.
‘No thanks, I don’t need a bag.’

c. Jeg söger ingen renøringsdame. (Danish)
I seek n-DET cleaning-lady
‘I don’t seek a cleaning lady.’

Split readings are also possible with respect to modal verbs in varieties allowing NIs to shift out of VP, as the following examples illustrate.

(35) a. Byen er fuldkommen omringet og der kan
town.the is completely surrounded and there can
ingen forsyninger komme ind i byen.
n-DET supplies come in in town.the
‘The town is completely surrounded and supplies cannot come into
the town.’

(Danish, Christensen, 2005: 62)

b. Hann mun ekkert hafa getað gert. (Icelandic)
he will n-thing have could done
‘(I believe) he wasn’t able to do anything.’ (Rögnvaldsson, 1987: 38)

To accommodate the existence of split readings, proponents of the NEG-criterion could assume that NIs in Scandinavian are semantically non-negative, the negative force coming from an abstract negation Op− located in Neg*. This would result in pretty much the analysis I proposed, but with the difference that Op− is located in NegP and checking of [NEG]-features is only possible under Spec-Head agreement in NegP. The configuration required for the licensing of NIs would be the one shown in (36).

immediate scope of negation at LE. As already observed by Linebarger (1987), only nominal quantifiers constitute interveners for the immediate scope requirement. For some reasons modal verbs do not intervene.
One would furthermore have to assume that NIs reconstruct at LF to a lower position in order to be able to derive the correct truth conditions. This would effectively render the NEG-criterion a purely syntactic constraint whose effects have to be undone at LF. This, however, runs counter to the original motivation underlying the NEG-criterion as a constraint motivated by semantics. Recall that in section 2.2.2.1 we saw that the NEG-criterion is not well motivated and does not serve the task it was originally designed for, namely the analysis of negative concord. But it seems to explain the Scandinavian data nicely, so there might be motivation for the NEG-criterion after all.

However, combining this version of the NEG-criterion with the assumption that sentential negation is located in NegP leads to a problem. If one assumes NIs to be semantically non-negative, the semantic negation is invariably located in NegP. There being a unique position for NegP in the clausal architecture, there can only be one semantic negation per clause. In other words, multiple NIs are predicted to have an NC-reading, as they are all licensed by the same semantic negation in NegP. But the Scandinavian languages are DN-languages, i.e. each morpho-syntactically negative expression contributes a negation to the semantics. Although having multiple negations in one clause is rather marked in these languages, it is nevertheless possible. In Swedish, according to Teleman et al. (1999, vol. 2: 201), two negations in the same clause are normally avoided. Such cases do however occur, but only one of the expressions contributing negation can be in the middle field. Teleman et al. (1999, vol. 2: 201) give the following example:

(37) **Inga** svenskarn gär väl **aldrig** i kyrkan.  
**n-det.pl** Swedes **go** **mod-PC** n-time in church

(Swedish)  
'No Swedes never go to church, I suppose.'

Under the assumption that NIs have to be licensed in NegP, which has a unique position in the clause, one can either derive split readings (if it is assumed
that NIs are semantically non-negative) or DN-readings (if it is assumed that NIs are negative quantifiers), but accounting for both kinds of readings is not possible.

Assuming that NIs have to be licensed by moving to Spec,NegP, leads to another problem, as pointed out by Christensen (1986) and Sells (2000). It arises from the observation that object NIs can occur in topic position, even if they cannot be shifted to the position which is arguably Spec,NegP. Consider the following example from Norwegian in which an NI object has been topicalized. (Again, as discussed in section 3.2.3 for German, topicalization of object NIs is marked for reasons of information structure, and can only occur in contexts in which a negative topic makes sense.)

(38) a. **Ingen romaner** har Jon lest. (Norwegian)
    n-det novels has Jon read
    ‘Jon hasn’t read (any) novels.’ (Christensen, 1986: 21)

b. [CP [ ingen romaner], har [IP Jon [NegP t_i; [VP lest t_i]]]]

According to assumptions, the NI in (38a) is licensed by virtue of having moved through Spec,NegP on its way to Spec,CP, as shown in (38b). But this movement to Spec,NegP has to cross the participle in VP, which is excluded under the assumption that Holmberg’s Generalization applies. Recall that Svenonius (2002) argued that, in (modern) Norwegian, movement of NIs to Spec,NegP is subject to Holmberg’s Generalization, rendering (39a) ungrammatical because movement of the NI across the participle in VP violates this generalization.

(39) a. *†...Jon har **ingen romaner** lest. (Norwegian)
    ...Jon has n-det novels read
    ‘Jon hasn’t read (any) novels.’

b. *[[CP Jon har [NegP [ ingen romaner], [VP lest t_i]]]]

The very same movement which is ruled out in (39), namely, movement across the participle, would have to be assumed to take place in (38), but without inducing ungrammaticality. The problem for accounts based on the Neg-criterion, according to which NIs have to be licensed in NegP, is that, although in (38) the movement to Spec,NegP is not possible, the NI is licensed.

Consequently, movement across VP-internal material is allowed only as an intermediate step in the derivation. This problem does not only surface for Norwegian, where movement of NIs to Spec,NegP is argued to be subject to Holmberg’s Generalization, but also in varieties which in principle allow
shifting of NIs across VP-internal material. This is illustrated with the following contrast from Swedish.

(40) a. *Jon har inga romaner berättat om. (Swedish)  
     Jon has n-det.pl novels told about

b. Inga romaner har Jon berättat om.  
n-det.pl novels has Jon told about
     'Jon didn’t tell about (any) novels.' (Sells, 2000: 253)

While extracting an NI out of a PP is ungrammatical under NI shift, cf. (40a), it is possible to topicalize an NI functioning as complement of a preposition, leaving the preposition stranded, cf. (40b). Again, under the assumptions that NIs have to be licensed by moving to or through Spec,NegP, (40a) and (40b) involve the same movement. The only difference is that it is the final step in (40a), while it is an intermediate step in (40b). One would expect movement to be excluded in (40b) in the same way as it is in (40a).

In the analysis I propose, NIs in Scandinavian do not have to move to NegP. What is required is their being adjacent to an abstract negation operator in their surface position. Accordingly, the topicalized NI in (40b) is assumed to be licensed by virtue of being adjacent to Op¬ adjoined to CP.

(41) [CP' Op¬ [CP [ ingen romaner]], har [IP Jon [VP berättat [PP om t, ]]]]

The fact that extraction out of PP is possible if the target position is Spec,CP, but not if it is another position (which I assume to be VP-adjointed), is not a problem, as no intermediate steps in the derivation are assumed. Movement into Spec,CP and shifting of NIs are two independent kinds of movement, which might be restricted by different constraints. While accounts based on the neg-criterion take movement of NIs to a position outside VP as the rule, I assume that it is a last resort, a repair strategy, probably constituting a final instance of the old OV word order Scandinavian used to share with German. This assumption is supported by the fact that not all speakers can shift NIs and that it seems to be a rather formal, literary, or archaic style.

While the distributional restrictions NIs are subject to in the Scandinavian languages prima facie seem to be attributable to the neg-criterion, a closer inspection of the data shows that such approaches are problematic. Two facts in particular were shown to cause problems. The first is the coexistence of split and DN readings; the second is the fact that NIs can occur in topic-position even in cases in which they cannot occur in an intermediate position. The analysis developed to account for scope splitting in German
straightforwardly explains the distributional restrictions in Scandinavian. In fact, the data are predicted by my analysis, given the difference in word order between German and Scandinavian, OV vs. VO.

5.4 Cross-linguistic perspective on negative indefinites in double negation languages

The discussion in this chapter on Scandinavian and Chapter 3 on German showed that there are good reasons to assume that even in DN-languages, NIs are not themselves semantically negative. The main motivation comes from the fact that in these languages NIs give rise to split readings, showing that negation is not interpreted in the position in which it is marked morpho-syntactically. The analysis I propose for NIs in DN-languages receives support from the Scandinavian data. The distribution of NIs in the Scandinavian languages confirms the assumption that NIs in DN-languages are subject to a licensing requirement according to which they have to be adjacent to an abstract negation. The observed differences in the distribution of NIs in German and the Scandinavian languages follow from independent syntactic properties. The fact that in German we do not observe restrictions on the distribution of NIs is explained by the characteristics of German syntax, in particular OV word order and the availability of scrambling. As German is a OV language, the verb (or parts of the verb) cannot disrupt adjacency. The Scandinavian languages, on the other hand, have VO word order (in embedded clauses), scrambling is not available (only Object Shift), and thus VP-internal material blocks the licensing of NIs in object position.

This raises the question how NIs in English fit into this analysis. English, like Scandinavian, has VO word order, but, in contrast to Scandinavian, NIs can always occur in object-position.11 As my aim is a universal claim about the nature of NIs, assuming NIs in English to be inherently negative and not subject to licensing by sentential negation will not do. This move is also not possible in light of the fact that NIs in English also give rise to split readings, as evidenced by the following examples:

(42)  a. There can be no doubt.
    ‘It is not possible that there is a doubt.’

11 Instead of using an NI in object position, the combination of a negative marker and an NPI is usually preferred in English. This will be explained in section 6.4 as a result of the diachronic change English is currently undergoing. The question addressed here is why NIs in object position are licensed at all.
b. Yet here it was, a letter, addressed so plainly there could be no mistake.

'It was not possible that there was a mistake.' \( \rightarrow \) can \( \rightarrow \exists \)

Recall from section 3.1.1 that postcopular subjects in there-constructions can only have narrow scope with respect to modal verbs. The negation in the sentences in (42) nevertheless takes scope above the modal. Potts (2000) observes that the split reading is also prominent when an NI is embedded in the complement of the modal verb need, which does not inflect and takes as complement a bare infinitive without to. Like its German counterpart, this modal is an NPI.¹²

(43) The company need fire no employees. \( \text{(Potts, 2000)} \)

a. 'It is not the case that the company is obligated to fire employees.'
b. 'There are no employees \( x \) such that the company is obliged to fire \( x \).'
c. 'The company is obligated to fire no employees.'

The NPI-verb need precludes the narrow-scope reading of an embedded NI. This can be combined with a there-construction, in which a postcopular subject can only have the de dicto reading. For such sentences, the only possible reading is the split reading (see section 3.1.1. for similar constructions in German). A nice example is the following excerpt from a discussion in the UK parliament.¹³

(44) [This country is very rich indeed and has enormous resources. If this House and this Government wanted to, resources could be found to provide a house for everybody in this country.]
There need be nobody sleeping on the streets; there need be no homelessness and no evictions because people cannot meet the kind of rents being demanded.

The existence of split readings in English provides strong evidence for the assumption that NIs in English too are semantically non-negative indefinites licensed by covert negation. The question is how NIs in English are licensed in object position. Assuming that NIs in English are subject to the same licensing

¹² Potts (2000) also observes that the split reading is not available with must:

(i) The company must fire no employee.

'It is not the case that the company is obligated to fire an employee.' \( \rightarrow \) must \( \rightarrow \exists \)

The fact that the split reading is not available with must while it is with need and can is presumably related to the fact that mustn't is interpreted as negation scoping below must, whereas needn't and can't are interpreted with negation scoping over the modal.

condition as proposed for the other Germanic languages, they have to be adjacent to an abstract negation in the surface syntax. But then the verb, preceding the object, would be expected to intervene in the licensing of NIs, as is the case in Scandinavian.

A solution comes from analyses arguing that predicate raising is possible in English. Building on work on the formation of verb complexes in other languages (Zwart, 1997; Koopman and Szabolcsi, 2000, among others), one can assume that VPs move to the specifier of a projection labelled PredP, located in between VP and IP. For a simple sentence like (45a), this yields the structure (45b).

(45)  
a. Tom will eat salad.  
b. [IP Tom, will [PredP [VP t; eat] t_j]]

In more complex constructions, VP raising can be preceded by other movement operations evacuating objects from VP, rendering movement of VP to PredP an instance of remnant movement. Johnson (2009) argues this to be the case in so-called gapping constructions in English, exemplified in (46).

(46)  
Some will eat beans and others rice.

Johnson (2009) analyses gapping as coordination of vP where VP movement occurs across the board. The conjuncts differ in their object DPs, which is explained by the assumption that VP raising is preceded by a movement operation moving them out of VP to the right, such as heavy NP shift. This results in the representation (47) for sentence (46).

(47)  
[IP some; will [PredP [VP eat t_j] k [VP [VP t_j; t_k beans; ] and [VP others t_k beans; ]]]]

For the issue we are concerned with, i.e. the analysis of NIs in English, a particular implementation of predicate raising can be found in Kayne (1998). He also argues that NIs have to occupy a VP-external position. The derivation of a sentence with an object NI is shown in (48).

(48)  

a. John reads no novels.  
b. John [no novels]; [VP reads t_i; ] by NI-preposing  
c. John [VP reads t_i; ] [ [no novels; ] t_j; ] by VP-preposing

By preposing the remnant VP, the original word order is preserved, although the NI occupies a VP-external position. Kayne (1998) argues that VP-preposing applies in English but not in German and Scandinavian. This

---

14 While I generally neglect the distinction between vP and VP, taking VP to be the smallest projection containing the verb and all its arguments, it is crucial for the analysis of gapped structures as (46). Here the moved constituent VP excludes the subject, which is located in the specifier of vP.
explains the observed contrast between English and Scandinavian regarding the grammaticality of NIs in object position.

Kayne assumes that the VP-external position NIs move to is Spec,NegP. But this assumption is again problematic in the light of the existence of split readings. Kayne (1998) discusses the following example from Klima, (1964: 285):

(49)  I will force you to marry no one.

Kayne derives the wide-scope/narrow-scope ambiguity of sentence (49) in the following way: for the narrow-scope reading ('I will make sure that you don't marry anyone'), the NI no one moves to NegP within the infinitival phrase, followed by VP-preposing of the embedded VP:

(50)  a. I will force you to marry no one
     b. I will [VP force you to [NegP [ no one ], [VP marry t₁ ]]]
         by NI-preposing
     c. I will [VP force you to [VP marry t₁ ; NegP [ no one ], t₁ ]]
         by VP-preposing

The wide-scope reading of (49), on the other hand, is derived by movement of no one to the matrix NegP and subsequent VP-preposing of the matrix VP:

(51)  a. I will force you to marry no one
     b. I will [NegP [ no one ], [VP force you to marry t₁ ]]
         by NI-preposing
     c. I will [VP force you to marry t₁ ; NegP [ no one ], t₁ ]
         by VP-preposing

The truth conditions expressed by (51) are 'there is no one who I will force you to marry' (assuming that the structure that is interpreted is the one before VP-preposing applies, i.e. (51b)). This corresponds to the de re reading. But as Klima, (1964: 284) observed, the prominent reading of sentence (49) is equivalent to (52), i.e. it is the split reading.

(52)  I won't force you to marry anyone.

The split reading cannot be derived under Kayne's analysis, which assumes that NIs are negative quantifiers required to move into Spec,NegP. This assumption, however, can be replaced by my analysis of NIs, while maintaining the rest of his analysis. In this revised version, the NI is assumed to move to a VP-adjoined position immediately below Op→, as shown in (53b). Subsequently, the remnant VP moves above the abstract negation, restoring the original word order.
Negative Indefinites

(53) a. I will force you to marry no one.
    b. I will [Op\rightarrow [VP | no one |, [VP force you to marry t_i]]]
       by NI preposing
    c. I will [VP force you to marry t_i | j [Op\rightarrow [VP | no one |, t_j]]]
       by VP-preposing

Assuming (53c) as the underlying structure of the sentence, the NI is licensed by virtue of being adjacent to Op\rightarrow in the surface syntax. Another option, in the line of Johnson's (2009) analysis of gapping, would be to assume that the NI undergoes rightward movement before the remnant VP moves to Spec,PredP, rendering the NI surface adjacent to Op\rightarrow.

In order to get an LF expressing the split reading, it has to be assumed that all moved material reconstructs into its base position. This yields the LF (54) which expresses truth conditions corresponding to 'I will not force you to marry anyone'.

(54) I will Op\rightarrow [force you | to marry no one ]

To summarize, adopting the independently motivated assumption that VP raising is available in English allows extending the licensing requirements for NIs proposed for other Germanic languages to English. Assuming that possibly intervening VP-internal material moves out of the way, NIs can occupy a position in which they are adjacent to Op\rightarrow.

Another respect in which the distribution of NIs varies across languages concerns their occurrence inside prepositional phrases. In English, PP-internal NIs are unobjectionable, as shown by examples such as (55).

(55) a. Peter danced with no woman.
    b. The company will under no circumstance be liable for damages.

In German and Dutch too, NIs can be used as the complement of prepositions, as shown in (56).

(56) a. Er hat [PP an niemanden] geschrieben (German)
    he has to n-person written
    'He wrote to no one.'
    b. Ik heb [PP met niemand] gepraat (Dutch)
    I have with n-person talked
    'I talked with no one.'

---

15 In English, NIs in postverbal position are somewhat marked and this carries over to NIs inside PPs. See section 6.4 for discussion.
16 This is with the qualification that NPs formed with the negative determiner are not always perfect; see section 3.2.4.
In the Scandinavian languages, however, NIs cannot occur under a preposition, as illustrated in (57).

(57) a. *Jag har peget [PP på ingen]  
    I have pointed at n-person  
    ‘I haven’t pointed at anyone.’  
    (Christensen, 2005: 131)

b. *Jag pratade [PP med ingen]  
    I talked to n-person  
    ‘I didn’t talk to anyone.’  
    (Sells, 2000: 257)

c. *Jon fortalte [PP om ingen romaner]  
    Jon told about n-DET novels  
    ‘Jon didn’t tell about any novels.’  
    (Christensen, 1986: 22)

Regarding the possibility of PP-internal NIs, English, German, and Dutch pattern together in allowing them, whereas the Scandinavian languages prohibit them.

In section 3.2.4 I argued that for German that NIs inside PP are licensed because PP is an extended projection of DP (in the sense of Grimshaw, 1991). This was supported by the fact that wh-movement pied-pipes prepositions, which shows that features on DP percolate to the PP level. As pied-piping of prepositions is possible in English and Dutch, as illustrated in (58), it is expected that NIs in PPs are licensed in these languages too.

(58) a. [PP In which house] do you live?  
    b. [PP Met wie] heb je gepraat?  
    with whom have you talked  
    (Dutch)

In the Scandinavian languages, in contrast, wh-movement cannot pied-pipe prepositions.

(59) a. *[PP Med vem] pratade du?  
    with who talked you  
    (Swedish)

b. Vem; pratade du [PP med ti]?  
    who talked you with  
    ‘Who did you talk to?’

    I would know with who you have spoken  
    (Danish)

b. Jeg gad vide hvem; du har snakket [PP med ti].  
    I would know who you have spoken with  
    ‘I would like to know to whom you have talked.’  
    (Heck, 2008: 119)
   I wonder on with who you have spoken
   (Norwegian)

   b. Jeg lurer på hvem; du har snakket [PP med t₁].
   I wonder on who you have spoken with
   'I would like to know to whom you talked.' (Heck, 2008: 122)

This indicates that feature percolation up to PP is not possible in the Scandinavian languages. Consequently, negative features on an NI are not replicated on PP, and the [uNEG]-feature cannot be checked under adjacency.

Summarizing the cross-linguistic picture that results, we see that English, German, and Dutch, on the one hand, and the Scandinavian languages, on the other hand, pattern together. Scandinavian does not allow NIs to occur inside PP, and blocks them from object position under certain circumstances too. In English, German, and Dutch, VP-internal NIs are possible, and NIs can always occur in object position. PP-internal NIs are explained as a consequence of PP being an extended projection of DP in these languages, as suggested by the availability of pied-piping. Licensing of NIs in object position follows from OV word order in German and Dutch, and the possibility of VP raising in English. In the Scandinavian languages, VO word order is responsible for blocking NIs from object position if there is VP-internal material, and feature percolation in PP does not seem possible. The observed differences in the distribution of NIs can thus be reduced to independently known differences between these languages.
The Nature of the Licensing Relation

6.1 LF movement of negative indefinites

In the discussion of the previous analysis of NC in Chapter 2.1, we came across two proposals involving LF-movement of NIs: one is based on the neg-criterion (Zanuttini, 1991; Haegeman and Zanuttini, 1991, 1996; Haegeman, 1995); the other assumes NIs to be special polarity items (Giannakidou, 1998, 2000). Here I want to resume the discussion of these accounts, as we are now in a position to evaluate them with respect to the question that has occupied us throughout the discussion of NIs in German, namely how split readings arising with NIs can be accounted for.

Both of these approaches share one claim: NIs have to raise at LF to a position above the licensing negation. The licensing of NIs requires an LF configuration schematically shown in (1).

(1)

\[
\begin{array}{c}
\text{NI}_i \\
\forall \\
\neg \\
\ldots t_i, \ldots
\end{array}
\]

The assumption that NIs outscope the licensing negation at LF requires analysing NIs as universal quantifiers. As a universal quantifier outscoping negation is equivalent to an existential quantifier in the scope of negation, the correct truth conditions result. This, however, only holds for simple cases.

If an intensional operator is in the scope of the negation, only a *de re* reading of the NI can be derived from an LF structure like (1). As the NI has scope over
   I wonder on with who you have spoken
   (Norwegian)

   b. Jeg lurer på hvem, du har snakket [PP med ti].
   I wonder on who you have spoken with
   'I would like to know to whom you talked.' (Heck, 2008: 122)

This indicates that feature percolation up to PP is not possible in the Scandinavian languages. Consequently, negative features on an NI are not replicated on PP, and the [UNNEG]-feature cannot be checked under adjacency.

Summarizing the cross-linguistic picture that results, we see that English, German, and Dutch, on the one hand, and the Scandinavian languages, on the other hand, pattern together. Scandinavian does not allow NIs to occur inside PP, and blocks them from object position under certain circumstances too. In English, German, and Dutch, VP-internal NIs are possible, and NIs can always occur in object position. PP-internal NIs are explained as a consequence of PP being an extended projection of DP in these languages, as suggested by the availability of pied-piping. Licensing of NIs in object position follows from OV word order in German and Dutch, and the possibility of VP raising in English. In the Scandinavian languages, VO word order is responsible for blocking NIs from object position if there is VP-internal material, and feature percolation in PP does not seem possible. The observed differences in the distribution of NIs can thus be reduced to independently known differences between these languages.
The Nature of the Licensing Relation

6.1 LF movement of negative indefinites

In the discussion of the previous analysis of NC in Chapter 2.1, we came across two proposals involving LF-movement of NIs: one is based on the neg-criterion (Zanuttini, 1991; Haegeman and Zanuttini, 1991, 1996; Haegeman, 1995); the other assumes NIs to be special polarity items (Giannakidou, 1998, 2000). Here I want to resume the discussion of these accounts, as we are now in a position to evaluate them with respect to the question that has occupied us throughout the discussion of NIs in German, namely how split readings arising with NIs can be accounted for.

Both of these approaches share one claim: NIs have to raise at LF to a position above the licensing negation. The licensing of NIs requires an LF configuration schematically shown in (1).

(1)

\[\begin{array}{c}
\text{NI}_i \\
\forall \\
\neg \\
\ldots t_i \ldots
\end{array}\]

The assumption that NIs outscope the licensing negation at LF requires analysing NIs as universal quantifiers. As a universal quantifier outscoping negation is equivalent to an existential quantifier in the scope of negation, the correct truth conditions result. This, however, only holds for simple cases.

If an intensional operator is in the scope of the negation, only a \textit{de re} reading of the NI can be derived from an LF structure like (1). As the NI has scope over
negation, it will also take wide scope with respect to any operator in the scope of the negation.¹

Giannakidou (2000) claims that NIs in Greek cannot express de dicto readings. When NIs are embedded under intensional verbs, only the de re reading of the restrictor property is reported to be available.

(2) a. I Cleo dhen psaxni KANENA monokero. (Greek)
    the Cleo NEG seek.3SG n-DET unicorn
    (i) ‘There are no unicorns that Cleo seeks.’
    (ii) ‘Cleo doesn’t seek unicorns.’

b. Dhen epitrepete na apolisun KAMIA nosokoma.
    NEG is-allowed subj fire.3SG n-DET nurse
    (i) ‘There is no nurse who they are allowed to fire.’
    (ii) ‘They are not allowed to fire any nurse.’
    (Giannakidou, 2000: 506)

In other strict NC languages, however, de dicto readings are readily available, as shown by the following examples:²

(3) a. Janek nie szuka żadnego jednoróżca. (Polish)
    Janek NEG seeks n-DET unicorn
    ‘Janek doesn’t seek a unicorn.’
    (Richter and Sailer, 1999: 260)

b. Poranenomu ne potreiben nijakyj likar. (Ukrainian)
    injured.DAT NEG need n-DET doctor
    ‘The injured doesn’t need any doctor.’

c. Ty ne dolzhen mne darit nikakich
    you NEG must me.DAT give n-DET.GEN.PL
    podarkov.
    present.GEN.PL
    ‘It is not necessary that you give me presents.’

¹ Of course, this criticism only applies to versions of the neg-criterion requiring the configuration of Spec-Head agreement to hold at LF. If it is assumed that the neg-criterion has to be satisfied at S-structure, reconstruction of NIs at LF would in principle be possible. However, I do not see how reconstruction of NIs could possibly be compatible with the assumptions underlying the neg-criterion, which was originally motivated to account for NC (which it cannot, as shown in section 2.2.2.1, but let us assume for the sake of discussion that it could). It is argued that Spec-Head agreement has an effect on the interpretation inasmuch as the negative meaning component of NIs is ‘absorbed’ in this configuration. One would thus assume that it has to hold at LF, the level where meaning is determined. Another problem arises from the assumption that NIs are universal negative quantifiers (V-): even if NIs could be reconstructed after their negative meaning component has been ‘absorbed’, they would then denote universal quantifiers.

² As in the Slavic languages the determiner is not obligatory, using an Ni, rather than simply the common noun, has some effect. This might be similar to the effect of domain widening, which has been observed to arise with any in English (see Kadmon and Landman, 1993).
Note that what is called the *de dicto* reading here corresponds to what I called the split reading in the discussion of German. In NC languages the negative marker is present on the verb, making explicit that negation takes wide scope with respect to the intensional verb. The kinds of data that have been central to an adequate analysis of NIs in a DN language like German can also provide evidence for or against analyses of NIs in NC languages. Although a universal quantifier taking wide scope with respect to negation is, in most cases, equivalent to an existential quantifier in the scope of negation, there are cases where this equivalence does not hold. This is the case when an intensional operator occurs in the scope of negation. While an existential quantifier can be embedded under the intensional operator and receive a *de dicto* reading, this is not possible for a universal quantifier because in outscoping negation it also automatically takes wide scope with respect to the intensional operator, excluding a *de dicto* interpretation. The availability of split readings, i.e. readings in which an NI is interpreted as *de dicto* while another operator intervenes in the scope of negation, constitutes evidence against accounts based on a requirement for NIs to outscope their licenser at LF.

### 6.2 Unselective binding

The analysis of NIs I propose shares its central ideas with the approach of Ladusaw (1992, 1995). The following three assumptions in particular are common to both approaches: (i) NIs are semantically non-negative indefinites that have to be licensed by a sentential negation; (ii) the licensing negation may be covert; (iii) NIs are self-licensing in the sense that an otherwise unlicensed occurrence of an NI is sufficient to trigger the presence of a covert negation. There are, however, differences in the precise implementation of these ideas and, in particular, the licensing relation employed. It is thus worthwhile to consider Ladusaw's approach in detail.

The licensing condition Ladusaw proposes for NIs crucially relies on NIs being indefinites. Building on the analysis of indefinites proposed by Heim (1982), he assumes that indefinites denote free variables which can be bound unselectively by a variety of operators. Crucially, NIs cannot be bound by an arbitrary binder but only by a negation operator or, more precisely, the existential closure operation that applies in the scope of negation (in Ladusaw's terminology: NIs have to be roofed by negation).

Which truth conditions for clauses with NIs this semantic licensing condition predicts depends on the precise way in which 'unselective' binding is implemented. Ladusaw (1992: 257) speculates that 'the derivation of LFs […] would presumably involve the adjunction of the various negative argument expressions to NegP or TnsP'.
If it is indeed assumed that binding of NIs by negation involves obligatory QR to NegP or TP (which Ladusaw assumes to be located directly below NegP), this would imply that NIs obligatorily take scope above the finite verb. As discussed extensively for German in Chapter 3, assigning wide scope is problematic for NIs embedded under intensional verbs as it is not possible to derive the correct truth conditions. The problem carries over to NC-languages, where the split reading is also readily available for NIs. In NC-languages, the scope of negation is transparent as the negative marker on the verb is present. A case in point is the following Spanish example:

(4) Durante el examen no tiene por que estar presente
    negación has comp be present
    ningún profesor.
    n-det professor

'It is not required that a professor be present during the exam.'

Assuming that NIs undergo QR to a position immediately below (the Θ-closure operator triggered by) the negation operator before unselective binding applies, (4) has the LF (5), where unselective binding is represented as co-indexing between the binding operator and the indefinite (to enhance readability, I will use English-style LF-representations.)

(5)

In order to interpret this LF, let us make the following assumptions about the semantics of indefinites and the Θ-closure operator:3 indefinites introduce free

---

3 I make several simplifying assumptions that deviate from Heim's (1982) system. First, while Heim interprets indefinites as open sentences, i.e. as propositions, I assume a quantifier meaning for
variables, which are interpreted via an assignment function $g$. For instance, the NI no professor receives the following interpretation:

$$[[\text{no professor}]^g = \lambda w. \lambda P_{(e, i)}. g(i) \text{ is a professor in } w \& P(g(i))$$

The semantics of the $\exists$-closure operator is the following:

$$[[\exists_{1, \ldots, n} \phi]^g = \exists x_1 \ldots \exists x_n [[\phi]^g|_{x_1/1, \ldots, x_n/n}]$$

With this the following truth conditions for the LF (5) are derived:

$$\lambda w. \neg \exists x [x \text{ is a professor in } w \& \forall w' [Acc_w(w') \rightarrow x \text{ is present in } w']]$$

This is the de re reading, as one would expect from the NI having scope over the modal verb in the LF (5). This is the only reading that can be derived under the assumptions that indefinites move to a position immediately below their binder at LF. Thus, adopting Ladusaw's analysis, according to which NIs are rooed by negation, in combination with the assumption that in the process of LF-formation NIs move to their binder, one can only derive the wide scope (de re) reading for NIs. It is not possible to derive the split-scope reading.

So why not give up the assumption that indefinites raise prior to binding and instead assume that NIs stay in situ at LF? After all, unselective binding seems a suitable mechanism for interpreting indefinites in situ. However, as pointed out by Reinhart (1998), in situ interpretation of indefinites via unselective binding faces a serious problem, dubbed the Donald Duck Problem.\(^4\)

Reinhart (1998) discusses in situ interpretation of wh-indefinites, for which it would be assumed that the free variables they denote have to be 'unselectively' bound by the question operator. Reinhart observes that in DE-contexts, in situ interpretation results in the wrong truth conditions. This is exemplified in the following question–answer pair (from Heim and von Fintel, 2001):

$$\begin{align*}
(9) & a. \text{ Who didn't see which phonologist?} \\
& b. \text{ Mary didn't see Bob Stalnaker.}
\end{align*}$$

Leaving which phonologist in situ under 'unselective' binding, (9b) is predicted to be a possible answer to the question (9a), given that Bob Stalnaker is not a

indefinites. This makes it possible to simulate Heim's rule of 'NP-prefixing' by QR. Second, instead of assuming quantifiers to range over assignment functions, I continue to use quantification over individuals.

\(^4\) Reinhart's original example is the following, where (i-b) is predicted to be a possible (true) answer to the question (i-a), if which philosopher is interpreted in situ.

$$\begin{align*}
(i) & a. \text{ Who will be offended if we invite which philosopher?} \\
& b. \text{ Lucie will be offended if we invite Donald Duck.}
\end{align*}$$

As the argumentation for this example relies on the assumption that conditionals are interpreted as material implications, I instead use the example from Heim and von Fintel (2001) in (9).
phonologist. To see why this is the case consider the LF (10) which we obtain under the assumption that wh-indefinites stay in situ and are bound by the question operator ?.

(10)  \[ \text{who, did not [ see which phonologist ]} \]

To interpret this LF, we need a new definition of the question operator that deviates from the one defined in Karttunen (1977) by including existential quantification:

\[ [\exists x_1 \ldots \exists x_n \phi]_w = \{ p : \exists x_1 \ldots \exists x_n [ p = \lambda w'. (\exists x_1 \ldots \exists x_n /n) (w') \& p(w)] \} \]

Let us further assume that wh-phrases in situ are type-lifted to generalized quantifiers:

\[ [\text{which, phonologist}]_w = \lambda w. \lambda P_{(e, i)}. \{ g(i) \text{ is a phonologist in } w \& P(g(i)) \} \]

Applying these definitions to the LF (10) yields the following question denotation:

\[ \lambda w. \{ p : \exists x \exists y [ p = \lambda w'. \neg [ x \text{ saw } y \text{ in } w' \& y \text{ is a phonologist in } w'] \& p(w) \} \]

Because the restrictor predicate phonologist is interpreted in the scope of negation, the conditions (13) imposes on possible answers to the question are very weak. Every proposition of the form \( x \text{ didn't see } y \) will make a good answer as long as \( y \) is an individual that is not a phonologist, for instance Bob Stalnaker (or Donald Duck, which explains the name of the problem).

Reinhart's Donald Duck Problem shows that it is dangerous to assume that the variables introduced by indefinites of a certain class (e.g. wh-pronouns) have to be bound by a particular operator (e.g. the question operator) while the restrictor predicate is interpreted in situ. This very kind of binding would also be employed in this particular implementation of Ladusaw's account for NIs in NC-languages, requiring that free variables corresponding to NIs are bound by sentential negation, while restricting material is allowed to be interpreted in situ. There are operators that can take scope in between the licensing negation and the position where the restrictor of NIs is interpreted, namely intensional verbs. Employing the kind of unselective binding just discussed and leaving indefinites in situ, we get the LF (14) for sentence (4).

---

5 Regarding the compositional interpretation procedure for LFs with wh-phrases in situ, I follow the detailed proposal in Heim and von Fintel (2001).
The truth conditions (15) expressed by this LF are very weak and in fact rather odd, corresponding to ‘there is nothing in the actual world that is required to be a professor and be present at the exam’. Assume the accessible worlds to be worlds in which everything prescribed by the examination regulations is the case. Then (15) says that there is no particular individual in the actual world whose being a professor is fixed in the examination regulations. But the purpose of the examination regulations is to fix the modality of the exam and not to determine who is a professor. Hence, (15) does not correspond to a possible reading of the sentence (4).

Reinhart’s Donald Duck Problem for wh-pronouns and the problem discussed for this particular implementation of Ladusaw’s analysis of NIs show the same thing: if certain indefinites are required to be bound by a particular kind of operator, they have to be able to skip intervening potential binders. LFs involving unselective binding across an intervening operator while the restrictor is interpreted in situ have very weak truth conditions (or answer conditions in the case of questions). This is why in the original proposal of Heim (1982) intervening potential binders cannot be skipped and indefinites are subject to QR before unselective binding applies.

In sum, I do not see how Ladusaw’s requirement that NIs be roofed by a negation could be implemented to derive adequate truth conditions. An analysis in which NIs are allowed to be bound in situ faces (a variant of) the Donald Duck Problem. If, on the other hand, indefinites are assumed to undergo QR prior to binding, NIs can only take the same scope as negation does. Under an ‘indefinites as free variables’ analysis, the LF corresponding to the split reading for (4), which is the salient one, looks like (16a), where the variable introduced
by the NI is bound by the existential closure operator applying in the scope of the modal. This LF expresses the desired truth conditions (16b):

\[(16) \quad \begin{align*}
    &a. \not \text{not } [\exists x, \text{no one is a professor be present }] \\
    &b. \lambda w. -\forall w' \in \text{Acc}_w : \exists x [x \text{ is a professor in } w' \& x \text{ is present in } w']
\end{align*}\]

As the LF (16a) illustrates, Ladusaw's licensing conditions according to which free variables introduced by NIs have to be bound by (E-closure under) a negation operator cannot be maintained. The existence of split readings shows that free variables introduced by NIs can be bound by operators other than negation.\(^6\)

### 6.3 Association with operators in a Hamblin semantics

Krätzer and Shimoyama (2002) and Krätzer (2005) propose an analysis similar in spirit to Ladusaw's. In this kind of approach, unselective binding is replaced by a Hamblin semantics. This means that indefinites introduce alternatives that keep expanding until they are evaluated by an operator such as the question operator or existential and universal closure.

In a Hamblin semantics, all expressions denote sets. The denotations of verbs are singleton sets containing the respective properties. For example, the verb *snore* is assigned the following lexical entry:

\[(17) \quad [\text{snore}]^w = \{ \lambda x . \lambda w' . x \text{ snores in } w' \}\]

Indefinites, on the other hand, denote sets of individuals, conceived of as individual alternatives, i.e. they are of semantic type e (rather than (e, t)). For instance, *somebody* denotes the set of human beings in the actual world, while *a doctor* denotes the set of individuals who have the property of being a doctor in the actual world.

\[(18) \quad \begin{align*}
    &a. [\text{somebody}]^w = \{ x : x \text{ is a human in } w \} \\
    &b. [\text{a doctor}]^w = \{ x : x \text{ is a doctor in } w \}
\end{align*}\]

The alternatives introduced by indefinites expand (via 'pointwise' functional application). For instance, the denotation of *somebody snores* is the set of propositions of the form 'x snores', where x is a human being, as shown in (19a). In a world in which there are three human beings, John, Mary, and Bill, the denotation of (19a) is (19b).

\(^6\) The criticism presented in this section also carries over to other accounts that follow Ladusaw's proposal in assuming his semantic licensing condition for NIs, such as Acquaviva (1997).
(19)  
\[
\text{a. } [[ \text{somebody snores} ]]^w = \\
\{ p : \exists x[ x \text{ is a human in } w \& p = \lambda w'. x \text{ snores in } w'] \}
\]
\[
\text{b. } \{ \text{that John snores, that Mary snores, that Bill snores} \}
\]

Alternatives introduced by indefinites are evaluated by certain operators. One of these operators evaluating alternatives is existential closure at the propositional level, as defined in (20).

(20)  
Propositional Existential Closure: \hspace{1cm} (Krater, 2005: 123, Def. 2.1)
Where \( a \) is a set of propositions,
\[
[[ \exists a ]]^w = \{ \lambda w'. \exists p[ p \in [[ a ]]^w \& p(w') ] \}
\]

Applying propositional existential closure to the set of alternatives in (19) results in the singleton set containing the proposition that is true in all worlds in which some alternative in (19) is true, cf. (21).

(21)  
\[
\text{a. } [[ \exists \text{somebody snores} ]]^w = \{ \lambda w'. \exists p[ p \in [[ \text{somebody snores} ]]^w \& p(w') ] \}
\]
\[
\text{b. } \{ \lambda w'. \text{John snores in } w' \lor \text{Mary snores in } w' \lor \text{Bill snores in } w' \}
\]

Krater and Shimoyama argue that the behaviour of certain indefinite series can be explained if it is assumed that these indefinites are selective in the sense that they require the alternatives they introduce to be evaluated by a particular operator. For instance, it is assumed that alternatives introduced by \( \text{wh} \)-indefinites have to be bound by the question operator.

In Krater and Shimoyama (2002), this idea is spelled out by using pairs of uninterpretable/interpretable features. But in contrast to the assumptions about feature licensing that I have been making, Krater and Shimoyama assume that licensing of features involves feature movement (cf. Pesetsky, 2000). In order to avoid confusion with the kind of features I have been employing, I will use a different label for features of the Krater and Shimoyama kind and prefix their features with a ‘\( \star \)’. A further assumption is that feature movement is blocked by non-matching operators. This guarantees that indefinites semantically associate with a matching operator. In a Hamblin semantics, the alternatives introduced by an indefinite will invariably be evaluated by the operator encountered next. The alternatives introduced by an indefinite with the feature [\( \star uX \)] thus have to be evaluated by an operator with [\( \star iX \)]. In a configuration in which an element with the feature [\( \star uX \)] encounters the wrong kind of operator, a feature clash results.

Krater and Shimoyama analyse intervention effects exhibited by \( \text{wh} \)-phrases in German (see Beck, 1996) as a result of feature mismatch. In (22)
for instance, movement of the feature [*uQ] on the wh-indefinite in situ is blocked by the intervening [*iNeg] feature on the negative marker.

(22) a. *Was hat sie nicht wem gezeigt? (German)
     what has she NEG who.DAT shown
     'What didn't she show to whom?'

b. * [ ?[*iQ] was[*uQ] sie nicht[*iNeg] wem[*uQ] gezeigt hat ]

Kratzer and Shimoyama further argue that ein-indefinites in German are lexically marked for existential interpretation, i.e. they have the feature [*uƎ]. They use this to explain the fact that indefinites of the ein-series are 'allergic' to the negative marker nicht, as illustrated in (23a). Cases like (23a) are ruled out as instances of a feature mismatch: the feature [*uƎ] clashes with the negative feature on the negative marker, as shown in (23b).

(23) a. *Franck hat nicht ein Auto. (German)
     Frank has NEG a car
     'Franck doesn't have a car.'

b. *Franck nicht[*iNeg] ein[*uƎ] Auto hat

Note that in order for this explanation to work, it has to be assumed that negation is the first operator to be encountered, and accordingly that the existential closure operator defined in (20) does not apply in the scope of negation. Otherwise, the Ǝ-operator would be the first operator the ein-indefinite bumps into, and no feature mismatch would result. For this reason, Kratzer and Shimoyama build existential quantification over propositions into the lexical entry of sentential negation.

7 Kratzer and Shimoyama discuss the irgendei-series in German. The semantics of these indefinites is more complex, as they can be used as NPIs as well as free choice items. Irgend-indefinites are grammatical in combination with a negative marker, as in (i-a), but such cases only have an interpretation with metalinguistic negation referring to the free choice component, which Kratzer and Shimoyama (2002) derive as an implicature. In other DE-contexts the free choice implicature disappears, cf. (i-b), and irgendein behaves like an NPI.

(i) a. James hat nicht irgendein Auto. (German)
     James has NEG irgendei+one car
     'James doesn't have any car.'
     'James doesn't have just any car.' (He has an Aston Martin.)

b. Niemand hat irgendein Auto gesehen.
     n-person has irgendei+one car seen
     'Nobody has seen any car.'

I will use ein-indefinites for illustration, but the points regarding the interaction of indefinites and negation carry over to indefinites of the irgendei-series (with the difference that the corresponding sentences with irgendein are not ungrammatical but only have a reading with metalinguistic negation as in (i-a)).
(24) Propositional Negation: \( \text{(Kratzer, 2005: 123, Def. 2.3)} \)
Where \( a \) is a set of propositions,
\[
\llbracket \text{Neg } a \rrbracket^w = \{ \lambda w'. \neg \exists p \left[ p \in \llbracket a \rrbracket^w \land p(w') \right] \}
\]

To explain the fact that \textit{ein}-indefinites are grammatical in the scope of NIs, cf. (25), it has to be assumed that in such cases \textit{ein}-indefinites associate with a \( \exists \)-operator.

(25) Niemand hat ein Auto gesehen. (German)
\( n \)-person has a car seen
‘No one saw a car.’

In Kratzer and Shimoyama’s system, alternatives introduced by indefinites can not only be evaluated at the propositional level but also by generalized quantifiers operating on individual alternatives. Existential quantification over individual alternatives is built into the lexical entries for generalized quantifiers, but only for the restrictor. In their scope, propositional existential closure is assumed to apply. The lexical entry for negative quantifiers in (26) illustrates this.

(26) Generalized Quantifier Negation: \( \text{(Kratzer, 2005: 123, Def. 3.3)} \)
For \( \llbracket a \rrbracket^w \subseteq D_x \):
\[
\llbracket \text{Neg } a \rrbracket^w = \{ \lambda P. \lambda w'. \neg \exists a \left[ a \in \llbracket a \rrbracket^w \land P(a)(w') \right] \}
\]

Under the assumption that NIs in German are negative quantifiers, sentence (25) is thus assigned the structure (27), where the next operator the \( \ast \text{u} \exists \)-feature on \textit{ein} encounters is the \( \exists \)-operator closing off the scope of the negative quantifier. Consequently its licensing requirements are met.

(27) \( \llbracket \text{Neg[\ast Neg]} \niemand \left[ \left[ \exists[\ast \exists] \text{ein[\ast \exists]} \right] \text{Auto gesehen} \right] \)

Likewise, Kratzer and Shimoyama assume existential closure to apply in the scope of modals. This is needed to account for occurrences of \textit{ein}-indefinites under modals, which can receive \textit{a de dicto} interpretation, as evidenced by (28).

(28) Mary musste einen Arzt heiraten. (German)
\( \text{Mary had-to a doctor marry} \)
‘Mary had to marry a doctor.’

To derive the narrow scope reading of \textit{ein Arzt} in (28), the individual alternatives introduced by \textit{ein Arzt} (‘a doctor’) have to be evaluated by an \( \exists \)-operator in the scope of the modal. Moreover, to prevent a feature clash, a \( \exists \)-operator has to be present in the scope of the modal at LF. To this end, Kratzer and Shimoyama assume that the scope of modals is closed off by an independent \( \exists \)-operator, rather than building existential closure of the
Negative Indefinites

scope into the lexical entry of modals (in contrast to propositional negation, cf. (24)). Kratzer (2005: 130) states this in the following way:

\[(\exists [\exists] a)^w = \{ \lambda w'. \forall w'' (Acc_w(w'')) \rightarrow \exists p [ p \in [a]^{w''} \& p(w'')] \}\]

With these assumptions, the structure underlying the de dicto reading of (28) is (30).

\[(30)\quad \text{Mary} [\exists_{\ast \exists}] \text{einen}_{\ast \exists} \text{Arzt heiraten ] musste}\]

Regarding the application of existential closure, Kratzer and Shimoyama have to stipulate an asymmetry between modal operators and generalized quantifiers, on the one hand, and negation, on the other hand. The operation of existential closure applies in the scope of modals and generalized quantifiers, but not in the scope of negation. This is necessary to account for the fact that ein-indefinites can occur in the immediate scope of a modal, but not of a negation. This rules out the option that an \(\exists\)-operator closes off the scope of all operators, as in Heim (1982: 143). Rather, Kratzer and Shimoyama have to assume that existential closure is restricted to the scope of tripartite structures, induced by generalized quantifiers and modal operators, but does not apply in the scope of sentential negation.

Besides this unwelcome asymmetry there are further problematic aspects of Kratzer and Shimoyama's approach. For one thing, the assumption that the scope of modals is closed off by an \(\exists\)-operator makes wrong predictions about the distribution of ein-indefinites: ein should be able to co-occur with a negative marker as long as a modal operator takes scope in between. But a sentence like (31a) is plainly ungrammatical, even in a context in which the narrow scope reading of einen Arzt ('a doctor') is salient.\(^8\)

\[(31)\quad a. \text{Mary darf nicht einen Arzt heiraten. (German)}\]

'Mary may NEG a doctor marry'

b. Mary nicht_{\ast \exists Neg} [\exists_{\ast \exists} \text{einen}_{\ast \exists} \text{Arzt heiraten ] darf }]

As Kratzer and Shimoyama assumes that an \(\exists\)-operator closes off the scope of modals, this sentence (under the narrow scope reading) is assigned the

---

\(^8\) In fact, Kratzer and Shimoyama seem to be aware that an intervening modal operator cannot rescue (irgend)ein-indefinites when they co-occur with the negative marker. Kratzer and Shimoyama (2002) use an example involving auf keinen Fall ('under no circumstances') to discuss the behaviour of irgend(ein) in contexts of negated possibility and remark that 'auf keinen Fall was chosen, since irgend(ein) can't be in the scope of inflectional negation' (Kratzer and Shimoyama, 2002, fn.7). But for some reason, they do not take this fact into account in their analysis.
structure (31b), which is well-formed. Thus, the ungrammatical sentence (31a) is not ruled out by Kratzer and Shimoyama’s system. The ungrammaticality of sentences like (31a) demonstrates that the allergic behaviour ein-indefinites in German show towards the negative marker cannot be attributed to a feature mismatch.

That it is in fact not a condition on the interpretation of ein-indefinites that prevents them from occurring adjacent to a negative marker can be seen from the fact that (32a) is grammatical, although it has precisely the same truth conditions as the ungrammatical (23), repeated as (32b):

(32) a. Ein /Auto hat Frank nicht.  
    a car has Frank neg
    ‘Frank doesn’t have a car.’

b. *Frank hat nicht ein Auto.  
    Frank has neg a car
    ‘Frank doesn’t have a car.’

The difference between the sentences in (32) lies in their information structural properties. In (32a), ein Auto (‘a car’) serves as S-topic (see section 3.2.2) and is topicalized to Spec,CP. In both sentences, the indefinite is interpreted in the scope of negation, and they have identical LFs and ordinary semantic values. The well-formedness of (32a) shows that ein-indefinites can perfectly well be interpreted in the immediate scope of negation. The minimal pair in (32) also makes clear that what we are dealing with is in fact a constraint on surface syntax rather than semantics.9

A related problem arises for NIs in NC-languages. Kratzer (2005) rephrases Ladusaw’s analysis in the framework of a Hamblin semantics. This means that NIs are assigned the feature [\*uNeg] which ensures that the alternatives they introduce are evaluated by a negation operator. It would further have to be assumed that NC-languages do not have generalized quantifier negation at their disposal, and n-words invariably associate with a propositional negation. But this means that the kind of examples that were shown to be problematic for Ladusaw’s account also pose a problem to an analysis in the style of Kratzer and Shimoyama. In particular, because it is assumed that Ǝ-closure applies in the scope of modals, sentences such as the following Spanish example are predicted to be ungrammatical (or at least not to have a de dicto reading for the NI), contrary to fact.

---

9 The fact that general indefinites can be interpreted in the scope of negation also provides a conclusive argument against a treatment in terms of positive polarity items (vanden Wyngaerd, 1999); see section 6.4.
(33) a. **No hace falta que te pongas ninguna chaqueta.**
    neg makes need comp you wear.subj n-det jacket
    'You don't need to wear a jacket.'

b. *No[\*uNeg] hace falta que \(3[\*e]\) te pongas ninguna[\*uNeg] chaqueta*

In the structure (33b), representing the *de dicto* reading, the feature \([\*uNeg]\) on the n-word bumps into the \(3\)-operator in the scope of the modal before it reaches the matching negation operator. Therefore, a feature clash leading to ungrammaticality is predicted to arise.

This attempt to make indefinites selective for certain operators does not only make wrong predictions where the interaction of indefinites and negation is concerned. It also makes wrong predictions for other types of indefinites. For *ein*-indefinites in German, the assumption that they select for the \(3\)-operator is contradicted by the fact that *ein*-indefinites give rise to generic interpretations, as in (34).

(34) **Ein Hund hat vier Beine.**
    a dog has four legs
    'Dogs in general have four legs.'

The availability of generic interpretations shows that *ein*-indefinites can associate not only with the \(3\)-operator but also with a quasi-universal generic operator.

The claim that wh-indefinites in German can associate only with a question operator, which Kratzer and Shimoyama make to account for intervention effects in questions, is not tenable either. In German, wh-indefinites can also be interpreted as existentials. Sentence (35a), for example, can not only be used as an echo-question as in (35a-ii) but also as a plain declarative with *was* ('what') being equivalent to *etwas* ('something'), as shown in (35a-i). Example (35b) illustrates that wh-indefinites in situ can receive an existential interpretation even in questions.

(35) a. **Peter hat was gemerkt.**
    Peter has what noticed
    (i) 'Peter has noticed something.'
    (ii) 'Peter has noticed WHAT?'

b. **Wer hat was gesehen?**
    who has what seen
    (i) 'Who has seen something?'
    (ii) 'Who has seen what?'
The problem raised by generic interpretations of *ein*-indefinites and existential interpretations of wh-indefinites might be faced by assuming them to be underspecified for the operators they associate with. Accordingly, *ein* would be specified for existential or generic interpretation, and wh-indefinites for association with a question operator or an *∃*-operator. For the latter, it might even be assumed that intonation contributes to specification, as a wh-indefinite in situ requires stress in order to be interpreted as a question pronoun, while the existential interpretation goes with plain intonation. But I do not see how the account could be modified to accommodate the facts discussed above concerning the interaction of indefinites and negation.

Let me be clear about what I believe causes the problems for Kratzer and Shimoyama's approach. I do not consider the use of feature movement per se problematic. Rather, the problems are caused by the way Kratzer and Shimoyama link feature movement with a Hamblin semantics. While feature movement might be used as a mechanism to account for intervention effects (as in Pesetsky, 2000), it does not lend itself to force 'selective' indefinites to associate with certain operators in a Hamblin semantics. In the latter application, all non-matching operators will constitute interveners. But the class of interveners must—to some extent—be defined independently of the property of being a semantic operator. In particular, modals (and other proposition-embedding predicates) are semantic operators (or cause the presence of such operators by triggering existential closure in their scope), but, crucially, they do not constitute interveners.

I suspect that once the 'allergic' behaviour (*irgend*)ein-indefinites show towards the negative marker is acknowledged to be a phenomenon different from intervention effects (arising in wh-questions and the licensing of NPIs and n-words), Kratzer and Shimoyama's approach can be made to work for

---

10 In fact, the assumptions regarding the checking of [unel]-features I have made might have to be amended by feature movement. The reason is that the licensing of n-words in NC-languages exhibits intervention effects. This is illustrated in the following Italian example from Guerzoni (2006: 91).

(i) Dubito che ogni ragazzo abbia invitato nessuno. (Italian)  
doubt.1sg that every boy have.3sg.subj invited n-person
   *doubt > ∀ > ∃
   'I doubt that every boy invited somebody.'
   doubt > ∃ > ∀
   'I doubt there is anybody every boy invited.'

I have been arguing that the licensing of NIs is purely syntactic in nature, and consequently a syntactic mechanism to derive intervention effects is needed in order to account for intervention effects arising in the licensing of NIs. Feature movement is the only mechanism to explain intervention effects I know of that is purely syntactic in nature. A semantic explanation in the style of Beck (2006) does not seem to be possible.

I leave for future research the investigation of intervention effects in licensing of NIs and the consequences that might result for the nature of intervention effects.
the latter (by building existential closure of the scope into the lexical entry of modals rather than assuming a separate operator). But such an analysis would be more or less equivalent to one using feature movement without a Hamblin semantics, and the arguments in favour of a Hamblin semantics would be lost.

6.4 Distribution of indefinites in negative contexts

The discussion in the two preceding sections showed that it is not possible to explain the distribution of certain indefinite series by assuming that these indefinites are selective for the semantic operators they associate with. So how can the distribution of indefinites with respect to negation be accounted for? This question will be addressed here.

Let me start by recapitulating the facts from German regarding the distribution of indefinites in negative contexts. Besides the NI-series, German comprises a defective series of general indefinites (in the terminology of Haspelmath, 1997) and the irgend-series used as NPIs and free choice items. The only indefinite item in German exclusively used as NPI is the temporal adverb je(mals) (‘ever’). This is summarized in Table 6.1.

General indefinites in German can generally occur in all environments, including DE-contexts (and anti-additive contexts), cf. (36b):

(36) a. Peter hat jemanden/ etwas/einen Hund gesehen.  
Peter has someone/ something/a dog seen
‘Peter saw someone/something/a dog.’

b. Niemand hat jemanden/ etwas/ einen Hund gesehen.  
n-person has someone/ something/ a dog seen
‘No one saw anyone/anything/a dog.’

General indefinites, however, cannot occur adjacent to the negative marker nicht, as illustrated in (37a). The only way to express the intended meaning is by using an NI instead, as in (37b).

---

This claim should be restricted to lexically simple indefinites, as pointed out by an anonymous reviewer. There are a number of compound indefinite DPs that denote minimizers and are exclusively used as NPIs (in their idiomatic sense), e.g. ein roter Heller (‘a red penny’) and eine Menschenseele (‘a human soul’). In this section, only lexically simple indefinites are considered.
Table 6.1 Indefinites-series in German

<table>
<thead>
<tr>
<th>general</th>
<th>NPI/free choice</th>
<th>NPI</th>
<th>NI</th>
</tr>
</thead>
<tbody>
<tr>
<td>person</td>
<td>jemand</td>
<td>irgend-wer/irgend-jemand</td>
<td>–</td>
</tr>
<tr>
<td>thing</td>
<td>etwas</td>
<td>irgend-was/irgend-etwas</td>
<td>–</td>
</tr>
<tr>
<td>time</td>
<td>–</td>
<td>irgend-wann</td>
<td>je(mals)</td>
</tr>
<tr>
<td>place</td>
<td>–</td>
<td>irgend-wo</td>
<td>–</td>
</tr>
<tr>
<td>manner</td>
<td>–</td>
<td>irgend-wie</td>
<td>–</td>
</tr>
<tr>
<td>DET</td>
<td>ein</td>
<td>irgend-ein(SG), irgend-welche(PL)</td>
<td>–</td>
</tr>
</tbody>
</table>

(37) a. *Peter hat nicht { jemanden/ etwas/ einen Hund }  
Peter has neg someone/ something/ a dog  
gesehen.  
seen  

b. Peter hat { niemanden/ nichts/ keinen Hund } gesehen.  
Peter has n-person/ n-thing/ n-det dog seen  
‘Peter didn’t see anyone/anything/a dog.’

Note that sentences like (37a) are plainly ungrammatical, and do not receive an interpretation with the indefinite scoping above negation. This is a difference between general indefinites in German and some indefinites in English. (The English glosses of the German examples are therefore not entirely adequate.)

There are only two kinds of cases in which a general indefinite can appear adjacent to nicht. The first kinds are instances of contrasting negation, where a continuation with sondern (‘but’) is required:

(38) Peter hat nicht einen Hund gesehen *(sondern eine Katze).  
Peter has neg a dog seen but a cat  
‘Peter didn’t see a dog, but a cat.’

There are a couple of other systematic exceptions all involving the determiner ein. If ein is stressed, it can also be adjacent to nicht. Such cases can however be assumed to involve the homophone numeral rather than the indefinite determiner, as suggested by the English paraphrase of sentences like (i).

(i) Er hat nicht Einen Moment gezögert.  
he has neg one moment hesitated  
‘He didn’t hesitate one moment.’

Adjacency of nicht and ein is also possible if the latter is accompanied by einzigen (‘single’):

(ii) Er hat nicht einen einzigen Moment gezögert.  
he has neg a single moment hesitated  
‘He didn’t hesitate a single moment.’
The second kinds of cases where a general indefinite can occur adjacent to \textit{nicht} constitute contexts of so-called ‘light’ negation (cf. Schwarz and Bhatt, 2006). Light negation generally occurs in DE-environments, such as before-clauses, the restrictor of a universal quantifier, or antecedents of counterfactual conditionals. Light negation usually does not contribute a negation to the semantics, as the following example of light negation in a before-clause and the corresponding English paraphrase makes clear.

(39) Wir werden \textit{nicht} \textit{ruhen}, \textit{bevor} \textit{nicht} \textit{ein Verdächtiger festgenommen wurde.}\nonumber\textit{We will not rest before a suspect arrested was.}\nonumber\textit{‘We won’t rest until a suspect has been arrested.’}

Contrastive and light negation also differ in another respect from sentential negation. While definite descriptions in German have to scramble across sentential negation, cf. (40a), this is not required for contrastive and light negation, cf. (40b, c).

(40) a. Peter hat \textit{den Hund nicht} gefüttert.\nonumber\textit{Peter has the dog fed}\nonumber\textit{‘Peter didn’t feed the dog.’}

b. Peter hat \textit{nicht den Hund} gefüttert *(sondern die Katze).\nonumber\textit{Peter has the dog fed but the cat.}\nonumber\textit{‘Peter didn’t feed the dog (but the cat).’}

c. \textit{Bevor} du \textit{nicht den Hund} gefüttert hast, \textit{werden wir keine Ruhe haben.}\nonumber\textit{before you fed the dog has, will we have silence have}\nonumber\textit{‘We won’t have peace until you fed the dog.’}

Summarizing the data, general indefinites are prohibited in positions adjacent to a marker of sentential negation. Recall from the previous section that this really is a constraint on surface syntax rather than one on interpretation. General indefinites can be interpreted in the (immediate) scope of sentential negation, as long as they occupy a a higher position in the surface syntax, in particular a topic position, as in (41).

(41) \textit{Einen/ Schraubenzieher habe ich \textit{nicht} bekommen.}\nonumber\textit{a screwdriver have I fed got}\nonumber\textit{‘I didn’t get a screwdriver.’}
The occurrence restrictions general indefinites show with respect to sentential negation can therefore not be accounted for by assuming that general indefinites are positive polarity items anti-licensed in the context of sentential negation (contra vanden Wyngaard, 1999).

It is instructive to note that the temporal adverb je(mals) (‘ever’), which is an NPI according to the contrast in (42a), exhibits the same allergy towards sentential negation, cf. (42b):

(42) a. { *Jeder/keiner } von uns ist je(mals) in Paris gewesen.
    every/n-DET of us is ever in Paris been
    ‘Everyone/none of us has ever been to Paris.’

    b. Ich bin { *nicht je(mals)/ nie(mals) } in Paris gewesen.
    I am NEG ever/ n-time in Paris been
    ‘I have never been to Paris.’

Similar facts hold for the members of the irgend-series which can be used as NPIs or free choice (FC) items, as illustrated in (43a) and (43b). But when irgend-indefinites are adjacent to the negative marker nicht as in (43c), they cannot be interpreted as NPIs but only as FC items, with negation referring to the free choice component.

(43) a. Ich bezweifle, dass irgendjemand kommen wird.
    I doubt that anybody come will
    ‘I doubt that anybody will come.’  [NPI]

    b. Du darfst irgendeine Aufgabe auswählen.
    you may any task choose
    ‘You may choose any problem.’  [FC]

    c. Peter hat nicht irgendeinen Hund.
    Peter has NEG any dog
    ‘Peter doesn’t have any dog.’  [*NPI]
    ‘Peter doesn’t have just any old dog.’  [FC]

The distribution of indefinites in negative contexts that is found in German is by no means special. In fact, it parallels the distribution of indefinites in Slavic languages. For these languages in particular, the distribution of NPIs has been widely discussed (among others Progovac (1994) for Serbian/Croatian; Blaszcak (2001) for Polish; Paslawska (2003) for Ukrainian; and Pereltsvaig (2004) for Russian). By way of illustration, I will discuss the distribution of indefinites in negative contexts in Ukrainian and focus on three series of indefinites, which are shown in Table 6.2: the general series, formed from interrogative indefinites by suffixing -s’, the series formed by the suffix -nebud’ (lit: ‘not be.subj’), whose members can
be used as NPIs and free choice items, and the NI-series involving the prefixing *ni*-

Indefinites of the general series in Ukrainian are used in positive contexts, but they can also occur in all contexts in which NPIs are licensed (without receiving a 'specific' interpretation). One such environment relates to clausal complements of adverssative predicates. Note that n-words are not licensed in this environment:

(44) Sumnivajusja, ščo Ol’ha [ščos’/ ščo-nebud’/ *niščo] jila. 
doubt.isg that Olha something/ anything/ n-thing ate 
‘I doubt that Olha ate anything.’

However, when general indefinites co-occur with the negative marker on the verb, they are obligatorily interpreted as scoping above negation:

(45) Ol’ha ščos’ ne jila. 
Olga something NEG ate 
a. *‘Olga didn’t eat anything.’ 
b. ‘There was something Olga didn’t eat.’ 

The members of the NPI-series in Ukrainian are licensed in all typical contexts known to allow NPIs, with one crucial exception: NPIs cannot co-occur with clause-mate sentential negation, where the corresponding NI has to be used.13

---

<table>
<thead>
<tr>
<th>DET</th>
<th>jakyjs’</th>
<th>jakyj-nebud’</th>
<th>žođen (nijakyj)</th>
</tr>
</thead>
<tbody>
<tr>
<td>manner</td>
<td>jakos’</td>
<td>jak-nebud’</td>
<td>nijak</td>
</tr>
<tr>
<td>place</td>
<td>des’</td>
<td>de-nebud’</td>
<td>nide</td>
</tr>
<tr>
<td>time</td>
<td>kolyjs’</td>
<td>koly-nebud’</td>
<td>nikoly</td>
</tr>
<tr>
<td>thing</td>
<td>ščos’</td>
<td>ščo-nebud’</td>
<td>niščo</td>
</tr>
<tr>
<td>person</td>
<td>xtos’</td>
<td>xto-nebud’</td>
<td>nixto</td>
</tr>
</tbody>
</table>

---

13 In contrast to NPI/FC indefinites in German, *nebud’*-indefinites in Ukrainian do not result in a reading with metalinguistic negation referring to the free choice component when they co-occur with the negative marker on the verb. This is due to the fact the expression of metalinguistic negation in Ukrainian requires the negative marker *ne* to immediately precede the constituent it refers to, as in (i):

(i) Olha jila ne ščo-nebud’. (Vona vybyrala najsmiřiš.) 
Olha ate NEG anything she chose tastiest 
‘Olha didn’t eat just anything.’ (She chose the tastiest things.)
(46) Ol'ha { ničoho / *ščo-nebud' } ne jila.
Olga n-thing/ anything NEG ate
'Olga didn't eat anything.'

The distribution of NPIs can be summarized as follows. In Ukrainian—as well as in the other Slavic languages and German—NPIs are possible in DE-contexts but excluded in a subset thereof, i.e. in the context of clause-mate sentential negation. Because the contexts licensing NPIs have a hole in the middle and therefore look like a bagel (see Figure 6.1), the question how the distribution of NPIs in these languages can be explained has been dubbed the 'Bagel Problem' by Pereltsvaig (2004).

For expressions requiring a DE-context but unable to co-occur with clause-mate sentential negation, van der Wouden (1997) proposes an analysis as bipolar items. This means they are classified both as weak NPIs, licensed in DE-contexts, and as weak PPIs, anti-licensed in antimorphic contexts (recall that sentential negation is an antimorphic operator). Note that an analysis in the style of van der Wouden (1997), which postulates the existence of bipolar items combining licensing requirements of NPIs with licensing requirements of PPIs, is incompatible with semantic/pragmatic approaches to the licensing of polarity items. Such approaches seek to derive the licensing requirements of polarity items from properties inherent in the semantics of these items. This line of thinking about the licensing of NPIs, originating with Kadmon and Landman (1993), is intuitively very appealing and has been pursued by many scholars (among others Krifka, 1995; Lahiri, 1998; Chierchia, 2006). Under such a perspective on NPI-licensing, the fact that NPIs are licensed in DE-contexts is due to these contexts constituting
exactly the contexts in which certain requirements inherent in the semantics of NPIs are fulfilled. There are different proposals how to spell out this precisely. To take just one example, Kadmon and Landman (1993) argue that domain widening induced by indefinite NPIs has to lead to a stronger statement, and this is the case precisely in DE-contexts. Since the requirements NPIs pose on the context are met in DE-environments, they are also met in every subset thereof, and in particular in the context of sentential negation.

A semantic characterization of the licensing requirements of the NPI-series (in Slavic and German) in terms of monotonicity properties is also not possible for empirical reasons. As Perel'svaig (2004) points out, NPIs are not excluded from all antimorphic contexts but only from those antimorphic contexts in which NIs are licensed.14

I illustrate this for German, which has the adverbials keinesfalls (lit. 'in no case'), keineswegs (lit. 'in no way'), and auf keinen Fall ('under no circumstances') denoting antimorphic functions. Focusing on keinesfalls, (47a) intuitively entails (48b) and vice versa, and (47b) entails (48a) and vice versa. Therefore, keinesfalls falls under the definition of an antimorphic function repeated in (6.4).15

(47) a. Peter hat keinesfalls gesungen oder getanzt. Peter has in-no-case sung or danced
   'Peter didn’t sing or dance at all.'

b. Peter hat keinesfalls gesungen und getanzt. Peter has in-no-case sung and danced
   'Peter didn’t sing and dance at all.'

(48) a. Peter hat keinesfalls gesungen oder Peter hat
   Peter has in-no-case sung or Peter has
   keinesfalls getanzt.
   in-no-case danced
   'Peter didn’t sing at all or Peter didn’t dance at all.'

14 Perel'svaig (2004) bases her argument on the fact that NIs in Russian cannot occur under bez ('without'), which she argues to be an antimorphic expression. Van der Wouden (1997) and Zwarts (1998), however, classify without and its Dutch counterpart as merely anti-additive. I use expressions whose status as antimorphic expressions is less controversial.

15 Keineswegs seems to be largely equivalent to keinesfalls in meaning and use, whereas auf keinen Fall seems to require a modal context.
b. Peter hat keinesfalls gesungen und Peter hat keinesfalls getanzt.
     in-no-case sung  and in-no-case danced
     ‘Peter didn’t sing at all and Peter didn’t dance at all.’

(49) A function $f$ is **antimorphic** iff for any $X$ and $Y$ in the domain of $f$ a. and b. hold:

a. $f(X \cup Y) \leftrightarrow f(X) \cap f(Y)$

b. $f(X \cap Y) \leftrightarrow f(X) \cup f(Y)$

Although *keinesfalls* comes out as an antimorphic function, it is compatible with the NPI *jemals*, cf. (50a), as well as with indefinites of the *irgend*- and the general series, cf. (50b):

(50) a. Peter war *keinesfalls jemals* im Gefängnis.
     Peter was in-no-case ever in-the prison
     ‘Peter wasn’t in prison at all.’

b. Peter hat *keinesfalls (irgend)jemanden* umgebracht.
     Peter has in-no-case (irgend)someone killed
     ‘Peter didn’t kill anybody at all.’

The fact that NPIs and general indefinites can co-occur with *keinesfalls* can thus not be attributed to the monotonicity properties of the latter. Rather, it seems to be due to the meaning of *keinesfalls* comprising a component which plain sentential negation does not express, contributing emphasis or denial (the same holds for *keineswegs* and *auf keinen Fall*; see Jacobs, 1982). Consequently, the antimorphic function plus the indefinite cannot be substituted by an NI without loss of meaning.

From these considerations, the following picture emerges. Whether an NPI or a general indefinite can occur in a certain context does not only depend on the monotonicity properties of the respective context but also on whether there is an equivalent construction involving an NI. The generalization that correctly captures the observed distribution of indefinites with respect to negation seems to be the following: whenever an NI can be used, it has to be used. In German, a non-NC language, NIs are only licensed in a position adjacent to a covert negation operator. Consequently, general indefinites or NPIs in a position adjacent to an overt negative marker are excluded, because the same meaning could be expressed by an NI licensed by an abstract negation.
Since both structures in (51) are semantically equivalent, only (51b) involving an NI is grammatical.

(51)  

\[
\begin{array}{c}
\textit{nicht} \\
\text{NPI/} \\
\text{general indefinite}
\end{array}
\]

In NC-languages, NIs are licensed in the entire c-command domain of a (possibly covert) negation operator. Consequently, NPIs are excluded from occurring anywhere in the scope of negation, as illustrated in example (52) from Ukrainian. Only the pattern sketched in (53b) is possible.

(52)  

\[
\begin{array}{c}
\textit{Nixo}/ \quad \text{\textit{\textbf{Xto-nebud'}}} \\
\text{\textit{n-person/}} \quad \text{\textit{anybody}} \\
\textit{\textit{n-thing/}} \quad \text{\textit{anything}} \quad \text{\textit{NEG ate}}
\end{array}
\begin{array}{c}
\text{\textit{\textit{\textbf{\textit{\textit{jiv.}}}}} \\
\text{\textit{'Nobody ate anything.'}}
\end{array}
\]

(53)  

\[
\begin{array}{c}
\textit{\textbf{NEG}} \\
\text{\textit{\textit{\textit{\textit{\textit{...NPI...}}}}}}
\end{array}
\begin{array}{c}
\textit{\textbf{NEG}} \\
\text{\textit{\textit{\textit{\textit{...NI...}}}}}
\end{array}
\]

I think the best way to deal with these facts is to attribute them to a process of morphological blocking, as proposed by Hoeksema (1999) for Dutch (where the data are pretty much the same as in German), Pereltsvaig (2004) for Russian, and Jäger (2007, 2008) for historical stages of German. The idea behind morphological blocking (implemented, for example, in the framework of Distributed Morphology; cf. Halle and Marantz, 1993, 1994) is that, if a more specific form exists for a particular context, this form has to be used, excluding the more general form from this context. This is an instance of the Elsewhere condition (Kiparsky, 1973), which can be observed to operate in different domains of natural language. In the realm of indefinites, NIs are the forms specified for use in the context of sentential negation. NPIs, in contrast, are specified for the broader context of DE-environments. As sentential negation is a special instance of a DE-environment, NIs are more specific for the use in the context of sentential negation. Their existence thus precludes using less specified NPIs in the context of sentential negation. General indefinites are not specified at all for use in a particular context, and can consequently
only occur in contexts for which there does not exist a more specific form.

Which series enter into competition with each other seems to be language-
idiosyncratic. In German, competition holds between the general and the NPI-series, on the one hand, and the NI-series, on the other hand. But there is no competition between the general and the NPI-series, making the occurrence of general infinities in DE-contexts possible (see examples (36a) and (50b)). The same pattern found in German also holds in Ukrainian (cf. (44)), in Serbian/Croatian (cf. Progovac, 1994), and in Polish (cf. Haspelmath, 1997). In these languages, NPI indefinites are excluded from strictly negative contexts, while the general series can be used in all contexts where the NPI-series can.

The situation is different in English. First, indefinites of the some-series are not only excluded from contexts in which NIs could be used instead but from anti-additive contexts in general (see Szabolcsi, 2004: 414, where the examples in (54) are taken from). While some-indefinites can occur in a position below negation, they can only be interpreted with wide scope above negation and thus get a specific interpretation.

(54)  a. Nobody called someone. \( \exists > \) nobody, *nobody> \( \exists 

b. John came to the party without someone.
\( \exists > \) without, *without > \( \exists 

Some-indefinites seem to be genuine (strong) PPIs which are anti-licensed in anti-additive environments. Second, there seems to be no competition between NPI-uses of the any-series and the NI-series. In fact, it has often been observed for English that sentences with postverbal NIs, as in (55a), have a somewhat emphatic or formal feel about them. Usually, the alternative involving a negative marker and an NPI is preferred, as in (55b).

(55)  a. I saw nobody.

b. I didn't see anybody.

These facts from English are unexpected. Under many recent accounts the semantics of any-NPIs does not correspond exactly to that of a plain indefinite or an NI. Under an account that attributes domain widening to NPIs (among others Kadmon and Landman, 1993), the combination of a negative marker and any is more emphatic than the statement with an NI, which does not induce domain widening. One would thus expect (55b) to be more emphatic than (55a) rather than the other way round. It is instructive to note, however, that there is one indefinite term exhibiting exactly the expected behaviour, namely the indefinite temporal adverb (n)ever. In this case, the version
involving the negative marker and the NPI, cf. (56a), is more emphatic than
the version with the NI, cf. (56b).

(56)  a. I haven't ever touched drugs.
     b. I have never touched drugs.

This suggests that the preference for NPIs over NIs only holds for indefinites
inside VP.

In order to make sense of these facts, I believe the diachronic development
of the negation system in English has to be taken into account. Present-day
standard English instantiates a stage of the Jespersen Cycle where the adverbial
negative marker *not* is in the process of being replaced by the preverbal nega-
tive marker *n't*, which cliticizes on an auxiliary (see Zeijlstra, 2004: 5.6). Eng-
lish thus has both options available, marking negation by a negative adverb,
cf. (57a), or by a clitic on the auxiliary, cf. (57b). But the latter is preferred
nowadays and the former feels formal or emphatic.

(57)  a. John has not paid yet.
     b. John hasn't paid yet.

The pairs in (55) and (57) thus exhibit exactly the same contrast in emphasis
or register.

I suggest that the somewhat marked status of VP-internal NIs is related
to the diachronic change English is undergoing with respect to its negative
marker. In present-day language use, the negative marker cliticizing on the
auxiliary is the unmarked way of expressing sentential negation. The option
of using an overt or covert adverbial negation, stemming from an earlier stage
of the language, is still available but has a somewhat outdated feel about it.
English is developing towards a language where negation has to be marked
high, at least as high as the finite verb. This tendency for negation to be marked
high in the clausal structure is called the Neg-First principle by Horn (2001),
and has been identified as one of the driving forces behind Jespersen’s Cycle.
Placing negation high in the structure is still a preference in English rather
than an absolute constraint. Thus, there seems to be an interrelation between
the position of the negative marker and the possibility of VP-internal NIs.

In German, the choice between using a general indefinite or an NPI of the
irgend-series in a DE-context seems to depend solely on the intended meaning.
If domain widening is intended, an NPI is used, as in (58b), and if domain
widening is not intended, a general indefinite is used, as in (58a).

(58)  a. Niemand hat einen Fehler gemacht.
     n-person has a mistake made
     ‘No one made a mistake.’
   n-person has any mistake made
   ‘No one made any mistake.’

Another difference between German and English is that indefinites of the
general series in German cannot occur in a position adjacent to the negative
marker. In contrast to some-indefinites in English, cf. (60), general indefinites
cannot be interpreted as scoping above negation.

(59) *Peter hat nicht jemanden/ etwas/ einen Hund 
   Peter has NEG someone/ something/ a dog
   gesehen.
   seen
   ‘Peter didn’t see anyone/anything/a dog.’  
   ¬ > ＄
   *‘There is someone/something/a dog that Peter didn’t see.’  
   ＄ > ¬

(60) John didn’t know someone at the party.  ＄ > ¬, *¬ > ＄

This can presumably be reduced to the fact that German does not generally
allow LF movement of DPs in the middle field. The scope relations between
operators in the middle field are fixed at the level of S-structure. German
being a scrambling language, the scope relations which have to be achieved
in English via LF-movement can and thus have to be made transparent in the
surface syntax.

Note however that indefinites of the general series in German can be inter-
preted in the immediate scope of negation provided they are topicalized in the
surface syntax. This is illustrated in (61a).

(61) a. Einen/ Hund habe ich NICHT gesehen.
   a dog have l NEG seen
   ‘As for a dog, I haven’t seen one.’

   b. Ich habe keinen Hund gesehen.
   I have n-Det dog seen
   ‘I haven’t seen a dog.’

Although the truth conditions of (61a) could be expressed by using an NI,
as in (61b), replacing the general indefinite co-occurring with the negative
marker by an NI is not possible without the loss of semantic information. The
difference between (61a) and (61b) lies in information structure: in (61a) the
indefinite expression ein Hund (‘a dog’) serves as topic, which is not possible
if it is realized as NI in (61b).

16 It is however possible to construct the sentence as both involving an NI and having the indefinite
serve as topic, namely the so-called split topic construction, in which only the common noun is
topicalized while the determiner remains in the middle field:
It is interesting to note that the properties making an expression an NPI and the properties characterizing an NI can be combined in one and the same expression. In German, this is the case for minimizer NPIs involving indefinite morphology. Consider, for instance, the idiomatic expression *einen Finger rühren* (‘lift a finger’), which, like its English counterpart, is an NPI. The indefinite component of the idiom, *einen Finger*, cannot occur adjacent to the negative marker, cf. (62a), and the determiner of the NI-series has to be used, cf. (62b):

   he has NEG a finger move

   b. Er hat keinen Finger gerührt.
   He has n-DET finger move
   ‘He didn’t lift a finger.’

This indicates that it is really indefinite morphology that leads to competition between members of the different indefinite series. German seems to be somewhat extreme in this respect. In other languages, a minimizer NPI involving an indefinite article cannot be realized as NI. In Spanish, for example, the expression *un duro* (lit: a coin of five pesetas) loses its idiomatic meaning as a minimal amount of money (cf. *a red cent*) if it takes the form of an NI:

(63) a. No tengo un duro.  (Spanish)
   NEG have.1sg a coin-of-five-pesetas
   ‘I don’t have a red cent.’

   (Laka, 1990: 114)

   b. No tengo ningún duro.
   NEG have.1sg n-DET coin-of-five-pesetas
   *‘I don’t have a red cent.’
   ‘I don’t have a coin of five peseta.’

In fact, in Spanish the indefinite determiner of the general series, *un* (‘a’), is in free variation with the determiner of the n-word series, *ningún*, in contexts where the latter is licensed:

(64) Nadie compró un/ ningún libro.  (Spanish)
   n-person bought a/ n-DET book
   ‘Nobody bought a book.’

(i) *Hund* habe ich keinen gesehen.
   dog have I n-DET seen
   ‘As for a dog, I haven’t seen one.’

17 Again, sentence (62a) is acceptable if *einen* is stressed; see footnote 12.
Thus, there is no morphological competition between the determiners of the NI and the general series. In contrast, pronominal indefinites of the general series are ruled out from occurring in a position in which an NI is licensed:

(65) **Nadie** ha comido [nada/ *algo]. \(\text{(Spanish)}\)

n-person has eaten n-thing/ something

'Nobody has eaten anything.'

These data from Spanish show that not all elements of the same series necessarily behave uniformly.

In the Scandinavian languages, all members of a given series share their distribution. But in these languages, blocking does not arise in all contexts in which NIs can occur. For subjects and topocalized DPs, using an NI is the only—or at least strongly preferred—option, provided the indefinite is interpreted in the immediate scope of negation. Using a negative marker plus the general indefinite is not an option:

(66) a. **Ingen** lingvister har læst den bog. \(\text{(Danish)}\)

n-det linguists have read this book

---

[18] I think that this is also the reason behind the curious fact that some speakers of Spanish do not like NI-determiners co-occurring with a preverbal n-word. The following contrast is reported in Déprez (2000: 307).

(i) a. **Nadie** comió nada.

n-person ate n-thing

'Nobody ate anything.'

b. ¿**Nadie** comió ningún pastel.

n-person ate n-det pastry

'Nobody ate any pastry.'

c. ***Ningún** niño comió ningún pastel.

n-det child ate n-det pastry

'No child ate any pastry.'

d. ***Ninguno** de estos estudiantes leyó ninguno de estos libros.

n-det of these students read n-det of these books

'None of these students have read any of these books.'

The grammaticality judgements are those given by Déprez (2000), who also reports that speakers get a reading with double negation for (i-d). However, many speakers find (i-b)–(i-d) unobjectionable under an NC reading. This contrast in speakers' judgements might be explained by assuming that speakers who do not like (i-b)–(i-d) obey a rule roughly paraphrased as 'Use an NI only if you have to'. While the second indefinite in (i-a) cannot be replaced by the corresponding general indefinite, this is possible in (i-b)–(i-d), where both un and ningún are possible. For those speakers, using the determiner of the NI-series rather than of the general series in (i-d) can make sense if they assume that it serves the purpose of indicating a second negation. On the other hand, speakers whose 1-grammar does not involve such a rule accept both variants, with un and ningún, under an NC-reading.
b. *Ikke nogen lingvister har læst den bog.
   NEG some linguists have read this book
   'No linguists have read this book.' (Christensen, 2005: 67)

But for indefinite objects occupying a position which is arguably VP-internal, both the NI-version and the variant involving the negative marker and the general indefinite are possible, even if they are adjacent:

(67) a. Barnet spiser intet able.
    child.the eat n-DET apple
   (Danish)

   b. Barnet spiser ikke noget able.
    child.the eat NEG some apple
   'The child doesn’t eat an apple.'

The fact that blocking does not arise for VP-internal indefinites is presumably due to the fact that in many cases NIs cannot be used in this position (see Chapter 5). This is the case when other VP-internal material is present precluding the NI from being licensed. In such cases the combination of a negative marker and a general indefinite is used:

(68) a. *Jeg har [VP læst ingen bøger]
    I have read n-DET books
   (Danish)

   b. Jeg har ikke [VP læst nogen bøger]
    I have NEG read some books
   'I haven't read any books.'

In some variants, an NI object that would not be licensed inside VP can be shifted across the intervening material, cf. (69a):

(69) a. Jeg har [ingen bøger] [VP læst $t_1$]
    I have n-DET books read
   (Danish)

   b. *Jeg har ikke [nogen bøger] [VP læst $t_1$]
    I have NEG some books read
   'I haven't read any books.' (Christensen, 2005: 67)

In this shifted position it is again not possible to use the combination of a negative marker and a general indefinite, as shown in (69b). Summarizing the data from Scandinavian, NIs block the version involving a general indefinite plus the negative marker only in VP-external positions.

The picture starting to emerge shows an intricate interaction depending on several factors. The main factors underlying the distribution of indefinites in negative contexts have been identified as the licensing requirements of certain
items and competition between elements of different series resulting in morphological blocking. On the one hand, there are the licensing requirements that come with certain indefinites, in particular NIs and NPIs. On the other hand, there is morphological blocking, excluding certain indefinites from contexts for which there exists a more specific form. Further factors that come into play are the availability of covert movement for DPs and the position of the negative marker.

Another suggested outcome of the discussion is that the notion of a positive polarity item needs to be re-examined. It seems that (in most cases) general indefinites are excluded from a position in the scope of negation by virtue of being blocked by a negative form rather than by virtue of being a genuine PPI (in the sense of Nilsen, 2003, where PPIs have an inherent semantic component which makes their use in negative contexts infelicitous).
Tests for the Quantificational Force of Negative Indefinites

7.1 Background

There are determiners that are remarkably reluctant to reveal their quantificational force, e.g. English *any*. A number of tests have been proposed to help determine the quantificational force of a determiner if it is controversial. They have also been applied to NIs. The reasoning behind these tests is the following. If a certain expression X can modify universal quantifiers, but not existentials, and furthermore X is able to combine with the determiner in question, we can conclude that the latter is a universal quantifier. I want to discuss two of these tests whose results regarding NIs go counter to my claim that NIs are non-negative indefinites, namely modifiability by exceptive phrases and *almost*. In both of these tests, NIs pattern with universal quantifiers and contrast with indefinites:

\[
\begin{align*}
(1) & \quad \left\{ \begin{array}{l}
\text{Every} \\
\text{No} \\
*\text{Some} \\
*\text{A}
\end{array} \right. \\
& \quad \text{student but John passed the exam.}
\end{align*}
\]

\[
\begin{align*}
(2) & \quad \left\{ \begin{array}{l}
\text{every} \\
\text{no} \\
*\text{some} \\
*\text{a}
\end{array} \right. \\
& \quad \text{student passed the exam.}
\end{align*}
\]

Originally, these tests were introduced in the discussion of English *any* to differentiate between the NPI and the free choice variant. Compatibility with exceptive phrases is discussed in Horn (1972) (who attributes it to Peter of Spain). The *almost*-test goes back to Carlson (1980, 1981) and was later used by Zanuttini (1991) as a crucial argument for her analysis of NIs in Italian as universal negative quantifiers.

The aim of this section is to critically review these tests and to invalidate them as counter-arguments against the analysis of NIs as semantically
non-negative indefinites. There are several discussions of the almost-test questioning its validity as a diagnosis for universal quantifiers on empirical grounds (among others Partee, 1986; Błaszczak, 2001). But I will not content myself with pointing out that it is far from clear that these modifiers are really sensitive to universal force. I believe the only way to validate or invalidate these tests is to consider an adequate semantic analysis for the respective modifiers and show that the observed co-occurrence restrictions derive from it. This is what I will do in the following two sections, starting with exceptive phrases and then turning to almost.

### 7.2 Modification by exceptive constructions

Von Fintel (1993) proposes an analysis of exceptive constructions aimed at deriving the correct truth conditions of sentences involving exceptive phrases in a compositional way and accounting for the fact that they are restricted to universal and negative quantifiers. (Of course, von Fintel, 1993 takes NIs to be negative quantifiers.) Using the notational framework of Barwise and Cooper (1981), he states the following meaning for but, where D stands for the determiner, A for the restrictor, C for the set of exceptions, and P for the nuclear scope:

\[(3)\quad D \mathrm{A} \[ \text{but} \] C P \equiv 1 \text{ iff } P \in D(A - C) \& \forall S \ [ P \in D(A - S) \rightarrow C \subseteq S ]\]

The first conjunct covers the central meaning of exceptive phrases, namely subtraction from the domain of the quantifier. For sentence (4), for example, it requires that passing the exam is a property holding of every individual in the set that is obtained by subtracting John from the domain of quantification.

\[(4)\quad \text{Every student but John passed the exam.}\]

Intuitively, the first conjunct says that C contains all the exceptions (that is for (4) that no student other than John did not pass). The second conjunct, on the other hand, says that C contains only exceptions (for (4) this means that (i) John is a student and (ii) John did not pass). Both conjunctions taken together thus guarantee that C contains all and only the exceptions to the quantificational statement.

As the second conjunct expresses a uniqueness condition, it also accounts for the co-ocurrence restrictions of exceptive phrases. It requires the set of exceptions to be the smallest set such that if it is subtracted from the quantifier domain the quantification comes out true. It turns out that universal and negative determiners are the only naturally occurring simple determiners that guarantee the existence of such a unique exception set (see von Fintel, 1993,
for details). For all other determiners, the combination with exceptive phrases results in immediate falsity because the uniqueness condition cannot be fulfilled. Von Fintel argues that this explains their ungrammaticality.

So how can von Fintel’s (1993) account of the co-occurrence restrictions exhibited by exceptive phrases be reconciled with the assumption that NIs are not negative quantifiers but rather non-negative indefinites? The problem is not as severe as it might seem at first. Note that claiming that only universal and negative quantifiers can combine with exceptive phrases does not quite do justice to the empirical facts. Quantifiers headed by the NPI *any* can also take exceptive phrases, as illustrated by (5).

(5) John doesn't like anyone but Mary.

Since it is generally assumed that NPI *any* is an existential quantifier (as convincingly argued by Ladusaw, 1979), the compatibility of exceptives with NPI *any* is a problem for von Fintel’s analysis.

In order to fix this problem, Gajewski (2004) proposes a slight change to von Fintel’s (1993) analysis. The crucial difference lies in the compositional structure assigned to exceptive constructions while the semantics is maintained. Whereas von Fintel assumes that exceptive phrases are modifiers of determiners, thus forming a complex quantifier, Gajewski argues that exceptive phrases are NP-modifiers of Type $\langle \langle e, t \rangle, t \rangle$. Being quantifiers over properties, they cannot be interpreted in their base position as sisters to NP. They have to undergo QR to a node of type $t$, leaving behind a trace of type $\langle e, t \rangle$ which can be intersected with the N-restriction via the composition rule of Predicate Modification. The LF-structure of exceptive phrases is shown in (6).

(6)
Von Fintel's semantics of *but* tailored to this syntax is the following:\(^1\)

\[(7) \quad \llbracket \text{but} \rrbracket = \lambda C_{(e.t)} . \lambda F_{(e.t)} . F(\bar{C}) \land \forall S \ [F(\bar{S}) \rightarrow C \subseteq S]\]

As the exceptive phrase does not form a constituent with the determiner any longer, the co-occurrence restriction induced by the uniqueness condition no longer applies at the level of the determiner but rather at the propositional level where the *but*-phrase is interpreted. This ensures that a sentence with an NPI as the host of the exceptive phrase results in non-trivial truth conditions, as long as the *but*-phrase takes scope over negation. It should be clear that this account of the compatibility of NPIs with exceptive phrases carries over directly to NIs.

Gajewski's analysis gains support from the fact that it makes correct predictions concerning another aspect. Under von Fintel's (1993) analysis, the complex quantifier consisting of a DP headed by *no* and an exceptive phrase has the denotation in (8) and is thus predicted to be non-monotonic in its scope.

\[(8) \quad \llbracket \text{no A but C} \rrbracket = \lambda P . P \cap A = C\]

Thus, NPIs should not be licensed in the scope of an NI hosting an exceptive, contrary to fact.

\[(9) \quad \text{Nobody but John knows anything about syntax.}\]

The fact that NPIs are licensed by NIs hosting an exceptive phrase constitutes a further argument against the assumption that exceptive phrases are DP-modifiers. Gajewski's account, under which exceptive phrases take scope at the sentential level, gets the licensing of NPIs right. In his account, the NPI in (9) is licensed because the proposition the *but*-phrase adjoins to is a downward-entailing environment.

\(^1\) To convince yourself that Gajewski's type-lifted meaning rule (7) is indeed semantically equivalent to von Fintel's semantics, consider the following calculation.

According to (7), the meaning of a *but*-phrase is the following.

\[(i) \quad \llbracket \text{but C} \rrbracket = \lambda F . F(\bar{C}) \land \forall S \ [F(\bar{S}) \rightarrow C \subseteq S]\]

The constituent to which the *but*-phrase is adjoined in tree (6) has the schematized meaning in (ii) (where A stands for the N-restrictor, B for the trace of the *but*-phrase, and P for the predicate):

\[(ii) \quad \lambda B . P \in D(A \cap B)\]

The *but*-phrase applied to this constituent then has the following meaning:

\[(iii) \quad \llbracket \text{but C} \rrbracket (\lambda B . P \in D(A \cap B)) = P \in D(A \cap \bar{C}) \land \forall S \ [P \in D(A \cap \bar{S}) \rightarrow C \subseteq S]\]

If we now replace a statement of the form 'X \cap Y' by the equivalent 'X – Y', we are back to von Fintel's semantics in (3).
Gajewski’s analysis represents an important shift in perspective on the semantic composition of exceptive phrases. Whereas von Fintel (1993) remains in keeping with Generalized Quantifier Theory in assuming that exceptives associate with the determiner to form a complex quantifier, Gajewski (2004) proposes to analyse them as operators applying at the propositional level. We will see in the next section that this conceptual shift also offers the key to solving the problems raised by the almost test.

7.3 Modification by almost

In contrast to exceptive phrases, almost is incompatible with NPI any:  

(10)  *John didn’t make almost any mistake.

Regarding compatibility with almost there is a contrast between NIs and indefinite NPIs, which (11) illustrates for Italian.

(11)  Non ha detto quasi niente/ *alcunché.  (Italian)
      not has said almost n-thing/ anything
      ‘He said almost nothing.’  (Zanuttini, 1991: 192)

This contrast has been taken as an argument against theories analysing NIs in NC languages as NPIs. While I concur with the need to distinguish NIs from NPIs, I don’t agree with the conclusion that NIs have to be universal quantifiers whose nuclear scope is negative, as argued by Zanuttini (1991).

In order to see what conclusions on the nature of NIs can in fact be drawn from their being compatible with almost, let us see what has been said in the literature about the semantics of almost.

---

3 Free choice any can be modified by almost:

(i)   Almost any student can solve this problem set.

Consequently, this fact has been used as an argument that free choice any is a universal quantifier, whereas NPI any is an existential quantifier. It seems, however, that in the case of any also, the almost-test is too simple-minded as it presupposes that modifiability by almost depends on lexical meaning alone. Recent accounts assume one lexical element any which is an existential quantifier inducing domain widening and derive the free choice reading via a scalar implicature. Under the analysis of Chierchia (2006), the truth conditions and the implicature of sentence (ii-a) taken together entail (ii-b):

(ii)   a. Any student can solve this problem set.

b. \( \forall D \exists x \in D \ [\text{student}(x) \ & \ x \text{ can solve this problem set}] \)

where D contains students

In the case of (i), almost would then refer to the universal quantifier over domains.

I am not aware of any discussion relating these assumptions about free choice any to the semantics of almost, although it has interesting consequences for the assumptions about grammar architecture and, in particular, the level at which scalar implicatures are computed.
7.3.1 Previous analyses of almost
Sadock (1981) was the first to propose a semantic analysis of almost. He defines almost as an intensional operator taking a proposition \( p \) and yielding true iff \( p \) is false in the actual world but holds in a world that is not very different from the actual world:\footnote{The meaning rule in \((12)\) actually disregards Sadock’s central claim, namely that the requirement that \( p \) be false in the actual world is a conversational implicature. However, the assumption that this implication of sentences with almost has the status of an implicature is controversial, and Hitzeman (1992) and Rapp and von Stechow (1999) regard it as part of the truth conditions. Since the status of this requirement is not important for the following discussion, I will simply treat it as truth-conditional entailment.}

\[
(12) \quad \mathbf{almost} = \lambda w. \lambda p \in S. \exists! w' \forall x \forall y \leq_x, t > . \neg p(w) \land \exists w' [w' \text{ is not very different from } w \land p(w')]
\]

According to this semantics, the sentence in \((13)\) below means that Bill did not swim the English Channel but there is a world not very different from the actual world in which Bill swam the English Channel, i.e. that if the actual world were minimally different, Bill would indeed have swum the English Channel.

\[
(13) \quad \text{Bill almost swam the English Channel.}
\]

A fundamental problem of Sadock’s analysis is pointed out by Morzycki (2001): the meaning rule in \((12)\) might do for VP-modifying almost but cannot directly be extended to almost modifying a DP. The problem is that it does not specify in which respect \( p \)-worlds \( w' \), i.e. worlds in which the host proposition \( p \) holds, is allowed to vary from the actual world. For example, whereas in the correct interpretation of \((14a)\) the \( p \)-world varies with respect to the number of non-dry plants from the actual world, according to \((12)\) it could also vary with respect to the degree of dryness each plant has, so that \((14a)\) is wrongly predicted to be true if every plant is only minimally moist. According to \((12)\), \((14a)\) could be true in the same circumstances as \((14b)\).

\[
(14) \quad \begin{align*}
\text{a.} & \quad \text{Almost every plant is dry.} \\
\text{b.} & \quad \text{Every plant is almost dry.}
\end{align*}
\]

Morzycki (2001) tries to remedy this problem by imposing a special requirement on DP-modifying almost that the worlds not vary with respect to the extension of the VP. This requirement is expressed in the second line of \((15)\), which states Morzycki’s semantics for DP-modifying almost and corresponds otherwise to Sadock’s meaning rule with similarity of possible worlds formalized by a closeness relation \text{CLOSE}.
(15) $\text{almost}_{\text{DP}} = \lambda w. \lambda Q((e, st), st). \lambda P((e, st)). \neg Q(P)(w) \& \exists w' [Q(P)(w') \& \text{close}(w)(w') \& \lambda x. [P(x)(w)] = \lambda x. [P(x)(w)]]$

To illustrate how this addition makes sure that the $p$-world varies in the relevant respect, namely the extension of the DP, and thus leads to the correct truth conditions for (14a), let us consider a toy model consisting of the two worlds $w$ and $w'$ and three individuals, a, b, and c. Let us assume that $w'$ counts as close to the actual world $w$. Assume further that a, b, and c are plants in the actual world, and that c is the only plant that is not dry, thus preventing the proposition ‘that every plant is dry’ from being true in $w$. Now, according to (15), the dry things in $w'$ are the same as the dry things in $w$. Then the only way for $w'$ to make ‘that every plant is dry’ true is to assume that the ‘offending’ plant c is not there in $w'$, such that there are only two plants in $w'$, a and b, and both of them are dry. This state of affairs is shown in (16).

<table>
<thead>
<tr>
<th></th>
<th>plants</th>
<th>dry</th>
<th>individuals</th>
</tr>
</thead>
<tbody>
<tr>
<td>$w'$</td>
<td>a b c</td>
<td>a b</td>
<td>a b c</td>
</tr>
<tr>
<td>$w'$</td>
<td>a b</td>
<td>a b</td>
<td>a b c</td>
</tr>
</tbody>
</table>

Morzycki suggests deriving the fact that existentials cannot be modified by almost from the requirement for DP-modifying almost that the worlds not vary with respect to the extension of the VP. He argues that existentials modified by almost are pragmatically odd, because they would require that something that is not in the NP-extension in the actual world be in the NP-extension in the almost-world. In the case of (17), for example, something that is not a plant but dry in the actual world would have to be a plant in the world $w'$ making the proposition ‘that some plant is dry’ true. Such a state of affairs is illustrated for our model in (18).

(17) *Almost some plant is dry.

<table>
<thead>
<tr>
<th></th>
<th>plants</th>
<th>dry</th>
<th>individuals</th>
</tr>
</thead>
<tbody>
<tr>
<td>$w'$</td>
<td>a b c</td>
<td>c</td>
<td>a b c</td>
</tr>
<tr>
<td>$w'$</td>
<td>a b c</td>
<td>c</td>
<td>a b c</td>
</tr>
</tbody>
</table>

Since requiring that an individual changes an essential property like being a plant across worlds is a very strange requirement, (17) is assumed to be ruled out for pragmatic reasons.

The combination of almost and existentials resulting in odd truth conditions seems to argue against the assumption that NIs, which can after all be
modified by *almost*, are non-negative indefinites. Morzycki (2001) indeed assumes NIs to be universally negative quantifiers and as such to be compatible with *almost*. But it is worth looking in detail at the truth conditions his analysis yields under the assumption that NIs are negative quantifiers. Consider sentence (19) which is predicted to be true in a state of affairs such as the one shown in (20).

(19) Almost no plant is dry.

<table>
<thead>
<tr>
<th></th>
<th>plants</th>
<th>dry</th>
<th>individuals</th>
</tr>
</thead>
<tbody>
<tr>
<td>(w)</td>
<td>a b c</td>
<td>c</td>
<td>a b c</td>
</tr>
<tr>
<td>(w')</td>
<td>a b c</td>
<td>c</td>
<td>a b c</td>
</tr>
</tbody>
</table>

In (20), \(c\) is the ‘offending’ plant, being dry and thus preventing ‘that no plant is dry’ from being true in \(w\). Consequently, \(c\) cannot be a plant in a world \(w'\) making this proposition true. But because of the requirement that the VP-extension not vary across worlds, \(c\) will be a dry thing in \(w'\) and therefore has to exist in \(w'\). So \(c\) has to change from a plant in \(w\) to something that is not a plant in \(w'\). Therefore, according to Morzycki’s reasoning for existentials, negative quantifiers are also predicted to be incompatible with *almost*, since they would require that something in the NP-extension in the actual world not be in the NP-extension in the \(p\)-world. In contrast to cases where *almost* modifies a universal quantifier, it cannot be assumed that the ‘offending’ individual simply does not exist in \(w'\), because it has to be in the VP extension in \(w'\).

These considerations show that Morzycki’s amendment to the meaning of *almost* modifying DP does not derive the correct co-occurrence restrictions. Furthermore, the requirement that the worlds not vary with respect to the extension of the VP is nothing other than a stipulation putting the desired effect for the truth conditions of DP-modifying *almost* into the semantics by brute force. It does not shed light on the difference in semantic composition between cases where *almost* modifies a DP and cases where it modifies some other constituent.

The upshot of the discussion is that accounts by Sadock (1981) and Morzycki (2001) based on intensional similarity are insufficient to capture the semantics

---

4 The issue is actually more complex because the negation licensing the NI has to be taken into account. Since in the meaning rule in (15) the modified DP is an argument, there are only two possibilities for the scope of negation. Either it is interpreted with narrow scope under both *almost* and the existential quantifier, which results in incorrect scope relations of existential and negation. If negation is to have scope over the existential quantifier, it will also take scope above *almost*. This is presumably not a possible option because *almost* seems to be a positive polarity item (see the discussion below). If negation could take scope over *almost*, the resulting truth conditions would be very weak due to the presence of a conjunction in Morzycki’s meaning rule (15).
of *almost*. The fundamental problem they face is that they do not account for the role the modified constituent plays in the truth conditions of sentences with *almost*.

7.3.2 Almost as an operator evaluating scalar alternatives

So how can the contribution of the modified constituent be formalized while at the same time treating *almost* as a cross-categorial modifier? Although due to my being interested in the *almost*-test I concentrate on *almost* modifying DPs, it is important to keep in mind that *almost* can modify elements of various syntactic categories:

(21) a. John almost fell asleep during the talk. VP
    b. The victim was almost dead when the police found him. AP
    c. Almost every linguist has read ‘Syntactic Structures’. DP
    d. Bob almost never drinks alcohol. AdvP

This makes it plausible to relate *almost* to other expressions exhibiting a similar behaviour, namely focus-sensitive operators like *only* and *even*. For these, Rooth (1985) proposes a cross-categorial semantics accounting for the semantic contribution of the focused constituent. He proposes that these operators take two arguments. The first is the proposition they operate on. The second argument is an alternative set C consisting of propositions in which the focused constituent is replaced by entities of the same semantic type.

The semantics of *almost* involves a further ingredient. As observed by Hitzeman (1992), *almost* operates on a scale. A sentence in which *almost* modifies an expression P entails the truth of a corresponding sentence without *almost* in which P is replaced by a value close by but lower on the scale associated with P. Sentence (22), for example, entails that n people died of the disease, with n being close to but smaller than 100.

(22) Almost 100 people died of the disease.

There are, however, cases of *almost* that presumably require such an analysis. These are counterfactual uses of *almost*, exemplified in (i) and discussed in Rapp and von Stechow (1999).

(i) I almost ran over a cat.

In German, counterfactual uses of *almost* require the subjunctive:

(ii) Ich hätte fast eine Katze überfahren. (German)

I have.subj / have.ind almost a cat over-run

The English sentence (i) and its German counterpart (ii) can be paraphrased as *if the actual world had been minimally different, I would have run over a cat*. As this paraphrase suggests, this sentence seems to require an analysis involving possible worlds ordered with respect to similarity to the actual world in the style of Lewis (1973).
This means that the semantics of *almost* involves special types of alternatives, namely alternatives ordered on a scale. There are other expressions whose semantics has been argued to involve scalar alternatives, namely scalar modifiers such as *at least, at most,* or *exactly.* McNally (1998) and Krifka (1999) define a semantics for these expressions by letting a Roothian semantics for focus-sensitive operators operate on an alternative set C consisting of alternatives ranked on a scale. Krifka (1999) argues that scalar alternatives can be introduced in two ways. First, scalar alternatives can be introduced in the same way as usual focus alternatives, i.e. by an intonationally marked focus. But intonational prominence is not necessary for the introduction of scalar alternatives because certain expressions are automatically associated with alternatives ordered on a scale (see also Chierchia, 2006). These are expressions that are part of a so-called Horn scale, i.e. a scale ordered by the entailment relation such that an element of the scale entails all the elements ranked lower (see Horn, 1972). To ensure that alternatives are ordered at the level where they are evaluated, Krifka further assumes the scalar ordering to be projected along with the focus alternatives. This way the ranking of the alternatives having the type of the focus value carries over to the alternatives at the propositional level. For certain expressions only a particular part of the scale contains the relevant alternatives. (For instance, the scalar additive particles *einmal* and *auch nur* that replace *sogar* ‘even’ in negative contexts in German quantify over alternatives that are ranked higher; see Schwarz, 2005.)

In the case of *almost*, the relevant alternatives are those which are close by on the ordered scale. I formulate this as a presupposition of *almost* requiring the restrictor variable C to range over sets of alternative propositions counting as close to the host proposition on the associated scale.

This leads to the following semantics for *almost*:

\[(23) \quad [\text{almost}_C] = \lambda w. \lambda p_{<s,t>} : \forall q [q \in C \rightarrow q \approx p]. \neg p(w) \land \exists q [q \in C \land q(w)]\]

According to (23), *almost* applied to a proposition \(p\) is true iff \(p\) is false in the actual world but an alternative proposition \(q\) close to \(p\) on the corresponding scale is true. Note that it is only required that the alternatives under consideration be close to \(p\) but not that they are ranked lower than \(p\). That only alternatives ranked lower can be true is ensured by the first conjunct in (23), which requires \(p\) to be false. Since \(p\) is logically entailed by alternatives ranked higher on a Horn scale, only alternatives ranked lower can be true.

To see the proposed semantics for *almost* at work, consider again sentence (22), repeated as (24a) below, in which the scale is given by the sequence
of natural numbers. Let us assume for the sake of simplicity that the values counting as ‘close by’ are the ones within a deviation of 10% of the original value, i.e. the numbers between 90 and 110 in this case. The restrictor variable $C$ then denotes the set of propositions in (24b). Applying the meaning of *almost* stated in (23) derives the truth conditions (24c), which in effect say that the number of people who died of the disease is somewhere between 90 and 99. This corresponds to the meaning sentence (24a) intuitively has.

(24) a. Almost 100 people died of the disease.
   
b. $\{p : p = \text{that } n \text{ people died of the disease}, 90 \leq n \leq 110\}$
   
c. $\lambda w. \neg(100 \text{ people died in } w \text{ of the disease}) \& \exists n [90 \leq n \leq 110 \& n \text{ people died in } w \text{ of the disease}]$

The occurrence of *almost* in a statement has a further consequence. This becomes obvious when the acceptability of (24a) is compared to (25).

(25) #Almost 102 people died of the disease.

The combination of *almost* with round number words is fine, whereas combining *almost* with non-round number words seems odd. This follows if it is assumed that *almost* also indicates that a more coarse-grained scale is used, similar to the effect *approximately* has. Since the values on more coarse-grained scales correspond to round number words (see Krifka, 2007), expressions indicating a coarser granularity level show a strong preference for round number words.\(^6\)

A general property of Horn scales is that their direction is influenced by the utterance context (see Horn, 1972). We find this also with scales associated with *almost*, as the following example from Sadock (1981: 260) illustrates:

(26) It’s almost 0° Celsius.

Sentence (26) can mean two things, depending on the situation in which it is uttered. In a situation in which it is cold already, it can express that it is getting warmer and the temperature is approaching 0° Celsius from below. In this case, the direction of the temperature scale is the usual bottom to top as shown in (27a). If, on the other hand, (26) is uttered in a situation in which it is getting colder, it says that the temperature is actually still above 0° Celsius. In this case, the direction of the scale is reversed, as shown in (27b).

---

\(^6\) At least this preference for round number words holds in the numerical domain where the values on more coarse-grained scales correspond to multiples of the powers of ten. Things are different in the temporal domain where for instance the values on a coarse-grained minute scale correspond to multiples of 15. This is reflected in the fact that *almost* is fine with these values on a minute scale:

\(i\) I had to wait for almost 45 minutes.
Tests for the Quantificational Force of NIs

(27) a. 
-5 -4 -3 -2 -1 0 1 2 3 4 5

b. 
-5 -4 -3 -2 -1 0 1 2 3 4 5

7.3.3 Negative indefinites modified by almost
With the semantics of *almost* introduced in the last section, let us see what we can say about the validity of the *almost*-test as a test for universal quantification.

If the constituent *almost* 'modifies' a quantifier, the associated scale is the following Horn scale of quantifiers:

(28) 
some several many half most all

Considering this scale, we can now explain why existential quantifiers are incompatible with *almost*: existentials form the bottom of the quantifier scale. There is thus no lower value which could be part of a proposition that is both a scalar alternative and true as required by the semantics of *almost*. Universal quantifiers are at the top of the scale. Consequently, there are alternatives ranked lower but counting as close by that could be true, as required by the semantics of *almost*. (In)compatibility with *almost* is therefore not due to the quantificational force of a quantifier per se but rather to its location on the scale.\(^7\)

We now get to the central question: Does the fact that existential quantifiers cannot co-occur with *almost* imply that NIs, which are compatible with *almost*, cannot be existentials? The answer is no, because NIs are not just existentials but existentials that have to be licensed by negation. It is a well-known fact that entailment relations are reversed under negation, resulting in a reversal of the direction of the corresponding Horn scale. Thus, the quantifier scale in negative contexts looks like (29):

\(^7\) Vague quantifiers such as *several, many, and most* are also incompatible with *almost*, while *half* and *all* are fine:

(i) a. *Almost several/*many/most students passed the exam.
    b. Almost half/all of the students passed the exam.

Following Hitzeman (1992), this can be attributed to the fact that vague quantifiers do not correspond to precise values on the scale. It is thus not clear what part of the scale counts as 'close by'. Consequently, vague quantifiers are not compatible with the semantics of *almost*. In contrast, *half* and *all* have a precise location on the scale and are therefore fine with *almost*. 
(29) Quantifier scale in negative contexts:

| some          | several | many | half | most | all |

Under negation, existentials are at the top of the scale rather than at the bottom. This means that in negative contexts an alternative proposition involving a value lower on the scale can be true. *Almost* is thus not prevented from modifying existentials as long as they are in the scope of negation and *almost* operates on the negated proposition.

To see how the proposed analysis of *almost* derives the correct truth conditions under the assumption that NIs are semantically non-negative, let us work through example (30).

(30) Almost nobody called.

Consider first an LF in which *almost* takes scope below the covert negation Op¬ licensing the NI, as in (31).

(31) [ Op¬ [ almostC nobody called ] ]

(31) corresponds to the negation of the proposition *almost somebody called* which can never be true as argued above. Consequently, (31) expresses a proposition that is always true. Due to being underinformative, the LF (31) can thus be assumed to be ruled out.

If, however, *almost* takes scope above Op¬, cf. (32a), the LF expresses non-trivial truth conditions. The alternative values on the quantifier scale counting as 'close by' to the existential are quantifiers like *a few, a couple, and several*. The restrictor variable C associated with *almost* thus denotes the set of propositions in (32b).

(32) a. [ almostC [ Op¬ nobody called ] ]

b. {that it is not the case that somebody called,
   that it is not the case that a few people called,
   that it is not the case that a couple of people called,
   that it is not the case that several people called}

c. λw.¬(that it is not the case that somebody called in w) & ∃p[ p ∈ C & p(w)]

The proposed meaning of *almost* results in the truth conditions stated in (32c), which in combination with the denotation of the alternative set C in (32b) in effect say that somebody called, but no more than a small number of people called. Again, this corresponds to the meaning sentence (31) intuitively has.
We see that modifiability by *almost* does not help to decide on the nature of NIs. As far as compatibility with *almost* is concerned, there is no difference between universal quantifiers interpreted with wide scope over negation and existential quantifiers interpreted in the scope of negation.\(^8\)

7.3.4 Incompatibility of almost and NPIs

A remaining issue that needs to be addressed is why *almost* cannot modify indefinite NPIs like English *any*. Since NPI *any* in English is generally assumed to be an existential determiner occurring in negative contexts and, as I have just argued, existentials in negative contexts are in principle compatible with *almost*, we would expect *any* to be fine with *almost*, contrary to fact.\(^9\)

\(^8\) This predicts that other types of infinities should also have the possibility of co-occurring with *almost* if they are in the scope of negation or other DE operators. Although such examples are rare, they do occur, as Hoekema (2007) observes. Here is one of his examples from Dutch:

(i) Ik herlas ze, en het wonderlijke was, dat wat mij toen volstrekt onbegrijpelijk was geweest, nu zonder dat ik er completely incomprehensible was, now without that I there vrijwel iets aan hoefde veranderen, precies aansloot op wat ik almost anything to need change, exactly fitted with what I aan het schrijven was. at the writing was

'I reread them, and the strange thing was that what had appeared completely incomprehensible to me back then now exactly matched what I was writing, without me having to change almost anything.'

Note that *vrijwel* ('almost') takes wide scope with respect to *zonder* ('without'), i.e. a better translation would be '...almost without me having to change anything.'

\(^9\) To explain data like (33), Horn (2005) suggests that *almost* is a positive polarity item that cannot occur in the scope of negation. This is suggested by the fact that *almost* under negation is degraded, as in (i). (i) is fine under a metalinguistic use of negation, i.e. if intonational prominence is placed on *almost* as the expression making the utterance unsuitable (see Horn, 2001, chap. 6). In this case, (i) is used to reject the claim that not every single book of Chomsky was read, which shows that metalinguistic negation on *almost* refers to the meaning part requiring the host proposition to be false in the actual world.)

(i) ?? I haven't read almost every book by Chomsky.

Assuming that *almost* is a PPI is however not sufficient to explain the incompatibility of *almost* and NPIs, as pointed out by an anonymous reviewer. PPIs have been observed to be licit in certain contexts involving negation, and this would predict that *almost* modifying an NPI should also be possible in these environments. As observed by Ladusaw (1979), PPIs are acceptable if the negation is in a higher clause. But still, *almost any* is not possible even if the NPI is licensed by a negation in a higher clause.

(ii) a. I don't think John has something interesting to say.
    b. ?? I don't think John has met almost any student.

Likewise, *almost any* is not possible in contexts of double negation, although PPIs are fine there (see Baker, 1979; Szabolcsi, 2004).

(iii) a. I don't believe that you didn't see something.
    b. *I'll be damned if I didn't see almost any student.*
(33) *I didn’t see almost any student.

I suggest reducing incompatibility of *almost and NPIs to an intervention effect, which is known to arise in the licensing of NPIs since Linebarger (1980, 1987). This view is also expressed in Horn (2000: 163 ff.), and I will elaborate it in the recent semantic theory of intervention effects proposed by Beck (2006). She argues that intervention effects are due to focus interpretation, or more generally to the evaluation of alternative sets. An intervention effect occurs whenever an alternative evaluating operator interferes in the evaluation of another operator whose semantics involves alternatives. Beck calls this the General Minimality Effect. It states that for the evaluation of alternatives introduced by an XP another operator evaluating focus alternatives cannot be skipped. This excludes constellations of the form (34), where the ~ operator (i.e. the operator interpreting focus defined by Rooth, 1992) intervenes in the evaluation of the alternatives introduced by XP₁, because it prevents them from being passed up to a position where they could be evaluated by the associated operator Op₁.

(34) *[Op₁ ... [ ~ C [ ...XP₁ ...]]]

Beck (2006) proposes that intervention effects arising in the licensing of NPIs are a form of the General Minimality Effect. As observed by Linebarger (1987), sentence (35) does not have a reading where the universal quantifier takes scope in between the negation and the NPI.

(35) She didn’t wear any earrings to every party. *¬ > ∀ > ∃

Beck’s account of NPI intervention effects builds on work by Krifka (1995) and Lahiri (1998), who argue that the licensing of NPIs involves the evaluation of alternatives. She adopts an analysis in the style of Lahiri (1998), according to which the focus alternatives introduced by an NPI are evaluated by an (implicit) operator even taking wide scope with respect to negation. Furthermore, Beck argues that quantificational elements also constitute interveners for focus evaluation because, as she assumes, focus is obligatorily evaluated in the scope of a quantifier. With these assumptions, the LF-representation for the unavailable reading of (35) looks like (36).

(36) [even₅D | ¬D [ not | every party λ₁[~ C she wore | any earrings ]₁ to ¹ ]]]]

(36) represents an instance of (34). The intervening quantifier every party prevents the focus alternatives introduced by the NPI from being passed up to the position where they could be evaluated by even. Because even has no alternatives to operate on, the representation (36) is ruled out.
Under this analysis of intervention effects in NPI licensing, *almost* is predicted to be an interner. The semantics of *almost* I propose crucially involves the evaluation of alternatives. The combination of *almost* and NPIs thus represents a constellation of the form (34) and is excluded as an instance of Beck's General Minimality Effect. More precisely, *almost* and the implicit *even* associated with NPIs both operate on the same set of alternatives. I illustrate this for sentence (33), repeated as (37a) below. Recall from the previous subsection that *almost* has to take scope above negation in order for informative truth conditions to obtain. There are thus two possible LFs for (37a), one in which *almost* takes scope above the implicit *even*-operator (37b), and one where it scopes below (37c). In the first LF (37b), the alternatives introduced by *any student* are evaluated by *even*. There are thus no alternatives left for *almost* to evaluate, resulting in ungrammaticality. If *even* outscopes *almost* as in (37c), *even* has no focus alternatives to operate on because they are already 'eaten up' by *almost.

(37) a. *I didn't see almost any student.*
   b. \[ \text{almost}_C \sim \text{C} \left[ \text{even}_D \sim \text{D} \left[ \text{not} \left[ \text{I saw} \left[ \text{any student} \right] \right] \right] \right] \]
   c. \[ \text{even}_C \sim \text{C} \left[ \text{almost}_D \sim \text{D} \left[ \text{not} \left[ \text{I saw} \left[ \text{any student} \right] \right] \right] \right] \]

The fact that *almost* cannot modify NPI indefinites thus follows under the proposed analysis of *almost* as an intervention effect in the sense of Beck (2006). It is a consequence of their licensing involving alternatives rather than of their denoting existential quantifiers.

7.3.5 Remarks on the syntax of *almost*

So far I have not addressed the syntax of *almost*. For semantic reasons, I have proposed that *almost* is a propositional operator. In the case of *almost* modifying a DP there is thus a discrepancy between the surface position of *almost* and the position where it is interpreted. That *almost* is indeed adjoined to the DP rather than being an adverb is evidenced by the fact that it can occur inside PPs, as in (38).

(38) I talked to almost everybody.

Simply type-shifting *almost* in the style of Rooth (1985) to a DP-modifier won't do, as this has the same effect as QR of the whole constituent made up of *almost* and the DP. For the analysis of NIs modified by *almost* to work, it is crucial that *almost* takes wide scope with respect to negation while the NI is interpreted with narrow scope.

The question is then how *almost* gets to the position it occupies at LF. I see two ways how this could be achieved. The first is to assume that *almost* gets to
this position in the usually way, i.e. by QR. QR of a sentential operator would be exceptional in two respects. First, sentential adverbs usually take surface scope, and it is therefore generally assumed that QR is not available for them. Second, for QR of a sentential operator to have any effect at all, its trace cannot be interpreted. That means that we would have to stipulate an unusual kind of movement that does not leave a trace.

The second option is to assume that the particle is not itself the semantic operator but rather that the particle is licensed by an abstract operator under agreement. This is argued to be the case for man ('only') in Korean by Lee (2005).

I do not decide between these two options here, but would like to point out that the same issue arises for other expressions such as at least, at most, and exactly. Recent work on the semantics of these expressions shows that they are propositional operators that can take wider scope than the DP or measure phrase they modify (Geurts and Nouwen, 2007; Beck, 2009). Some means or other to achieve this wide scope is needed.

Finally, I would like to add a speculation as to what underlies this discrepancy between the surface position of almost and the position where it is interpreted. It seems that almost and similar expressions such as at least, at most, or exactly mark their focus syntactically. That means they have to be adjacent to their focus at surface structure. In contrast to other focus-sensitive operators like only, almost does not associate with scalar alternatives introduced by an arbitrary expression but only with the alternatives introduced by the adjacent constituent. For instance, in (39) almost cannot operate on the alternatives associated with every, so that the sentence would mean ‘50 students answered almost every question’.

(39) Almost 50 students answered every question.

7.4 Summary

Although this excursus in to almost leaves many questions open (for instance, due to my focus on DP-modifying almost I have not at all addressed the issue of how the co-occurrence restrictions almost exhibits in the verbal and adjectival domain can be explained), it sketches a general semantics for almost adopting the approach to the semantics of similar expressions by Krifka (1999). The central claim is that these expressions are not (modifiers of) determiners as they are analysed in the framework of Generalized Quantifier Theory. Rather they are particles associated with a focus and operating on scalar alternatives.
Taking the semantics of *almost* seriously invalidates the *almost*-test as a diagnostic for universal quantifiers. Co-occurrence restrictions in the DP domain do not allow simple-minded conclusions on the quantificational nature of the respective DP. As we have seen before for exceptive phrases, it is not merely the local environment, the DP, determining co-occurrence restrictions. Rather the whole clause has to be taken into account. The fact that NIs can be modified by *almost* cannot be taken as an argument against the proposed analysis of NIs.
Summary

In this book, I have proposed a cross-linguistically unified analysis of negative indefinites. Despite the superficially diverse behaviour they exhibit in different languages, it could be shown that a unified analysis is possible that accounts for NIs in a wide range of languages.

The central claim is that NIs are not inherently negative. Rather, they are semantically non-negative indefinites that have to be licensed by negation. The nature of the licensing relation has been argued to be syntactic in nature, being a form of agreement. Under this view, NIs are morpho-syntactic markers of sentential negation. The semantic negation itself may be realized covertly.

In order to account for the diverging behaviour NIs exhibit in different languages, several factors were identified that are subject to parameterization. These factors together determine the way negation is marked morph-syntactically in a particular language. Following Zeijlstra (2004), the licensing of NIs is assumed to be syntactic in nature, technically implemented as feature checking. NIs bear uninterpretable negative features that have to be checked by an interpretable negative feature on a negation operator. The negation operator can either be realized overtly, in the form of a negative marker, or covertly as Op¬. I propose the following inventory of negative features:

1. **Inventory of [NEG]-features:**
   a. Interpretable features:
      i. [ineg] on (some) negative markers
      ii. [ineg0] on the abstract negation operator Op¬
   b. Uninterpretable features:
      i. [uneq] has to be checked by [ineq] or [ineq0]
      ii. [uneq0] has to be checked by [ineq0]

With these features, the different behaviour of NIs in different languages is explained and shown to be of a rather superficial nature. The first difference, regarding co-occurrence with the negative marker, can be accounted for by
assuming a difference in the semantic status of the negative marker, as proposed by Zeijlstra (2004): in non-strict NC-languages, the negative marker is semantically negative (bearing $[\text{ineg}]$), whereas in strict NC-languages it is itself a semantically non-negative concord item (bearing $[\text{uneg}]$). To explain the fact that in some languages NIs cannot co-occur with a semantically negative marker, e.g. in French and in DN-languages, I proposed that NIs in these languages can only be licensed by a covert negation. NIs in these languages are assigned the feature $[\text{uneg}0]$, which has to be checked by $[\text{ineg}0]$ on Op$\rightarrow$. A further difference concerns the availability of Multiple Agree of negative features. In most NC-languages, Multiple Agree is obligatory, but in some it is optional, which leads to DN-readings when multiple NIs co-occur. In DN-languages, Multiple Agree of negative features is not available at all, resulting in a one-to-one relation between NIs and semantic negation. The connection between NIs and the licensing negation is also closer in DN-languages. While the licensing domain of NIs in NC-languages is the entire c-command domain (as long as no clause boundary intervenes), NIs in DN-languages have to be adjacent to their licensor. Table 8.1 summarizes for a number of languages the features assigned to the negative markers and NIs, and the availability of Multiple Agree of $[\text{neg}]$-features.

The proposed analysis of NIs is motivated by three different phenomena NIs give rise to in different languages. The first phenomenon, negative concord, suggests that NIs are not inherently negative. Assuming that NIs are (possibly redundant) markers of sentential negation in a different position, it follows that NIs can co-occur with other morphologically negative expressions. Even

<table>
<thead>
<tr>
<th>Type</th>
<th>Language</th>
<th>feature on NM</th>
<th>feature on NIs</th>
<th>Multiple Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>NC</td>
<td>Italian, Spanish</td>
<td>$[\text{ineg}]$</td>
<td>$[\text{uneg}]$</td>
<td>obligatory</td>
</tr>
<tr>
<td></td>
<td>Greek, Polish, Russian, Ukrainian</td>
<td>$[\text{uneg}]$</td>
<td>$[\text{uneg}(0)]$</td>
<td>obligatory</td>
</tr>
<tr>
<td></td>
<td>Romanian</td>
<td>$[\text{uneg}]$</td>
<td>$[\text{uneg}]$</td>
<td>optional</td>
</tr>
<tr>
<td></td>
<td>French</td>
<td>$ne: [\text{uneg}]$</td>
<td>$[\text{uneg}0]$</td>
<td>optional</td>
</tr>
<tr>
<td></td>
<td>German, Dutch, Scandinavian</td>
<td>$[\text{ineg}]$</td>
<td>$[\text{uneg}0]$</td>
<td>not available</td>
</tr>
</tbody>
</table>
in DN-languages, there are facts indicating that NIs are not negative quantifiers but rather non-negative indefinites that have to be licensed by negation. In these languages NIs give rise to split readings, which shows that the negative and the indefinite part take scope independently of each other. The phenomenon of split scope effects also follows from the assumption that the negation is not interpreted in the position where it is marked in the morpho-syntax. The fact that NIs in the Scandinavian languages exhibit a limited distribution confirms the assumption that NIs cross-linguistically are subject to licensing requirements that are syntactic in nature. The proposed analysis has some broader implications for the conception of grammar.

One insight is that there are no expressions denoting negative quantifiers in natural language.\textsuperscript{1} I have argued that NIs, which are generally taken to be negative quantifiers, are in fact semantically non-negative. The standard view, which assumes NIs to be inherently negative, was misguided by the appearance of NIs in languages such as English, German, and Latin where they seem to contribute negative force. But put against a wider background NIs not co-occurring with negative markers are rather exceptional (see Haspelmath, 2005). Even in these languages, it turns out, on closer inspection, that negation cannot be a lexical component of NIs since negation can be interpreted in a different position than the indefinite part.

Another conclusion concerns the availability of covert operators in natural language structures. The price one has to pay for what I consider a rather simple analysis accounting for the behaviour of NIs in a wide range of languages is that covert operators have to be assumed to be present in the syntactic structure. While one might or might not like the assumption of covert material, I consider the data discussed in this book as an argument in favour of this assumption. Once it is assumed that negation may be realized covertly, it is rather straightforward to account for the phenomena NIs give rise to.

\textsuperscript{1} Sauerland (2000), considering pretty much the same data as I do, arrives at the same conclusion. He also proposes a principled explanation of why negative determiners are not expressible, which is based on his analysis of determiners as quantifiers over choice functions.
References

——— (2009), 'DegP scope reanalysed'. Ms., Universität Tübingen.


——— and van Fintel, K. (2001), 'In-situ interpretation of wh-phrases', Lecture Notes 'Topics in Semantics', MIT.


Horn, L. R. (1972), On the Semantic Properties of Logical Operators in English, doctoral dissertation, UCLA.
— (2008), History of German Negation, Amsterdam: Benjamins.


Landman, F. (2004), Indefinites and the Type of Sets, Malden, MA: Blackwell.
References

References


—and (1997), ‘Bare plurals, bare conditionals and “only”’, *Journal of Semantics* 14: 1–56.


—and (1984b), ‘My reaction to Cresswell’s, Hellan’s, Hoeksema’s and Seuren’s comments’, *Journal of Semantics* 3: 183–199.


Index

absorption of negation 35
abstract (also covert) negation 20–21,
49–51, 58–59, 79–86, 107–109, 134,
186–189
Acquaviva, P. 7, 104 n. 6
adjacency condition 108–109, 129, 140,
177–183, 190
adjectival phrase (AP) 61–63
adjunction to CP 125–129
adverbials 9, 45–46, 138
adversative predicates 22, 37–38, 42, 43,
65–69, 85–86, 216
Agree 47
almost 232–245
amalgamation 134–135
amount comparatives 156–162
anti-additive contexts 24–25
antimorphic contexts 24, 218
antimultiplicative contexts 24
anti-veridical contexts 30
aspect 10, 45
at least 167–173
at most 167–173
Bader, M. 130–131
Bayer, J. 130–131
Bech, G. 89, 94, 151
Beck, S. xi, 56, 71 n. 46, 72, 205, 242–244
bipolar items 217
Bhatt, R. 214
Blaszczak, I. 215, 229
Büring, D. 101, 115–121, 126 n. 19, 154 n. 4
Carlson, G. N. 141, 228
cartographic approach 9
Catalan 17 n. 5
Chierchia G. 27–29, 217, 232 n. 2
Christensen, K. K. 174–178, 188
Christensen, K. R. 176, 183
Cinque, G. 9
comparative quantifiers 151, 155–162
comparatives 22, 24, 42, 69–75, 85,
156–162
constituent negation 3–8, 60, 125
contrasting negation 198
Danish 175–177, 186, 225–226
de Swart, H. 39–42, 144–150, 151–153
decomposition 134–141, 152
definite DP 108
degree phrase (Deg P) 157–166
degree quantifier 157–166
Déprez, V. 225 n. 18
diachronic development 29 n. 11, 76,
81–85, 222
Distributed Morphology 139–141, 220
D-linking 133
domain of quantification 27–29, 142, 229
domain widening 27–29
double negation 15–16, 39–41, 52–53,
78–84, 106–108, 187–188
downward-entailing contexts 23–28,
75–76
ellipsis 57–60, 105–106
in comparatives 70–75, 160 n. 10
emphatic negation 40 n. 22
emphatic stress 19
English 15–16, 150–195, 221–223
epistemic modals 167–173
equatives 73–75
events 7–8, 10, 44
exceptives 229–232
existential closure 205, 206
existential constructions 115
extended projections 131–132
Index

feature movement 205
fewer 158–162
focus 115–124, 242–243
focus-sensitive operator 153
fragmentary answer 2, 26, 57–60
free choice item 28, 212, 215, 228
French 17 n. 5, 39–42, 77–86
Gajewski, J. xi, 70, 230–232
gapping 192
general indefinites 134, 206, 212–227
generalized quantifier theory 3, 156, 173
German 16, 46, 89–150, 206–210, 212–224
Geurts, B. 141–144, 168–173, 244
Giannakidou, A. 17–18, 29–32, 53, 197–199
Greek 18, 29–32, 198
Grimshaw, J. 131
Guerzoni, E. xi, 52 n. 33, 211 n. 10
Hackl, M. 151, 156–162, 167
Haegeman, L. 33–38, 183, 197
Halle, M. 139, 220
Hamblin semantics 204–212
Harley, H. 139
Hartmann, K. 126, 154 n. 4
Haspelmath, M. 1, 76, 248
Heim, I. xi, 53, 55, 160–166, 168, 199, 208
Herburger E. 43–46, 66
Hoeksema, J. 133 n. 23, 220
Holmberg, A. 182, 184
Horn scale 237
Horn, L. R. 228, 237, 241–242
Iatridou, S. 155 n. 5
Icelandic 175
idiomatic expressions 102, 115, 143, 149
incorporation 134–141
information structure 127
intermediate scope 148
interpretable feature 47
intervention effects 205, 211 n. 16, 242
inverse scope 116
Italian 14, 17, 19, 33–38, 48–53, 58
Jacobs, J. 89, 108, 125, 134, 140–141
Jäger, A. xi, 76, 220
Johnson, K. 192
Jonsson, J. G. 183
Kadmon, N. 27, 217
Kayne, R. 183, 192–193
Keenan, E. L. 156
kinds 141
Klima, E. S. 3–4, 134, 193
Kratzer, A. xi, 90, 130, 204–11
Krifka, M. 27, 169, 217, 237
Ladusaw, W. A. 23, 47, 49, 51, 58, 199, 202–204, 230
Lahiri, U. 27, 217
Laka, I. 19–22, 49, 66
Landman, F. 27, 217
Less 158–162
light negation 214
Linebarger, M. C. 242
little 163–166
Marantz, A. 139, 220
McNally, L. 101, 237
measure phrases 104, 115, 144, 157 n. 7
Merchant, J. 59
metalinguistic negation 108 n. 12
Milsark, G. 93, 101
modal sufficiency constructions 155 n. 5
modal verbs 90, 109, 202–204, 207–210
Montague, R. 97
morphological blocking 220
Morzycki, M. 233–236
Multiple Agree 49, 82, 108, 247
negation
interaction with tense 10–12
semantics of 10
negation phrase (NegP)  8–9, 33–37, 49 n. 29, 77, 183–189, 193
negative concord (NC)  14–18
  non-strict negative concord  17, 19, 33, 41, 43, 49, 58
  strict negative concord  18, 29
negative fragmentary answer  2, 57–60
negative indefinites
  quantificational status  56
  scope of  55
  self-licensing  50, 58
negative markers
  distribution of  53
  in French  77
  in German  107
  in non-strict negative concord languages  51
  in strict negative concord languages  51
negative polarity item (NPI)  22–32, 43, 58, 212–227, 228
  strong negative polarity item  24–25
  superstrong negative polarity item  25
  weak negative polarity item  25
  licensing context  22–23
  minimizer  103, 224
negative quantifiers  3, 34–36, 43, 90, 248
NEG-criterion  33–34, 183, 197
neg-raising  94
non-veridical contexts  30–31
Norwegian  174–178
Nouwen, R.  xi, 168–173, 244
Noyer, R.  139
n-words  16–17

Object Shift  182, 184
only  153–155

parameterization  247
Partee, B.  10, 98, 229, 136
partitive reading  132
Paslawska, A.  215

Pereltsvaig, A.  215, 218, 220
Pesetsky, D.  205
pied-piping  131, 195
Polish  18, 51
Pollock, J.-Y  8–9
positive operator  165
positive polarity item  217, 227, 241
Potts, C.  191
predicate raising  192
predicative nominals  98–101, 115
prepositional phrase (PP)  64, 129–133, 140, 194–196
Progovac, L.  215
quantification over higher types  144–150
questions  31, 37–38, 75

reconstruction  138
Reinhart, T.  55–56, 201–203
remnant movement  128, 192–194
restructuring verbs  94–96, 111
resumptive quantification  39
Romanian  18, 87
Rooth, M.  115, 136, 153
Rowlett, P.  77–81
Rullmann, H.  89, 134, 163

Sag, I.A.  39–42
Sadock, J.  233
Sauerland, U.  xi, 248 n. 1
scalar modifiers  167–173
Scandinavian  174–190, 225–226
Schwarz, B.  214
Schwarzschild, R.  70
scrambling  108, 116
Sells, P.  188
sentential negation  3–12, 40
Seuren, P. A. M.  70
Shimoyama, J.  204–212
Slavic languages  18, 215
Spanish  17, 20–23, 41, 43–46, 224–225
split scope
  in English  15, 190–194
in German 89–103, 109–124, 126, 130, 141–150
in negative concord languages 198–200, 209–210
in Scandinavian 185–187
with comparative quantifiers 151–153, 155–162
with at most 147, 151–153, 167–173
with few 151, 163–166
with only 152–155
Sternefeld, W. xi, 6, 107 n. 9, 126
subjunctive clauses 65–69
Svenonius, P. 183–185
Swedish 175–190

there-constructions 191
there-insertion 93
topic 115–124, 127–129, 188
topic-focus accent 101–102, 115–124, 128
transitive intensional verbs 96–101, 112–113, 149–150, 159
type-shifting 98–99, 136, 149
Ukrainian 215–217
uninterpretable feature 47
unselective binding 199–204
van der Wouden, T. 23–24, 217
vandenWyngaerd, G. 215
Vikner, S. 107 n. 9, 178
von Fintel, K. xi, 153, 155 n. 5, 229–232
von Stechow, A. xi, 71, 154 n.4, 165
Watanabe, A. 58
without 22, 24, 30, 42 n. 24, 75, 85
Zanutini, R. 33–38, 183, 197, 228
Zeijlstra, H. xi, 47–51, 68, 77–79
Zimmermann, T. E. 97, 113, 171 n. 18, 172
Zwarts, F. 24–25
Published
1 The Syntax of Silence: Sluicing, Islands, and the Theory of Ellipsis
   by Jason Merchant
2 Questions and Answers in Embedded Contexts
   by Utpal Lahiri
3 Phonetics, Phonology, and Cognition
   edited by Jacques Durand and Bernard Laks
4 At the Syntax-Pragmatics Interface: Concept Formation and Verbal
   Underspecification in Dynamic Syntax
   by Lutz Marten
5 The Un accusativity Puzzle: Explorations of the Syntax-Lexicon
   Interface
   edited by Artemis Alexiadou, Elena Anagnostopoulou, and Martin Everaert
6 Beyond Morphology: Interface Conditions on Word Formation
   by Peter Ackema and Ad Neeleman
7 The Logic of Conventional Implicatures
   by Christopher Potts
8 Paradigms of Phonological Theory
   edited by Laura Downing, T. Alan Hall, and Renate Raffelsiefen
9 The Verbal Complex in Romance
   by Paola Monachesi
10 The Syntax of Aspect: Deriving Thematic and Aspectual Interpretation
    edited by Nomi Erteschik-Shir and Tova Rapoport
11 Aspects of the Theory of Clitics
    by Stephen Anderson
12 Canonical Forms in Prosodic Morphology
    by Laura J. Downing
13 Aspect and Reference Time
    by Olga Borik
14 Direct Compositionality
    edited by Chris Barker and Pauline Jacobson
15 A Natural History of Infixation
    by Alan C. L. Yu
16 Phi-Theory: Phi-Features Across Interfaces and Modules
    edited by Daniel Harbour, David Adger, and Susana Béjar
17 French Dislocation: Interpretation, Syntax, Acquisition
    by Cécile De Cat
18 Inflectional Identity
    edited by Asaf Bachrach and Andrew Nevis
19 Lexical Plurals
    by Paolo Acquaviva
20 Adjectives and Adverbs: Syntax, Semantics, and Discourse
    edited by Louise McNally and Christopher Kennedy
21 InterPhases: Phase-Theoretic Investigations of Linguistic Interfaces
    edited by Kleanthes Grohmann
22 Negation in Gapping
    by Sophie Repp
23 A Derivational Syntax for Information Structure
    by Luis López
24 Quantification, Definiteness, and Nominalization
    edited by Anastasia Giannakidou and Monika Rathert
25 The Syntax of Sentential Stress
    by Arsalan Kahnemuyipour
26 Tense, Aspect, and Indexicality
    by James Higginbotham